

Kingston Elementary School's Living Classroom Curriculum Guide

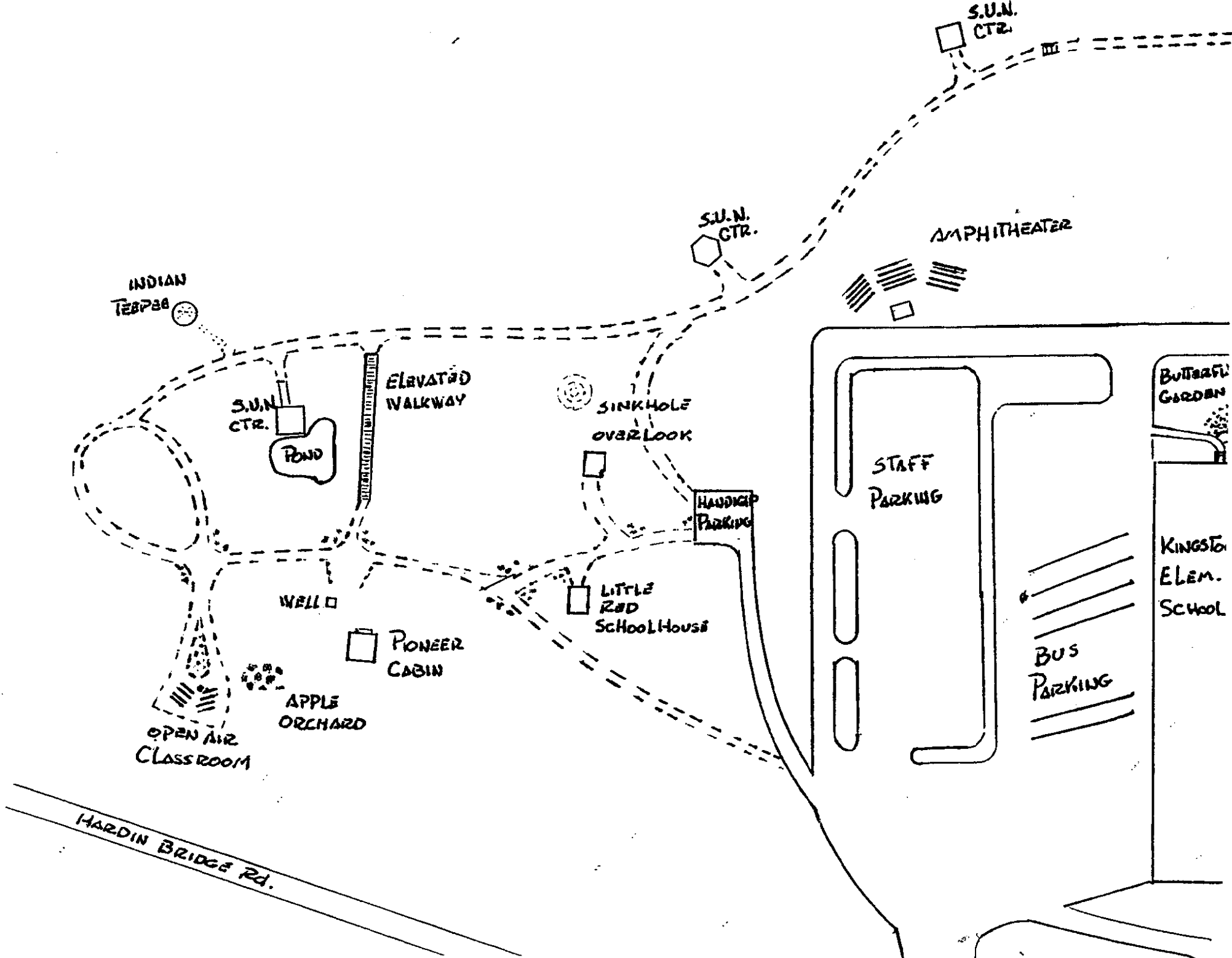


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Entrance Sign



Pioneer Homestead



Wetlands Boardwalk



One Room School House (seats 20-30)



Amphitheater (seats 150)

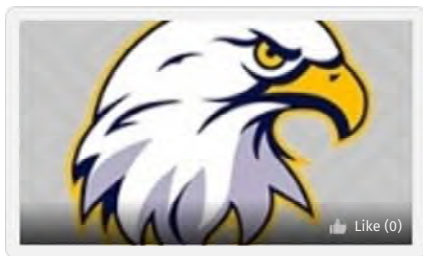


Amphitheater Stage



Collection

PLANT FINDER ADD NEW +



Kingston Elementary School Outdoor Classroom Tree Walk

Created by [Paul Pugliese](#)
Created on: 05 Mar 2019; Updated on: 16 Apr 2019

My Collection's Story

Physical Address

240 Hardin Bridge Rd, Kingston, GA 30145, USA

Collection Location



- Photos
- Plants
- Subcollections
- Notes
- Map



Sort by: Date

American Sweetgum

Black Cherry

Blackjack Oak

Black Oak

Black Tupelo

Common Fig

Common Persimmon

Eastern Redbud

Eastern Redcedar

Farkleberry

Flowering Dogwood

Honeylocust

Loblolly Pine

Mockernut Hickory

Northern Red Oak

Paw Paw

Pignut Hickory

Post Oak

Rabbiteye Blueberry

Red Maple

Scarlet Oak

Shortleaf Pine

Sourwood

Southern Red Oak

Guidelines for Use of the Living Classroom

Students are expected to:

- Follow all Safety Rules.
- Stay with your class or with an adult at all times.
- Stay on the Nature Trails unless given permission by your teacher to explore.
- Always stay in designated areas.
- Walk, Do Not Run. Stay off timbers along the trails.
- Remember No Climbing, Swinging or Jumping On the Benches, Fences, Well, or Other Structures.
- Do not place body parts through posts on S.U.N. Centers.
- Do not throw rocks, sticks or pull on trees.
- Do not chew on wood platforms, benches, etc.
- Respect the Living Classroom, do not write, carve or draw on wooden structures.
- Observe, but do not touch animals or plants without permission.
- Remember not to remove any natural materials without permission.
- Leave the Living Classroom as you found it. Take only memories with you.
- Place all liter in the trash bins.
- It is important to keep the Living Classroom Clean and Neat.

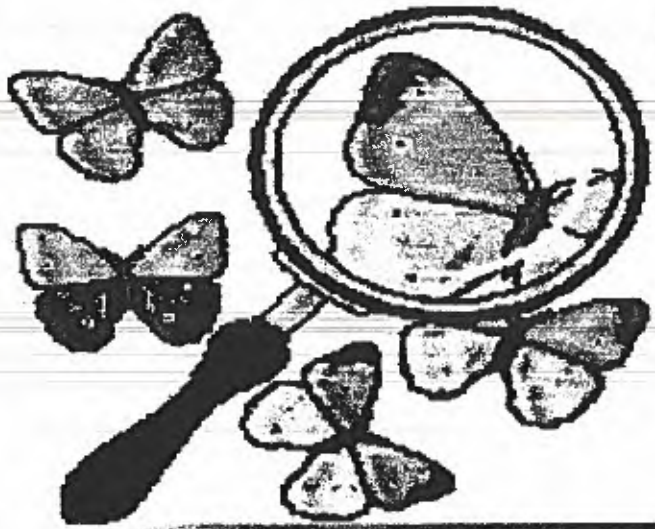
Teachers are expected to:

- Visits to the Living Classroom should be recorded in Lesson Plans.
- Always sign up for a scheduled visit and let the office or colleague know when you will return.
- Check out keys, (well, storage areas) walkie talkies from the office.
- Be aware of weather conditions....slippery when wet.
- Be aware of the time so a prolonged visit doesn't interfere with lunch schedule or bus loading.
- If students are in special classes, work around their schedule or make arrangements with special area teacher.
- Review safety procedures with your class BEFORE taking them to the Living Classroom.
- Supervise students at all times. Teachers are responsible for all students in their care.
- Let students know what is expected EVERY time you visit the Living Classroom. Set parameters to establish work areas, let students know where they can and can not be during an activity.
- Report any unsafe or hazardous conditions to the office.
- Be aware of any students who are allergic to bee stings, insect bites etc.
- Return any items borrowed from the Resource Room.
- Keep the Living Classroom clean and free of liter.

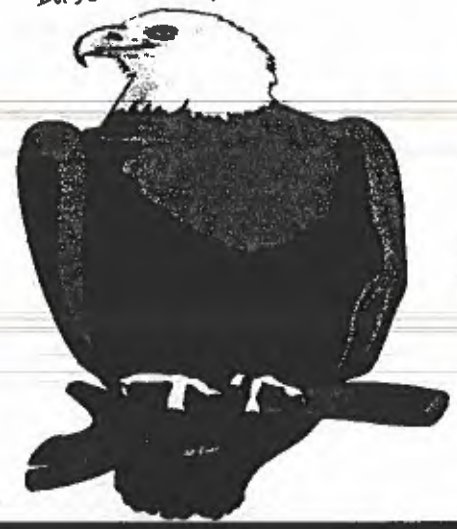
Visiting Schools are expected to:

- Sign in and Sign out in the Office.
- Check out keys and/or walkie talkies in the Office.
- Enforce all student rules and teacher guidelines as listed above.
- Schedule visit at least two weeks prior to field trip.
- Return any items borrowed from the Resource Room.
- Keep the Living Classroom free of liter.
- Do not remove natural materials for projects. (A class sample may be taken, but not one for each student.
- Ensure that you have an adequate number of adults for supervision in the Living Classroom.
- Buses should park in bus loading area.
- Enjoy your visit!

Shadows + direction v



vs Chemical Insecticides



Native American Signal Trees?

Compost Cooking

Tree Kings + Weather
Archaeology - Shards

Listening Points - Birds
Forest Products - Paper, Lumber

The Living Classroom

* Clay + Soil

Woods Bent
Open Niche
Process - What Build
in location areas



Why Covered Well?



Native American

Natural Materials - dyes
Fibers

Well - simple machines -
dotted: counterbalances

Living Classroom

Purpose: To enable students to develop higher level thinking skills.

Goal: To enrich the curriculum, by developing a “*Living Classroom*” as a series of networked nature trails on campus.

Proposed Learning Sites in the Living Classroom:

- ★ ***Nature Trails*** - provides a natural setting to observe ecosystems.
- ★ ***Amphitheater*** - an area for lectures and language arts performances in an outdoor setting.
- ★ ***Archeological Dig*** - a pre-prepared site that allows the learner to discover how to uncover the past by participating in an actual dig.



- ★ ***Winter and Summer Gardens*** - students will participate in preparing, planting, observing growth and harvesting an actual garden.
- ★ ***Indian Village and Pioneer Homestead*** - students will participate in the construction of these areas. These areas can be later utilized as campsites for the future Kingston Science Club.
- ★ ***Flower Garden*** - students will participate in the planting and managing of this garden site. An ideal setting to observe an insect ecosystem.
- ★ ***Compost pile*** - students will utilize this area to observe decomposition and as a natural resource for garden areas.
- ★ ***Compass Rose Garden*** - utilized by students in the study of geography to identify and understand cardinal directions.



- ★ ***Weather Station*** - utilized by the students to collect and chart weather data.
- ★ ***United States and World Maps*** - topographical relief maps used in geographical study.
- ★ ***Managed and Unmanaged Forests*** - students will learn the importance of managing ecosystems by comparing and contrasting the different forest areas.
- ★ ***Wetlands Site*** - natural site on the campus used to study this ecosystem.
- ★ ***Wildlife Sanctuary*** - to help students learn stewardship.



Subject / Topic of Study: Recognizing / Forming own name

Grade Level: Preschool / Pre-K / Kindergarten

Time Considerations: 30 minutes

Purpose / Objectives:

FATA.K.9 Assumes roles in creative drama and dramatic play.

FATA.K.10 Uses simple objects and available materials as props, scenery, and costumes for dramatic play and drama activities.

LA.K.12 Recognizes own name in print.

LA.K.2 Listens to a variety of literary forms, including stories and poems.

LA.K.35 Uses left-to-right pattern of writing.

LA.K.37 Copies simple shapes, designs, numerals, and letters.

PE.K.2 Demonstrates and identifies the basic locomotor movements of walking, running, hopping, jumping, galloping, sliding, leaping and skipping.

Special Needs Objectives:

Increases mean length of utterances.

Appropriately verbalizes pragmatic functions to gain attention, request assistance or request an object.

Increases toleration of tactile stimulating materials.

Materials / Resources Needed:

- Froggy Goes to School by Jonathan London
- Dirt
- Spray bottles with water
- Construction paper
- Trays
- Grass seed
- Glue
- Dress up clothes

Activities / Procedures:

1. Read Froggy Goes to School . Ask questions about the story (e.g. What did Froggy do on his first day of school?).
2. Talk about how frogs don't really go to school, how Froggy hopped everywhere. Get the kids to hop around the room and reenact him dressing for school, etc.

3. As students are playing, role play characters from Froggy Goes to School. Reenact the role of the teacher from the story and call the students individually to a table. Have names written out on construction paper. Get students to take their names to the Living Classroom.
4. Have students trace their names in glue and then put dirt, grass, etc. in the glue.
5. Return to the classroom, give trays with potting soil. Have them write their name in the soil, drop seeds on their name, water with squirt bottle. Put in safe place to observe grass growth.

Evaluation / Assessment:

- Teacher observation of finished names
- Teacher questioning

Extension / Integration Ideas:

- S.K.15 Uses senses to sort and classify colors, shapes, sizes, sounds, tastes, odors, textures and temperature.
- Discuss the feel, smell, color, etc. of the dirt, the sounds in the Living Classroom, etc.

Subject / Topic of Study: Science / Art - Nature Prints

Grade Level: K-5

Time Consideration: 30 minutes Living Classroom , 30 minutes classroom

Purpose / Objectives:

•Students will learn the art skills of printmaking, pattern making, and compositional arrangement.

Materials / Resources Needed:

- Items from nature trails in Living Classroom (leaves, pine cones, grass stems, sticks, vines, etc.)
- Items from Apple Orchard in Living Classroom (apples, berries)
- Plastic baggies
- Tempera paint (several colors)
- Construction paper
- Paint trays

Activities / Procedures:

1. Take students out to the Living Classroom and have them collect the items mentioned above and place them in their plastic baggies.
2. In the classroom, students will dip the natural objects into paint trays filled with various colors of Tempera paint.
3. Students will print with their natural objects onto sheets of construction paper.

Evaluation / Assessment:

- Completed nature print projects

Subject / Topic of Study: Physical Education / Pioneer Children's Recreation

Grade Level: K-5

Time Consideration: Extended Project

Purpose / Objectives:

- To explore how pioneer children used "free time".
- To demonstrate various individual and team games used in pioneer times.
- To demonstrate how pioneer children made or gained access to equipment used in this time period.

Materials / Resources Needed:

- Historical accounts / books listing games used in Pioneer days
- Objects used in games
- Guest speakers who lived close to this era or who had relatives in this time period

Activities / Procedures:

1. Teacher will research and teach games used in Pioneer times.
2. Make objects used in games.
3. Have guest speakers / resources come in and teach the games. (Possibly utilize Senior Citizen Groups).

Evaluation / Assessment:

- Student participation
- Teacher observation

Extension / Integration Ideas:

- Have students research and teach games.

Subject / Topic of Study: Indians / Thanksgiving

Grade Level: Preschool / Pre-K / Kindergarten

Time Considerations: 40 minutes

Purpose / Objectives:

LA.K.2 Listens to a variety of literary forms, including stories and poems.

LA.K.3 Follow 1 to 2 part oral directions

LA.K.8 Increases vocabulary to reflect a growing range of interests and knowledge.

LA.K.40 Recognizes cultural diversity represented in literature

SS.K.2 States ways in which people are alike and different.

SS.K.17 Identifies the purpose and customs associated with various special days including Thanksgiving and birthdays.

FAVA.K.4 Demonstrates proper care and safe use of art materials and tools.

Special Needs Objectives:

Increases mean length of utterances.

Appropriately verbalizes pragmatic functions to gain attention, request assistance, request an object.

Demonstrates an understanding of "what" questions.

Increases independence and fine motor skills (coloring, cutting etc.).

Materials / Resources Needed:

- Thanksgiving Day by Gail Gibbons
- If You Lived with the Sioux Indians by Ann McGovern
- Teepee in Living Classroom
- Paint
- Paintbrushes
- Crayons
- Markers
- Scissors
- 12" x18" pieces of cardboard or poster board
- Manila paper
- Straws
- Stapler

- **Activities/Procedures:**

1. Take students to teepee in Living Classroom.
2. Read Thanksgiving Day by Gibbons. Talk about the book. Show If You Lived With the Sioux Indians and point out the teepees and other details. Talk about the Indians living in the teepees.
3. Allow students time to explore. Ask them questions to get them to compare it to the pioneer homestead.
4. Have the students construct 1 teepee each. Go to the classroom. Cut out one or two teepee patterns. Each child traces a pattern onto manila paper, cut it out, and decorate it with paint, markers, or crayons. The teacher staples 3 straws to the center of the straight edge of the cut-out. Fold and staple together to form a teepee.

Evaluation/Assessment:

- Observation of finished teepee
- Discussion

Extension/Integration Ideas:

- Let students make Indian jewelry, vests (out of paper bags), and head dresses.

Source:

- The Giant Encyclopedia of Theme Activities for Children 2 to 5. Gryphon House.
p. 311

Subject / Topic of Study: Dinosaurs

Grade Level: Preschool / Pre-K / Kindergarten

Time Considerations: 45 minutes

Purpose / Objectives:

L.A.K.3 Follows 1 and 2 part oral directions.

L.A.K.8 Increases vocabulary to reflect a growing range of interest and knowledge.

S.K.3 Identifies and practices accepted safety procedures in manipulating science materials and equipment.

S.K.4 Actively engages in the learning process via hands-on/minds-on science activities. Uses appropriate tools to collect and analyze data and solve problems.

S.K.17 Recognizes and names common earth materials, such as soil, rocks, water, air.

Special Needs Objectives:

Remains in a designated area.

Increases attention and remains of task.

Demonstrates proper care and safe use of art materials and tools.

Materials / Resources Needed:

- What Happened to Patrick's Dinosaurs? by Carol Carrick
- Various cleaned bones
- Archeological dig area of Living Classroom
- Playdough
- Paint brushes
- Sand in sand table
- Toy dinosaurs
- Small plastic shovels

Activities / Procedures:

1. Bring in cleaned t-bones, chicken bones, ham bone, egg shells, etc. Bury the bones in the archeological dig area of the Living Classroom.

2. Read to the students What Happened to Patrick's Dinosaurs? by Carol Carrick. Talk about how dinosaurs lived a long time ago and paleontologists find their bones in the ground. Talk about the characteristics of dinosaurs: eating habits, etc.
3. Set up two centers to be swapped out in 5-10 minute segment.
 - Center 1:* Give students playdough and various bones. Let them press bones into playdough to show how it makes an impression of the bones. Let the students make dinosaur models out of the playdough.
 - Center 2:* Put play dinosaurs in the sand table under the sand. Let the students use paint brushes to uncover the dinosaurs.
4. Take students to the Living Classroom and let them dig and brush out the bones that have been buried there.

Evaluation / Assessment:

- Teacher observations
- Completed projects

Extension / Integration Ideas:

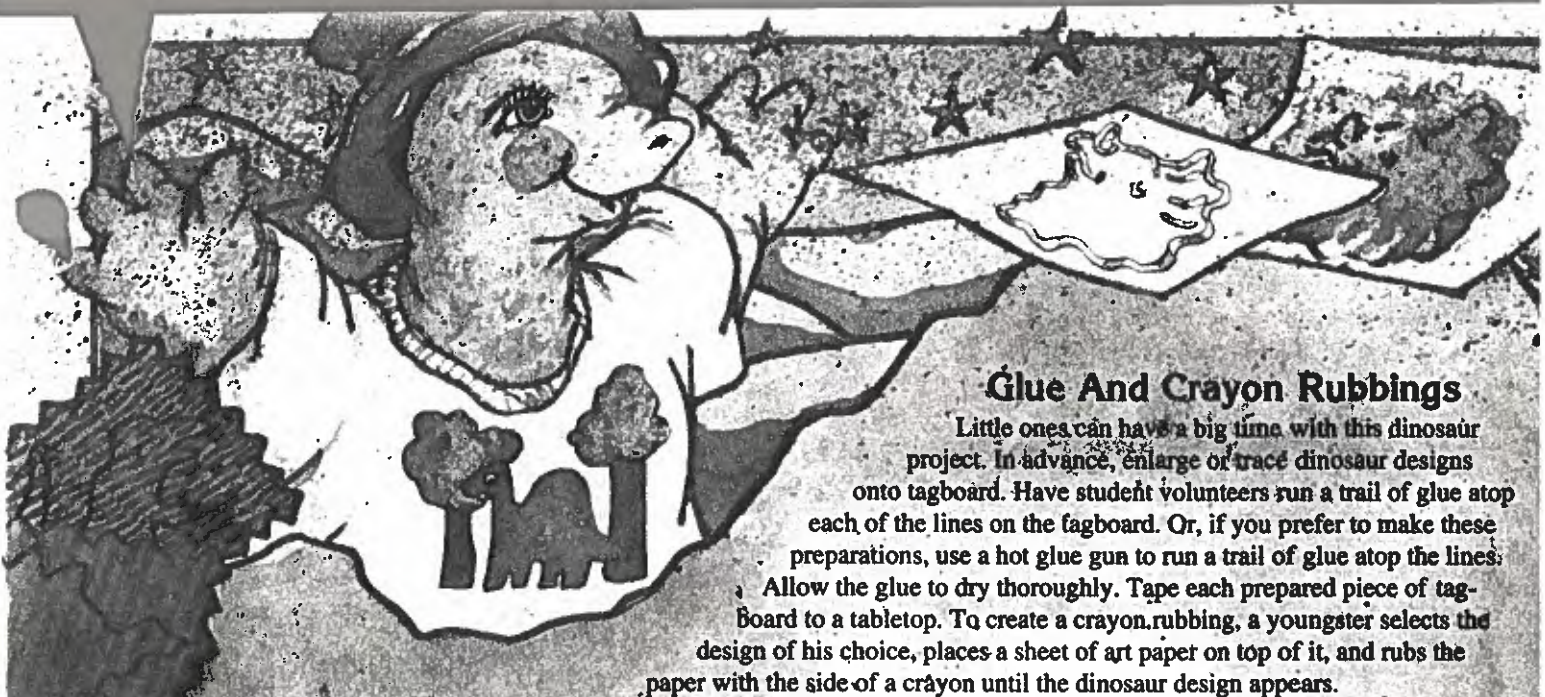
- Dinosaur Roar by Paul and Henrietta Strickland
- Saturday Night at the Dinosaur Stomp by Carol Shields
- Make dinosaur chow:*

Dinosaur Delight

- ¼ cup dirt (cocoa)
- ½ cup swamp water (milk with green food coloring)
- 2 cups crushed bones (sugar)
- ½ cup fat (butter)
- 2 cups dead grass (uncooked oatmeal)
- ½ cup squashed bugs (peanut butter)

Mix dirt and swamp water. Add crushed bones and fat. Boil about 3 minutes. Add squashed bugs and dead grass, and stir until melted. Remove from heat and stir until mixture begins to thicken. Drop by tablespoonfuls onto waxed paper. Cool, eat, and enjoy. (Mailbox Pre-K / K, Education Center, Inc, April/May, 1990, p. 17)

- Let students decide if they want to be meat eating or plant eating dinosaurs. Give them broccoli, etc. versus cut up hot dogs, etc.
- Talk about how paleontologists put bones together to reconstruct a dinosaur. Let students put together a dinosaur puzzle.
- Give each student a meat tray with plaster-of-paris in it. Let students collect rocks, leaves, bones, etc. and cut outs of dinosaur shapes. Press into plaster and let dry.



Glue And Crayon Rubbings

Little ones can have a big time with this dinosaur project. In advance, enlarge or trace dinosaur designs onto tagboard. Have student volunteers run a trail of glue atop each of the lines on the tagboard. Or, if you prefer to make these preparations, use a hot glue gun to run a trail of glue atop the lines. Allow the glue to dry thoroughly. Tape each prepared piece of tagboard to a tabletop. To create a crayon rubbing, a youngster selects the design of his choice, places a sheet of art paper on top of it, and rubs the paper with the side of a crayon until the dinosaur design appears.

Jennifer Strathdee—Pre-K Special Education, Parkside School, Auburn, NY

Dinosaur Chow

Grins and giggles will abound as your youngsters stir up this tasty "dinosaur food." If desired, cover the labels of the ingredients with labels to match the ingredients list below.

Dinosaur Delight

- 1/4 cup dirt (cocoa)
- 1/2 cup swamp water (milk with green food coloring)
- 2 cups crushed bones (sugar)
- 1/2 cup fat (butter)
- 2 cups dead grass (uncooked oatmeal)
- 1/2 cup squashed bugs (peanut butter)

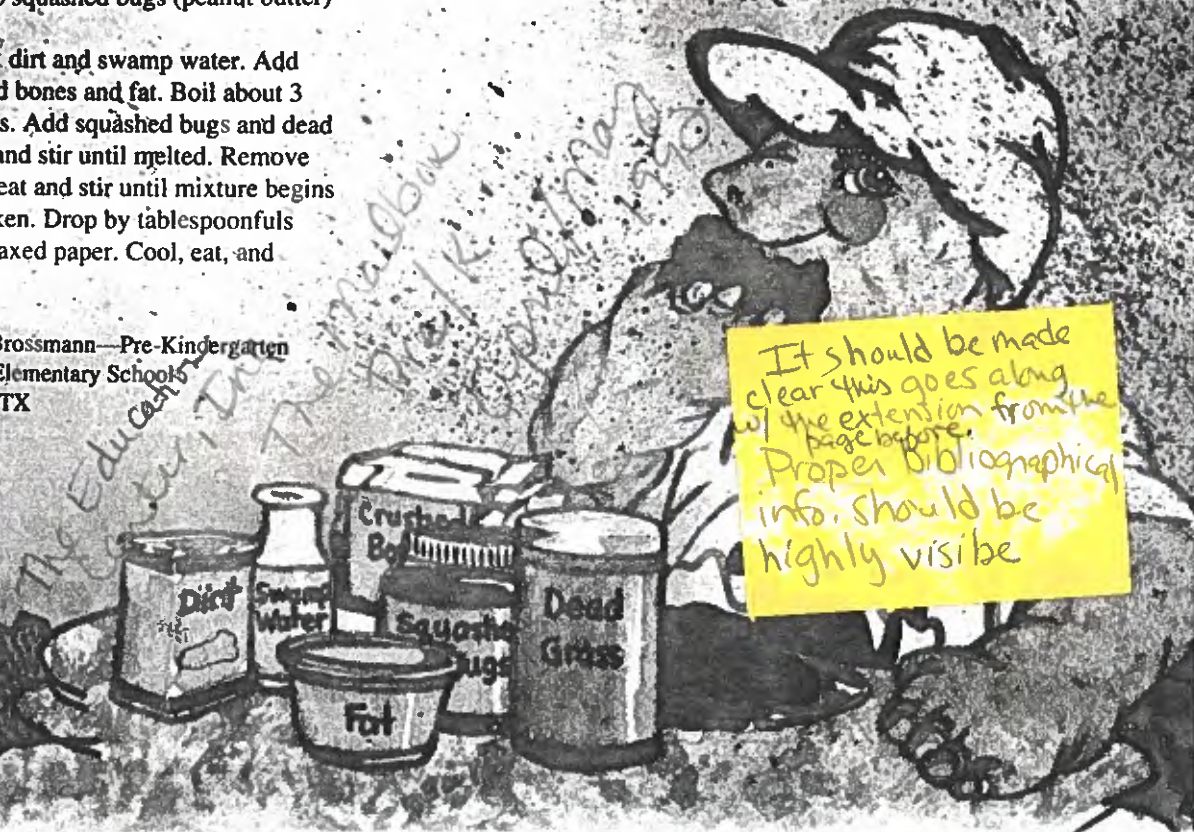
Mix dirt and swamp water. Add crushed bones and fat. Boil about 3 minutes. Add squashed bugs and dead grass, and stir until melted. Remove from heat and stir until mixture begins to thicken. Drop by tablespoonfuls onto waxed paper. Cool, eat, and enjoy!

Sheila Brossmann—Pre-Kindergarten
Wallis Elementary School
Wallis, TX

Enormously Popular T-Shirts

Children can do a marvelous job of creating dinosaur T-shirts with a little creative assistance from you! Iron Wonder-Under to a length of felt. Cut the felt into squares and have each youngster trace a dinosaur template onto a square. Cut out the dinosaurs, peel off the paper backing, and press each onto a T-shirt. Have students squeeze fabric paint around the perimeter of the design, if desired. Then stitch on a wiggle eye or use fabric paint to make an eye. Invite students to turn their shirts into original works of art by adding more fabric paint details.

adapted from an idea by Nina Tabanian—Pre-Kindergarten
St. Bernard Of Clairvaux
Dallas, TX



It should be made clear this goes along w/ the extension from the page before. Proper bibliographical info. should be highly visible

P17

The Educator The Imagination Project 1990

Subject / Topic of Study: Spanish - Colors

Grade Level: K-5

Time Consideration: One class period

Purpose / Objectives:

Students will learn to identify objects in the Living Classroom according to colors.

Materials / Resources Needed:

Living Classroom (preferably Spring or Autumn).

Activities / Procedures:

1. Review the vocabulary for colors, and most common items in the Living Classroom with flash cards (e.g., tree, bird, plant, flower, grass, house, school, etc.).
2. Take the students out to the Living Classroom. (Take flash cards with you in case a student needs prompting.)
3. The teacher calls out in Spanish "I spy something (green)". Students call back in Spanish their guesses (leaf or tree). The student who guesses correctly gets to choose the next object and lead the next round of guessing.

Evaluation / Assessment:

- Student participation
- Teacher observation

Subject / Topic of Study: Spanish - Weather and Clothing in Spanish

Grade Level: K-5

Time Consideration: 45 minutes

Purpose / Objectives:

Students will identify, classify, and pronounce clothing terms appropriate for the seasons and the weather.

Materials / Resources Needed:

- Living Classroom
- Clothing flash cards
- Weather and seasons flash cards

Activities / Procedures:

1. Class will meet at one of the Sun Centers in the Living Classroom.
2. Teacher introduces or reviews weather, seasons, and clothing with students using the Spanish flash cards.
3. Students will then describe the weather conditions at the time of the class in Spanish.
4. Students will identify types of clothing worn by other students for the season and weather in Spanish.
5. Students and teacher will identify and discuss in Spanish what types of clothing are appropriate for different seasons and weather.

Evaluation / Assessment:

- Student participation and teacher observation

Extension / Integration Ideas:

- This lesson can integrate colors in nature and clothing.

It appears this activity is done by using the teacher's personal items. maybe the flashcards could be duplicated so regular ed. teachers could do it also.

Subject / Topic of Study: Music

Grade Level: Kindergarten

Time Consideration: One class period

Purpose / Objectives:

FAM.K.3 Identifies contrasts in music: loud-soft and fast-slow.

Materials / Resources Needed:

- Recording: "Ears Hear"
- Chart 6 from Big Book Kindergarten ?????

Activities / Procedures:

1. Discuss with the students where they hear music in their everyday lives (radio, television, records, tape players, CD players, computers, etc.).
2. Name other interesting sounds that sometimes seem like music (birds singing, bells ringing, balls bouncing, leaves crunching, etc.).
3. Look at Chart 6 in the Big Book. Have students take turns identifying each picture and the sound suggested by each picture (fly, motorcycle, tea kettle, dog, snoring man, bird, car).
4. Decide which sounds are soft and which are loud. Practice each sound, paying attention to the level of how loud or soft each sound is.
5. Listen to "Ears Hear". Have students show how loud or soft each sound is by moving hands apart for loud sounds and close together for soft sounds.
6. Take students on a sound walk through the Living Classroom. Listen for different sounds and classify them as loud or soft (compile list).
7. Have each student draw a picture of one of the sound sources.
8. Create a bulletin board with the pictures classified under the words "loud" and "soft".

Evaluation / Assessment:

- Teacher observation
- Student participation
- Pictures of sound sources

What record is
this song
from? Good to
know for quick
referencing!

Chart 6 from
Big Book
Kindergarten
where is it + what
is it?

Subject / Topic of Study: Garden Pond / Science

Grade Level: Preschool / Pre-K

Time Considerations: 20 minutes

Purpose / Objectives:

S.K.1 Asks questions, makes and keeps simple records of observations, sorts objects, communicates with others, and makes predictions, and uses estimation and measurement.

LA.K.2 Listens to a variety of literary forms including stories and poems.

LA.K.3 Listens to and follows one and two part oral directions.

Materials / Resources Needed:

- Dishpan
- Shovel
- Pond Life by R.K. Kirkpatrick
- Dirt/mud
- Microscope

Activities / Procedures:

1. Read and discuss Pond Life by Kirkpatrick.
2. Discuss how tiny things grow in water and predict how many days it would take for us to see tiny things grow in a new Garden Pond.
3. Make a garden pond to create a habitat for many animals:
 - Dig a hole in the ground and place a dishpan in it.
 - Make sure to pack dirt around pan.
 - Place mud and water in pan.
 - Put a stick on the side of the pan so animals that fall in can crawl out.
 - Examine the water in 3 weeks to see animals.
 - (Early summer is the best time to do this.)
4. Examine the water samples under a microscope.
5. Discuss what would happen to the water if it was left alone for 3 more weeks.

Evaluation / Assessment:

- Teacher observation of finished garden pond

Extension / Integration Ideas:

- Dip water out of the Reflecting Pond and compare it to the water from garden pond.
- Examine water samples under the microscope.

Source

- Worm's Eye View: Make Your Own Wildlife Refuge by Kipchak Johnson. Ill. by Thonpson Yardley. Millbrook Press. Brookfield, Connecticut.

Subject / Topic of Study: Surface Features - Science

Grade Level: Preschool / Pre-K / Kindergarten

Time Considerations: 30 minutes

Purpose / Objectives:

S.K.17 Recognizes and names common earth materials such as soil, rocks, water and air.

FAVA.K.4 Demonstrates proper care and safe use of art materials and tools.

S.K.19 Recognizes features and characteristics of the Earth's surface
Identifies common surface features such as oceans, lakes, mountains and others through audio visuals, models, or direct observation.

LA.K.1 Listens and speaks in informal conversations with peers and adults.

LA.K.9 Communicates effectively when using descriptive language, relating experiences and retelling stories.

Special Needs Objectives:

Increases mean length of utterances.

Increases independence of fine motor skills (cutting and gluing)

Appropriately verbalizes pragmatic functions to gain attention, request an object, request assistance.

Demonstrates an understanding of "what" questions.

Materials / Resources Needed:

- Chart tablet sheets labeled with different surface features (mountains, lakes, oceans)
- Scissors
- Glue
- Magazines

Activities / Procedures:

1. Place out for student observation, a large variety of books relating to surface features (lakes, oceans, mountains, plains, volcanoes)
2. Discuss the different characteristics of each feature.

3. Pass out magazines and instruct students to cut out pictures of surface features.
4. Have students glue their pictures onto the correct chart tablet.

Evaluation / Assessment:

- Teacher observation

Extension / Integration Ideas:

- Have students to bring in personal family pictures of mountains or oceans from family vacations or trips.

Subject / Topic of Study: The Pond

Grade Level: Pre-K / Kindergarten

Time Considerations: 30 minutes outdoor activities
30 minutes indoor activities

Purpose / Objectives:

S.K.11 Describe differences between living and nonliving things and classifies things as living or nonliving, sorts examples of objects into living and nonliving categories, using the following criteria; movement, growth, reproduction of requirements for food/nutrition, water, air.

Materials / Resources Needed:

- Book: Life in the Pond by Eileen Curran
- Reflecting pond
- Strainer
- Containers
- Chart tablet
- Markers
- "The Pond" activity sheet
- Magnifying glasses

Activities / Procedures:

1. Share the book Life in the Pond.
2. The children will take a nature walk to the reflecting pond. The teacher will use a strainer, dip all the way to the bottom of the pond. Drain the water and see what is left. Spread out into plastic containers. Use magnifying glasses to examine what was found.
3. The children will make a list of pond animals seen. Add names of other animals seen in the book or which live in the pond.
4. The children will make a My Little Pond book. Cut out the animal pictures. Identify each animal, gluing each in the correct space. Count and write the number of animals on each page.

Evaluation / Assessment:

- Teacher observation
- Completed booklet
- Checklist

Extension / Integration Ideas:

- Book: Have You Seen My Duckling?
- Children can write a group story about the day at the pond.
- Make a number graph of each pond animal.
- Provide a variety of art supplies- make pond creatures.

Source: The Mailbox - Kindergarten Apr/May '97

Subject / Topic of Study: Living Classroom

Grade Level: Preschool / Pre-K / Kindergarten

Time Considerations: 30 minutes

Purpose / Objectives:

LA.K.9 Communicates effectively when using descriptive language, relating experiences and retelling stories.

LA.K.12 Recognizes own name in print.

LA.K.35 Uses left-to-right pattern of writing.

LA.K.37 Copies simple shapes, designs, numerals and letters.

LA.K.3 Follows one and two part oral directions.

LA.K.33 Uses examples from literature to create individual and group stories.

Additional Special Needs Objectives:

Increases mean length of utterances.

Appropriately verbalizes pragmatic functions to gain attention, request assistance or request an object.

Materials / Resources Needed:

- Construction paper
- Crayons
- Drawing paper
- Plastic book binder

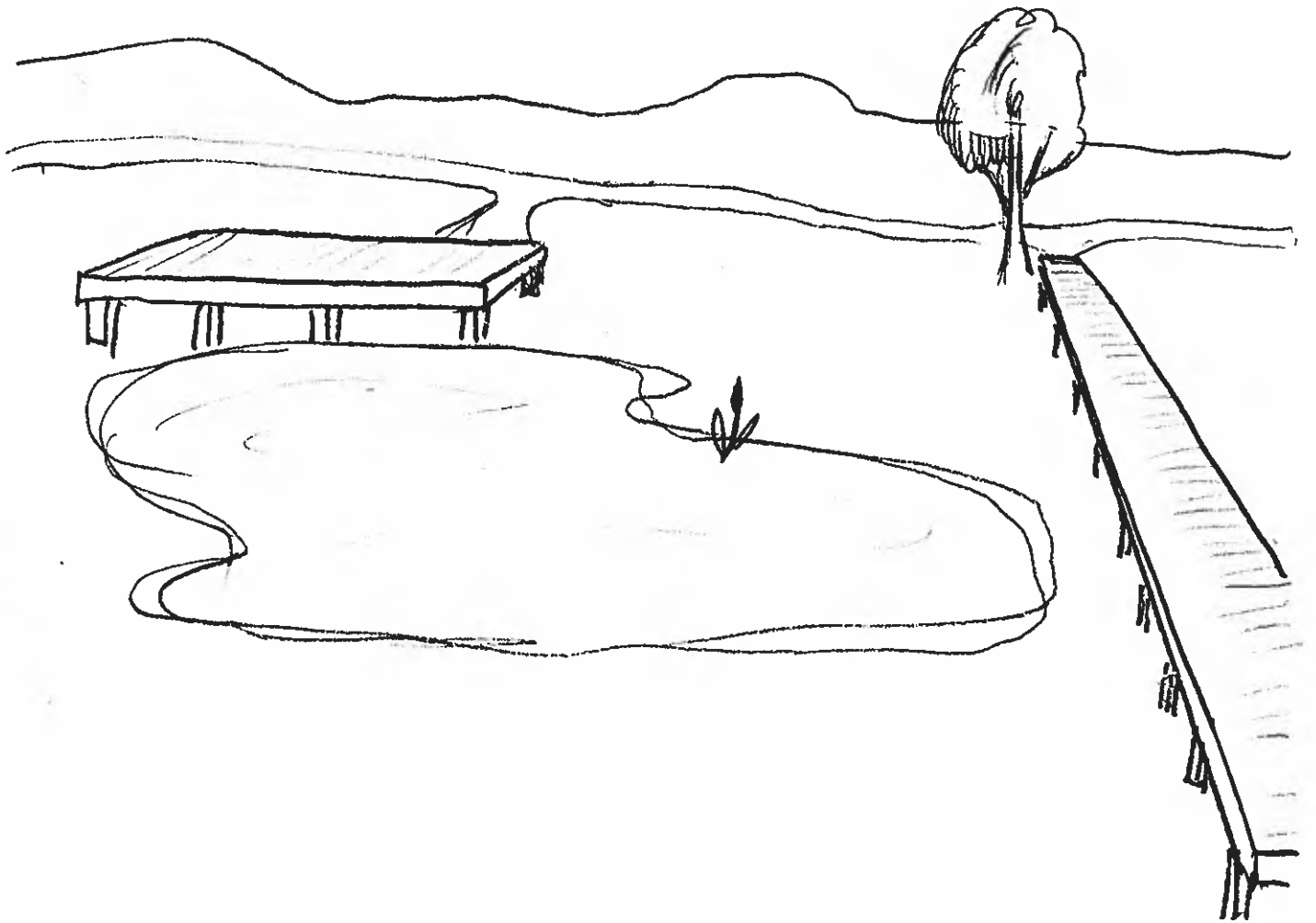
Activities / Procedures:

1. The students will take a nature walk through the Living Classroom. As the students are walking the teacher will ask each student what he/she sees. The teacher will write each response, not allowing duplications.
2. The students will create a class book, and decide on a title.
3. Each student will illustrate and write the sentence for his/her page.
4. Use format such as Brown Bear, Brown Bear What Do You See?
Use student's name _____, _____ what do you see? I see _____.

Evaluation / Assessment:

- Living Classroom Book developed by students.

Extension / Integration Ideas: •The children could make individual books.



Subject / Topic of Study: Science / Math / The Five Senses

Grade Level: Pre-K / Kindergarten

Time Consideration: Prep time - 10 minutes, classroom time 30 minutes

Purpose / Objectives:

To identify the five senses.

M.K.20 Continues simple patterns (color, shape, size, sound, texture, seasons, and events).

FAVA.K.10 Explores and names texture such as rough and smooth.

S.K.15 Uses senses to sort and classify colors, shapes, sizes, sounds, tastes, odors, textures, and temperatures. Categorizes objects according to color, shape, size, sound, taste, odor, texture, and temperature, using the five senses.

S.K.6 Sorts by shape, color, size, and texture. Differentiates matter based on contrasts in physical characteristics such as color, texture, size, or shape.

Materials / Resources Needed:

- Plastic baggies
- Clipboards
- Scavenger Hunt Worksheet
- 1 crayon / pencil per group

Activities / Procedures:

1. Split the class into small groups with an adult volunteer. Pass out clipboards, baggies (one per group), crayon, and Scavenger Hunt Worksheet.
2. Instruct students to try to find as many items on the worksheet as possible. Have the adult volunteers call out the object the group is looking for.
3. When someone in the group finds the object, the adult checks it off the worksheet. If the object is non living, it can be placed in the baggie for future discussions.

Evaluation / Assessment:

•Get a variety of objects and place them in a large bucket so that students cannot see them. Hold up each item and ask if it is rough/smooth, hard/soft, etc.





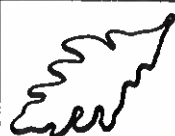
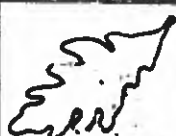
Extension / Integration Ideas:

- Make a large graph of all of the non living objects brought back in baggies. Decide which sense the object should go under.
- Make a mini-museum of your non living finds for students to observe.

Name _____

Graphing

Fall Leaves

8						
7						
6						
5						
4						
3						
2						
1						
	 green	 brown	 yellow	 orange	 red	 mixed

typist:
Please ~~write~~ type in a short line so students can write the objects they found

Scavenger Hunt

Group Members _____
_____ as possible

Find as many objects ~~by~~ using your senses!

Page 2

Sight

Touch

Taste

Smell

Sounds

- animal homes _____
Find something red _____
Find something green _____
" " blue " Sharp
" " yellow " uneven
" " black " bumpy
" " brown " _____
Look for the biggest object _____
" " " smallest " _____
Find 3 pinecones and classify from big to small.
Find a root
Find a flower
Find water
Find something to use
Find something you've never seen before.

- Something rough
something soft
something slick
something hard
" Sharp
" uneven
" bumpy

- bird calls
wind blowing
leaves rustling
wood pecker pecking
listen to a loud
listen to your footstep so
stomp / hit the ground hard
stomp / hit the ground soft

Taste

Smell

- Find 3 things a deer will eat
Find 3 things a caterpillar will eat
Find something that will taste good
" " " " " bad

- Something that smells good
Something " " " bad
" " " " sweet
" " " " sour
find something decayed
smell new wood ^{new life}
smell wood that has been around for awhile

Subject / Topic of Study: Language Arts / Science / 5 Senses

Grade Level: K-5

Time Considerations: 1 hour

Purpose / Objectives:

1. To use the senses of sound, sight, and smell.
2. To become aware of what attracts butterflies.
3. To use observation skills and record observations
4. To write a description about observations

Materials / Resources Needed:

- Clipboard
- Pencil
- Paper

Activities / Procedures:

1. Ask students to listen for at least 3 sounds. Have students write these sounds on their paper on clipboard. Then have students share the sound(s) they heard. Continue the procedure with the senses of sight and smell.
2. Have each student choose a partner. Have students walk around the butterfly garden and record things in the garden they think will attract butterflies. Have students share their recorded answers.
3. Have students share the kinds of plants and insects they have seen in the garden. Have students choose one plant and one insect in the garden and fill out the observation chart.
4. Have students find something in the butterfly garden and write 5 descriptive sentences about it. Have one student at a time read his/her sentences and let the class try to guess what the student has described.

Evaluation / Assessment:

- Written and oral observations

Subject / Topic of Study: Math - Measurement - Length

Grade Level: Pre-K / Kindergarten

Time Consideration: 30 minutes

Purpose / Objectives:

M.K.12 To compare and describe lengths (longer than, longest, shorter than, shortest, and same length as).

Materials / Resources Needed:

- 1 bag per child to hold nonliving objects

Activities / Procedures:

1. Take a walk on the nature trail in the Living Classroom while enjoying the sounds, sights, and atmosphere.
2. While walking, allow students to select up to 5 nonliving "treasures" they would like to place in their bags.
3. At the end of a set time, split class up in to small groups.
4. Have students arrange their "treasures" form long to short. Place the "same length as" objects side by side.
5. Form a large group again and visit each small group "treasure" arrangement. Ask such questions as: "Is _____ shorter or longer than _____ ?" or "How many objects in this group are the same size?".
6. Have each group take their "treasures" and place them back out on the nature trail.

Evaluation / Assessment:

- Teacher calls out objects visible from where the children are and asks such questions as "Is this _____ bigger/smaller than _____?". Students respond by opening their arms wide to represent bigger and putting their hands together to represent small.

Extension / Integration Ideas:

- Allow each group to keep their "treasures" and use unifix cubes to measure each object.

Subject / Topic of Study: Science - Animal Homes

Grade Level: Preschool / Pre-K

Time Consideration: 1 hour including walk to Living Classroom

Purpose / Objectives:

S.K.13 Recognizes factors leading to the survival of living things. Describes the conditions affecting survival of species, including changes in climate, availability of shelter, food, air, water, and human encroachment.

Materials / Resources Needed:

- Book: The Mitten by Jan Brett
- Strawberry baskets (1 per child or 1 per small group)
- Soft materials such as cotton, tissue, yarn, string, dryer lint, small pieces of cotton cloth)

Activities / Procedures:

1. Talk about how everybody needs a home for shelter.
2. Read The Mitten, being sure to point out where each animal really should live.
3. Make a birds material basket by filling the strawberry baskets with soft, flexible materials that birds would like to use in their nest.
4. Take the baskets to the Living Classroom and hang them from a tree. Birds can get the materials to build their nests. Be sure to look for evidence of real animal homes.

Evaluation / Assessment:

- Teacher observation

Extension / Integration Ideas:

- Make real bird nests. Mix dirt and water together until the mud has the consistency of mashed potatoes. Add to the mud any items that birds might really use when they build a nest such as twigs, leaves, hair, pine needles, moss, yarn, grass, or string. Place the completed nest in the fork of a tree so that birds can use it.
- Hang pine cones with nest materials woven in. Attach a string to the pine cone stem so that it can be hung from a tree. Lightly tuck nest materials in the pine cone such as those items mentioned above.

Subject / Topic of Study: Animal Homes

Grade Level: Pre-K and Kindergarten

Time Considerations: 30 minutes for outdoor activity
30 minutes for indoor activity

Purpose / Objectives:

SK.12 Recognizes basic needs of most living things.

SK.13 Recognizes factors leading to the survival of living things.

LA K.9 Communicates effectively when using descriptive language, relating experiences and retelling stories.

LA K.2 Listens to a variety of literary forms, including stories and poems.

Materials / Resources Needed:

- Living Classroom
- Tools for digging
- The World Beneath Your Feet by Judith E. Rinard
- Clipboards
- Paper
- Pencils

Activities / Procedures:

1. Share The World Beneath Your Feet as an introduction to the activity.
2. Take the children for a walk to the L.C. Provide clipboards, 5 plain sheets of paper, pencil, and digging tools.
3. The children will observe animals living on the ground, above the ground, and underground. The children will draw pictures of each animal and it's home.
4. The children will dig in a specified area in small groups.
5. Come back to the classroom. The teacher will write the names or the children will write the names of each animal observed
6. If no animals are observed, draw pictures of animals that might live on, above, and under the ground.

Evaluation / Assessment:

- Completed drawings

Extension / Integration Ideas:

- As a large group, make a graph on chart tablet, listing animals on the ground, above the ground and underground
- Read aloud Under the Ground by Eugene Booth
- Use magazine pictures of animals, sort into different animal homes
- Animal Homes- A First Look at Animals by Diane James and Sara Lynn. Scholastic
- A Home in a Tree by JoAnne Nelson (big book)

Subject / Topic of Study: Language Arts / Math - Bird Nests

Grade Level: Preschool / Pre-K

Time Consideration: 30 minutes story time / dramatic play
30 minutes in the Living Classroom

Purpose / Objectives:

L.A.K.2 Listen and respond to a variety of literary from.

L.A.K.8 Increase vocabulary to reflect a growing range of interests and knowledge.

FATA.K.1 Use simple objects and available materials as props, scenery, and costumes for dramatic play.

M.K.16 Counts the number of elements and writes the corresponding numeral 0-10.

Materials / Resources Needed:

- Dress up clothes
- Straw
- Drinking straws
- The Best Nest by Dr. Suss
- Small pool
- Yarn
- Fanny packs or plastic bag

Activities / Procedures:

1. In the classroom, show and discuss a bird nest with the students. Read The Best Nest and ask questions about how the birds built their nest and why they didn't like the other homes.
2. Using the straw, small pool, yarn, drinking straws, etc. have the students construct a nest.
3. Have the students act out the birds from the book and their activities of finding the perfect home. Allow the children to dress up with dress up clothes like the birds in the story. Discuss that birds don't really wear clothes. Guide the students to find different areas in the room to try out as possible homes.
4. Take the class to the Living Classroom and have each student put on a fanny pack or carry a plastic bag. Have the class break up in to 2 - 3 teams.
5. As each team locates a bird nest in the trees they should pick up a small twig and put it in their bag.
5. When the class returns to the room they can count the twigs to find out how many nests each team saw.

Evaluation / Assessment:

- Count the twigs that indicate the number of nests located.
- Students will be required to discuss and answer questions after the story.
- Students will be required to verbalize during the dramatic play to describe their role play and request materials.
- Each student will be required to role play the story.

Extension / Integration Ideas:

- The class can go purchase a blue bird house with a plexiglass side during community based instruction. They can then install it in the Living Classroom. During the Spring, students can put out yarn or other materials and watch to see if it is used by a blue bird to construct a nest. The students can observe the bluebirds coming and going, feed them, and observe their eggs.

Subject / Topic of Study: Science - Living and Nonliving Things

Grade Level: Kindergarten

Time Consideration: 30 minute walk and observation
30 minutes classroom

Purpose / Objectives:

- S.K.11 The student will describe differences between living and nonliving things.
Sort examples of objects into living and nonliving categories.
- S.K.1 Asks questions, makes and keeps simple records of observations, sorts objects, communicates with others, and makes predictions and uses estimation and measurement.

Materials / Resources Needed:

- Living Classroom nature trail
- Chart tablet
- White drawing paper
- Pencil
- Crayons

Activities / Procedures:

1. Take students on a walk through the nature trail in the Living Classroom. The students will look for objects that are living or nonliving.
2. In the classroom, the students will brainstorm and then make a list of all of the living things seen and a list of all the nonliving things seen.
3. The students will fold their paper in half and draw two living and two nonliving things.

Evaluation / Assessment:

- Discuss how we can tell if an object is living or nonliving

Extension / Integration Ideas:

- Take clipboards and paper along on the nature walk and allow students to draw living and nonliving objects that they see.
- Collect objects and sort them into living and nonliving.

Subject / Topic of Study: Bird nests

Grade Level: Preschool / Pre-K /Kindergarten

Time Considerations: 30 minutes for outdoor activity
30 minutes for indoor activity
30 minutes for cooking activity

Purpose / Objectives:

S.K. 12 Recognizes basic needs of most living things.

S.K. 13 Recognizes factors leading to the survival of living things.

LA K. 2 Listens to a variety of literary forms.

LA.K.3 Follows one and two part oral directions.

FAVA.K.1 Creates art with different subjects and themes and from personal experiences.

Special Needs Objectives:

Increases mean length of utterances.

Appropriately verbalizes pragmatic functions to gain attention and request assistance.

Materials / Resources Needed:

- It's Nesting Time by Roma Gans
- Bird Nests by Eileen Curran (big book)
- Paper sack
- Living Classroom
- Bird nests
- Rice Krispies
- Green colored coconut
- Jelly beans

Activities / Procedures:

1. Share the books It's Nesting Time and Bird Nests with the students as an introduction to the activity.
2. Bring in different bird nests for the students to examine.
3. The students will identify objects used to make the bird nests. The teacher will make a list on chart tablet.

Subject / Topic of Study: Science - Rocks

Grade Level: Kindergarten

Time Consideration: 30 minute nature walk
30 minutes in classroom

Purpose / Objectives:

S.K.18 Sort rocks and soils by color, size, and texture.

L.A.K.3 Listens to and follows one and two part oral directions.

L.A.K.8 Increases vocabulary to reflect a growing range of interests and knowledge.

S.K. 1 Asks questions, makes and keeps simple records of observations, sorts objects, communicates with others and makes predictions and uses estimation and measurement.

S.K.3 Identifies and practices accepted safety procedures in manipulating science materials and equipment.

Special Needs Objectives: Increase mean length of utterances.

Materials / Resources Needed:

- Paper sack

Activities / Procedures:

1. The students will take a nature walk through the Living Classroom and collect different kinds of rocks.
2. In the classroom, the students will describe the texture of their rocks as rough/smooth or shiny/dull, the size of their rocks as large/small or heavy/light, and by different colors.
3. The students will sort their rocks individually and in a large group.

Evaluation / Assessment:

- Teacher observation

Extension / Integration Ideas:

- The students will choose a favorite rock to decorate for a paper weight.
- The students may weigh the rocks to determine the heaviest or lightest rock.
- Read the book Sylvester and the Magic Pebble by William Steig

Subject / Topic of Study: Science / Microscopes

Grade Level: Kindergarten

Time Consideration: 30 minutes in the Living Classroom
30 minutes in the classroom

Purpose / Objectives:

- To understand what a microscope does.
- To look at pond water and pond scum under the microscope.

S.K.1 Asks questions, makes and keeps simple records of observations, sorts objects, communicates with others, and makes predictions and uses estimation and measurement.

Materials / Resources Needed:

- Microscope slides
- Big screen microscope
- Small plastic containers

Activities / Procedures:

1. Take students to the Living Classroom pond and have them get samples of pond water and scum and collect them in small plastic containers.
2. In the classroom, the teacher prepares slides using the student's pond samples.
3. Students view slides - Adults supervise students using the microscope.

Evaluation / Assessment:

- Students will be able to discuss what a microscope does.

Extension / Integration Ideas:

- Show the students the prepared slides that came with the big screen microscope such as the snake scale and ostrich feather.

4. Take the students to the Living Classroom. Look for bird nests. The students will collect items they can use to make a bird nest.
5. In the classroom, the students will use the found items to build their own nest. Add other classroom items such as colored yarn, unusual objects, which will be easily noticed if the bird uses it for it's own nest.
6. The children will take the nest back to the Living Classroom and place it somewhere special.
7. Observe once a week to see if the nests have been used.
8. Make edible bird nests with Rice Krispies, green colored coconut, and jelly beans. Children will form Rice Krispies into nest shape, add coconut, jelly beans, and enjoy.

Evaluation / Assessment:

- Completed bird nests.

Extension / Integration Ideas:

- Share the book Have You Seen Birds? by Joanne Oppenheim.
- Use other recyclable materials to make other kinds of bird houses (examples provided).

Subject / Topic of Study: Math

Grade Level: Pre-K / Preschool

Time Consideration: 30 minutes

Purpose / Objectives:

M.K.16 Counts the number of elements in a set and writes the corresponding numeral (0-10).

Materials / Resources Needed:

- Ladybug Worksheets A and B
- Scissors
- Glue
- Black crayon
- Book: The Grouchy Ladybug by Eric Carle

Activities / Procedures:

1. Read students The Grouchy Ladybug.
2. Place the numbers you choose to use on the body of the ladybug and copy.
3. Students cut out the body and wings out and glue them together.
4. Students draw the appropriate number of dots on the wing as indicated by the number on the body.
5. Students decorate eyes and antennae.

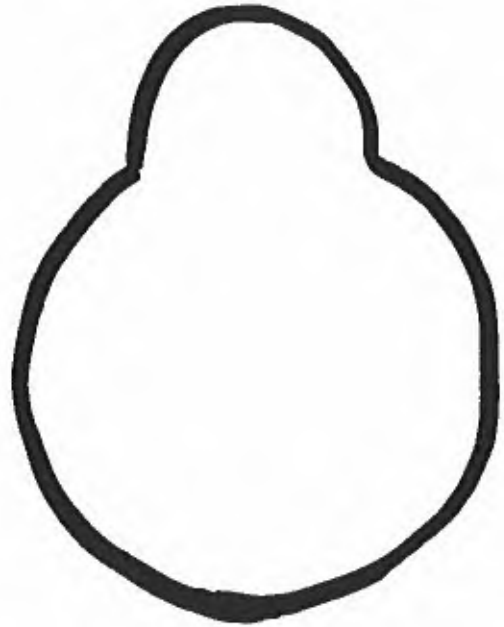
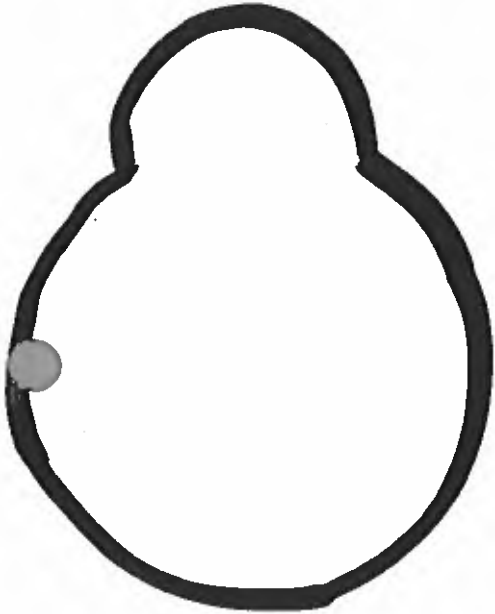
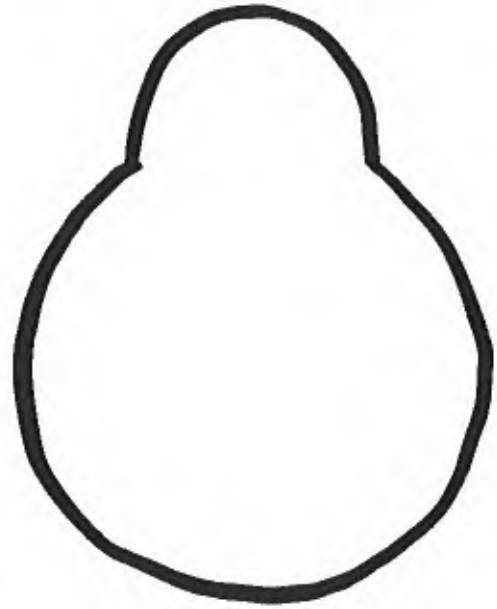
Evaluation / Assessment:

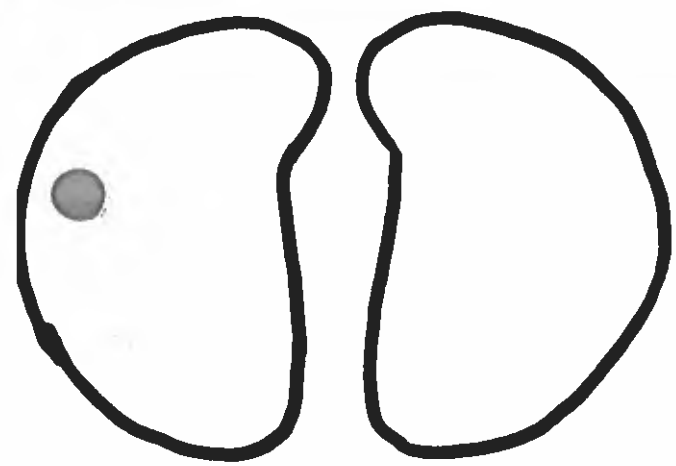
- Teacher observation of finished product

Extension / Integration Ideas:

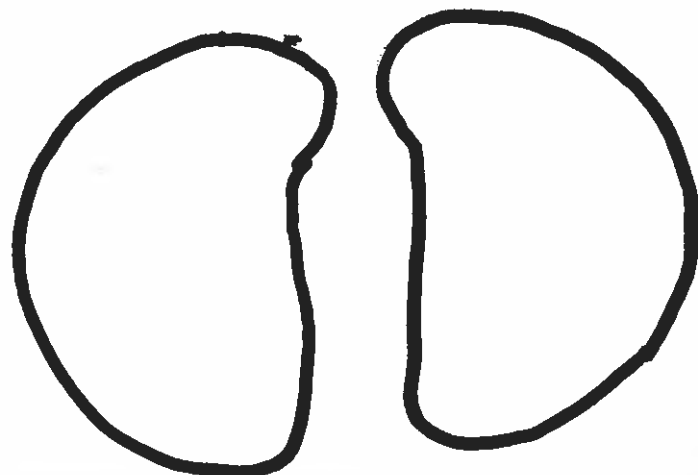
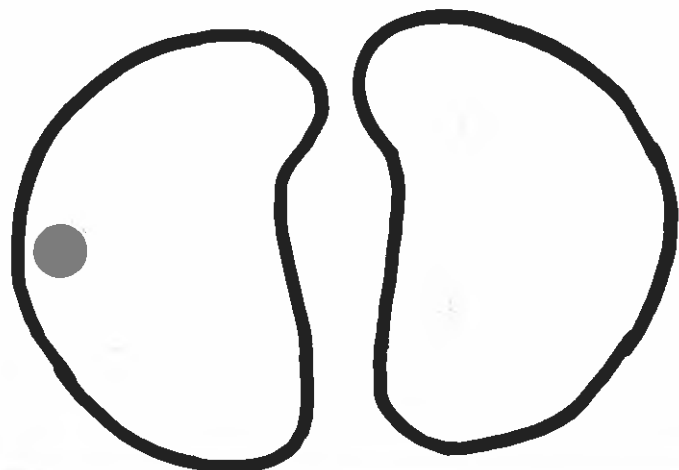
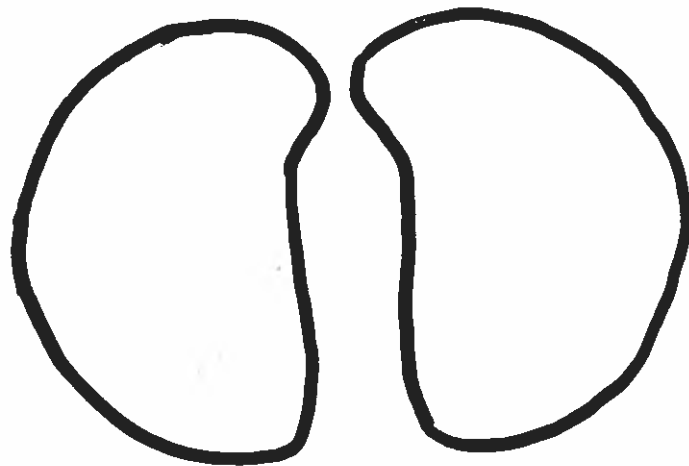
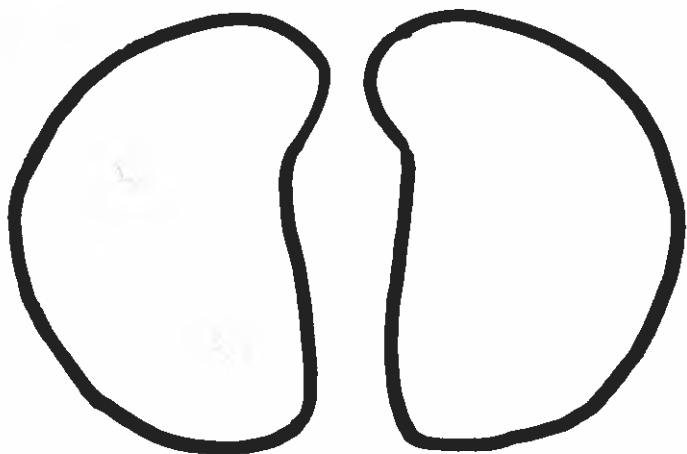
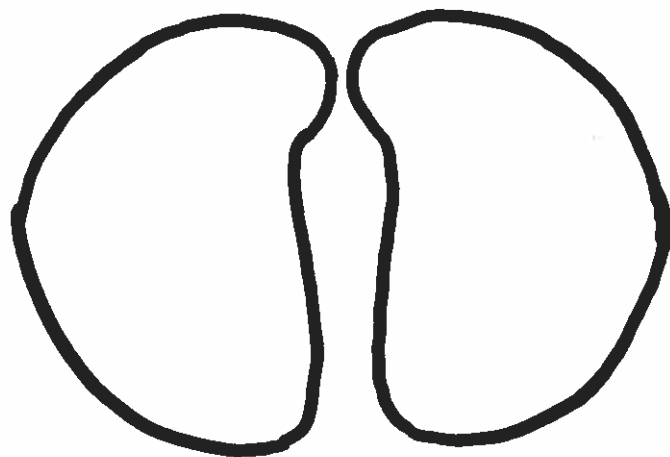
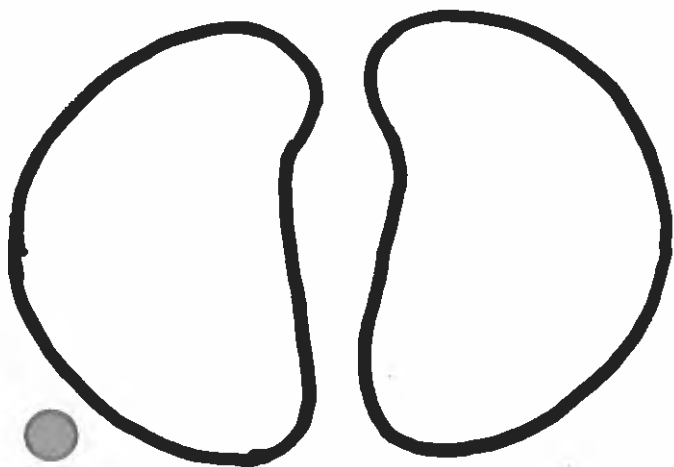
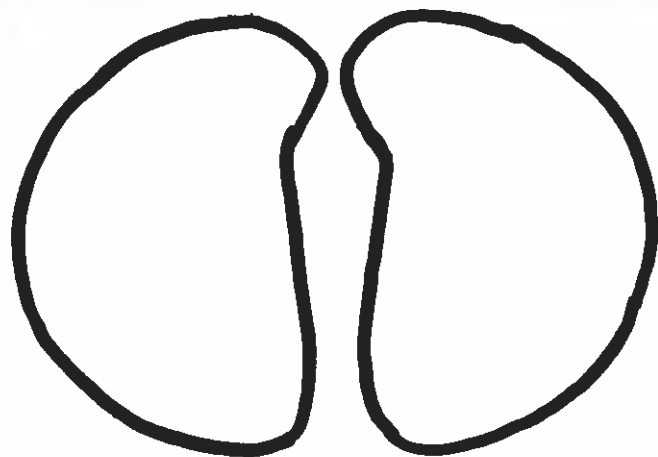
- Give each student a sentence strip and instruct them on how to sequence the ladybugs form numerals 0-10. Staple these together for ladybug hats.
- Make Ladybug cookies using vanilla wafers, mini chocolate chips, red, yellow, or orange tinted frosting, and black licorice.

Black





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Subject / Topic of Study: Soil

Grade Level: Pre-K / Kindergarten

Time Considerations: 30 minutes for nature walk
30 minutes for mud creation
15 minutes for snack time

Purpose / Objectives:

LA K.2 Listen to a variety of literary forms, including stories and poems.

LA.K.3 Follows one and two part oral directions.

LA.K.8 Increase vocabulary to reflect a growing range of interests and knowledge.

S.K.3 Identifies and practices accepted safety procedures in manipulating science materials and equipment.

S.K.17 Recognizes and names common earth materials such as soil, rocks, water, and air.

FAVA K.1 Creates art works - drawings, painting, pottery, sculptures, prints, fiber arts, and mixed media.

Special Needs Objectives:

Increases mean length of utterances.

Tolerates tactile stimulating materials.

Materials / Resources Needed:

- Living Classroom
- Tools for digging
- Chocolate pudding
- Gummy worms
- Spoons
- Chart tablet
- Talk about Soil by Franklin Watts
- Aluminum pie tins
- Water
- Chocolate cookies
- Cups
- Large Ziploc bags
- Marker

Activities / Procedures:

1. Share the book Soil. The students will take a nature walk to the Living Classroom. The students will dig in the dirt. Examine the dirt for living things. Fill their bag with dirt. Describe the different types of soil found.
2. The students will be given a rectangle aluminum pan and a cup of water. The students will make mud. The students will write their name in the mud. The students will make a mud creation of their choice. Let dry and take home.

3. The students will eat "dirt cake." Give each child a cup of chocolate pudding, crushed chocolate cookies, gummy worms. Mix together. Eat and enjoy.

Evaluation / Assessment:

- Teacher observation

Extension / Integration Ideas:

- Make your own soil. Rub rocks together into your container. Add piles of dead leaves and insects. Mix together.
- Splatter paint a picture of a pig, elephant, discuss.

Sources:

Wormania Video

The Art of Backyard Composting Video

Subject / Topic of Study: Science / Seeds

Grade Level: Pre-K and Kindergarten

Time Considerations: 30 minutes for outdoor activity
30 minutes for indoor activity
15 minutes for planting seeds

Purpose / Objectives:

- L.A.K.2 Listens to a variety of literary forms, including stories and poems.
- S.K.17 Recognizes and names common earth materials, such as soils, rocks, water, and air.
- H.K.16 Recognizes agricultural origins of common foods.
- L.A.K.3 Follows one and two part oral directions.
- L.A.K.8 Increases vocabulary to reflect growing range of interests and knowledge.

Materials / Resources Needed:

- | | |
|------------------------------|----------|
| •The Tiny Seed by Eric Carle | •Seeds |
| •Ziploc bags | •Soil |
| •Living Classroom | •Sponges |

Activities / Procedures:

Day 1

1. Share the book The Tiny Seed.
2. Take students to the Living Classroom. Have students look for seeds (pine cones, apples, acorns, etc.), and place them in their plastic bag.
3. The students will describe their seeds. As a class, sort the seeds that are the same. Name each group of seeds.

Day 2

1. The students will bring seeds from home. Sort the seeds into 2 groups: "Seeds we eat" (e.g. bean sprouts, corn, beans) and "Seeds we don't eat" (e.g. cotton, acorn, watermelon).
2. Students will plant the different seeds into soil, sponges, or ziploc bags and watch them grow.

Evaluation / Assessment:

- Teacher observation
- student participation
- Seed growth

Extension / Integration Ideas:

- Share the book The Reason for a Flower by Ruth Heller.
- The children can make a seed poster and write the name of each seed.

Subject / Topic of Study: Apples

Grade Level: Pre-K / Kindergarten

Time Considerations: 30 minutes outdoor activities
30 minutes indoor activities

Purpose / Objectives:

- H.K.16 Recognizes agricultural origins of common foods.
- H.K.14 Identifies various foods by name.
- LA.K.2 Listens to a variety of literary forms, including stories and poems.
- LA.K.3 Follows one and two part oral directions.
- M.K.21 Place objects in order according to size (based on capacity, weight, length or height).
- S.K.6 Sorts by shape, color, size, and texture. Differentiates matter based on contrasts in physical characteristics such as color, texture, size or shape.

Materials / Resources Needed:

- Apple orchard in Living Classroom
- The Apple Pie Tree by Zoe Hall
- Apples
- Apple pie ingredients

Activities / Procedures:

1. Share the story The Apple Pie Tree.
2. Discuss the stages of the apple tree during each season. Predict what the tree will look like.
3. The students will take a nature walk to the apple orchard. Talk about what is found on the tree.
4. The teacher will pick enough apples for each student to have one bite to sample.
5. The students will bring apples from home for the following activities:
 - Make patterns using size and color.
 - Put apples in different size baskets. Estimate which weighs more/less.
 - Put apples in order from smallest to largest.
 - Sort the apples by color.
 - Sort the apples by size.

6. In small or large group, cut an apple and estimate how many seeds are in the apple. Count the seeds. Cut another apple, predict whether this apple has as many seeds as the first one.
7. Make an apple pie. Eat and enjoy.

Evaluation / Assessment:

- Teacher observations

Extension / Integration Ideas:

- Apple printing.
- Make a number graph showing what is your favorite kind of pie - apple, pecan, peach, or pumpkin. Count and compare.

Subject / Topic of Study: Plants

Grade Level: K

Time Considerations: 45 minutes

Purpose / Objectives:

1. The student will identify the parts of a flower.
2. The student will observe the growth of a plant.

Materials / Resources Needed:

- Living Classroom
- Seeds
- Water
- Plant food

Activities / Procedures:

1. Students will plant flower seeds in a specified area.
2. Students will observe the growth of the flowers.
3. The students will identify the parts of a plant.
4. The students will take care of the flowers.

Evaluation / Assessment:

- The students will be evaluated by identifying the parts of a flower.
- The students will describe what flowers need to grow.

Subject / Topic of Study: Language Arts / Health / Math - Food

Grade Level: Pre-K / Kindergarten

Time Considerations: 30 minutes story, 30 minutes activity

Purpose / Objectives:

L.A.K.2 Listens to a variety of literary forms including stories and poems.

H.K.14 Identifies various foods by name.

H.K.16 Recognizes agricultural origins of common foods.

M.K.18 Use ordinal numbers to indicate first through fifth.

Materials / Resources Needed:

- Book: Cloudy With a Chance of Meatballs by Judi Barrett
- Chart tablet •Markers •Activity Sheet
- Spaghetti, tomato sauce, meatballs, hot plate, and boiler

Activities / Procedures:

1. Read the book, Cloudy With a Chance of Meatballs.
2. Ask the students if we get our food from the sky. Make a chart titled "Where do we get our food?". Have students name the different foods that fell from the sky.
3. Use the activity "Where does food come from?". Students color, cut, glue, and put the pictures in order.
4. Make a chart "Which foods do we get from cows, pigs, chickens?".
5. Make a chart of what foods grow in the ground.
6. Make spaghetti and meatballs. Orally discuss the steps involved in making the meal.

Evaluation / Assessment:

- Teacher observation

Extension / Integration Ideas:

- Read the book Farmers by Dee Ready.
- Read and discuss The Food We Eat by Bobbie Kalman.

after the word activity.

Subject / Topic of Study: Language Arts - Spiders

Grade Level: Preschool / Pre-K / Kindergarten

Time Considerations: 45 minutes for classroom activity
30 minute walk daily for a week - Living Classroom

Purpose / Objectives:

LA.K.2 Listens to a variety of literary forms, including stories and poems.

LA.K.3 Follows one and two part oral directions.

LA.K.8 Increases vocabulary to reflect a growing range of interests and knowledge.

Special Needs Objectives: Appropriately verbalize to express various pragmatic functions such as to gain attention, request an object or turn, request assistance, direct activities of a peer, increase attending skills.

Materials / Resources Needed:

- Book: The Very Busy Spider by Eric Carle
- Living Classroom
- White glue
- Black construction paper
- Felt
- Brown and gray die cut spiders

Activities / Procedures:

1. Read The Very Busy Spider. Let the students feel the raised web in the book. Ask students questions about the story.
2. Take students to the Living Classroom and have them look for a spider in or near a web. Look at the web from different angles to see if there is any rain on the web, broken parts of the web, etc. If spiders are in the web, count how many legs they have. If incomplete webs are found, visit the Living Classroom at various times over the next week to see if any changes in the web are noticed.
3. Return to the classroom and go to the Art center. Give each student a piece of black construction paper. Show them how to use a bottle of white glue to draw a spider web.
4. To increase language and social interaction among the students let 1 or 2 students be the teacher in a group or groups. The other students will call the "teacher" appropriately by name and ask for the glue.

5. After the students have all drawn the web they can ask the "teachers" for a felt spider, specifying the color they would like. They can then put the spider in their web. When the web is completely dry, the children can feel the web.

Evaluation / Assessment:

- Teacher observation
- Data collection

Extension / Integration Ideas:

- Make marshmallow spiders for snack time. Each child will need large marshmallows, M&M's, 1/2 cup chocolate chips, string licorice. Poke 8 pieces of 2 inch string licorice into each marshmallow for legs. Melt over low heat 1/2 cup chocolate chips, set spider on waxed paper and dribble a large spoonful of melted chocolate over the marshmallow. Add two M&M's for eyes. Cool and eat.

Source:

The Giant Encyclopedia of Theme Activities for Children 2 to 5. Gryphon House

Book Cooks; Literature Based Classroom Cooking K-3 by Cathy Hull

Subject / Topic of Study: Science / Rabbits

Grade Level: Preschool / Pre-K / K

Time Considerations: 1 hour and 15 minutes

Purpose / Objectives:

L.A.K.2 Listens to a variety of literary forms, including stories and poems.

S.K.4 Actively engages in the learning process via hands-on/ minds-on science activities, uses appropriate tools to collect and analyze data and solve problems.

S.K.3 Identifies and practices accepted safety procedures in manipulating science materials and equipment.

S.K.2 Uses books and other media to obtain information related to science concepts.

Special Needs Objectives:

Increases mean length of utterances.

Improves articulation of beginning consonant sounds.

Materials / Resources Needed:

- Tale of Peter Rabbit by Beatrix Potter
- Non-fiction rabbit books (e.g. Animal Trackers: In Fields and Meadows by Tessa Paul)
- Magnifying glasses
- Vegetables
- Vegetable seeds
- Hoe
- Rake
- Freckles the Rabbit by Jane Burton

Activities / Procedures:

1. Read a book about rabbits or The Tale of Peter Rabbit by Potter. Identify rabbit prints and discuss rabbit pellets.
2. Take a walk on the nature trail and try to find evidence of rabbit prints and droppings. Use magnifying glasses. Try to locate possible rabbit homes.
3. Walk over to the vegetable garden and either plant vegetables that Peter ate (lettuce, radishes, beans, parsley) or look over the garden of already planted vegetables. Weed out any weeds.

4. Have a vegetable tasting party out on at a S.U.N. Center. Taste vegetables: carrots, beans, lettuce, cucumbers, radishes. Discuss the importance of vegetables in keeping us healthy.

Evaluation / Assessment:

- Teacher observation

Extension / Integration Ideas:

- Look through magazines to find pictures of vegetables. Cut out and glue onto a vegetable collage.
- Plan a trip to a pet store to examine rabbits.
- Ask around and get a parent volunteer to come in and bring a rabbit.

Subject / Topic of Study: Science

Grade Level: Preschool / Pre-K

Time Consideration: 45 minutes

Purpose / Objectives:

S.K.4 Actively engages in the learning process via hands-on /minds-on science activities. Uses appropriate tools to collect and analyze data and solve problems.

S.K.1 Asks questions, makes and keeps simple records of observations, sorts objects, communicates with others, makes predictions, and uses estimation and measurement.

Materials / Resources Needed:

- Book: Nature Spy by S. Rotner and K. Kreisler
- Magnifying glasses
- Paper magnifying glasses die cut and laminated
- Small insect stickers

Activities / Procedures:

1. Prior to the lesson, go to the Teacher Resource Center and die cut magnifying glasses. Pop out the inner circle and laminate. Cut around the magnifying glasses leaving the inside untouched.
2. Read Nature Spy slowly to the students. Discuss how things look different up close.
3. Have students look at objects in the classroom and then look more closely with magnifying glasses.
4. Take students to the Butterfly Garden and have them use magnifying glasses to examine nature. Have them look closely at flowers, insects, grass, etc.
5. Return to the classroom and give students the paper magnifying glasses along with a variety of the small insect stickers that they can stick to the inside of the magnifying glasses.

Evaluation / Assessment:

- Teacher observation

Subject / Topic of Study: Caterpillars and Butterflies - Day 1 of 5

Grade Level: Preschool / Pre-K / Kindergarten

Time Considerations: 15 minutes Butterfly Garden, 20 minutes classroom

Purpose / Objectives:

LA.K.2 Listens to a variety of literary forms, including stories and poems.

LA.K.8 Increases vocabulary to reflect a growing range of interests and knowledge.

LA.K.27 Sequences pictures to tell a story.

LA.K.3 Follows one and two part oral directions.

M.K.20 Continues simple patterns.

Materials / Resources Needed:

- The Very Hungry Caterpillar by Eric Carle
- Green yarn
- Cut outs of apples, pears, plums, strawberries, oranges, and butterflies
- Caterpillar noodles
- Butterfly kit

Activities / Procedures:

1. Take students to the Butterfly Garden. Discuss and point out the butterfly house.
2. Read The Very Hungry Caterpillar. Ask students questions about the characters and events in the story. Point out the types of food the caterpillar ate. Review the fruits that he ate on each day of the week.
3. Lay out cut outs of the fruit as you get to them in the story. Give the students yarn, cut outs of fruit and butterflies, and caterpillar noodles. Show the students how to construct a necklace using the caterpillar sequence of fruit and butterflies with noodles in between each cut out on the necklace.
4. After each student has finished their necklace, have the students assist in assembling the class butterfly kit.
5. Discuss the cycles the caterpillar will go through to become a butterfly.

Evaluation / Assessment:

- Observation and teacher questions

Extension / Integration Ideas:

- Start at the beginning of the week, putting picture cut outs on the day of the week that corresponds with the day in the book. This can be continued throughout the month or until the day that the butterfly is ready to be released in the Butterfly Garden. You could also use pictures of pizza or other foods for weekend days.

Subject / Topic of Study: Caterpillars and Butterflies (Day 2 of 5)

Grade Level: Preschool / Kindergarten

Time Consideration: 30 minutes class activity, 15 minutes art activity

Purpose / Objectives:

LA.K.2 Listens to a variety of literary forms, including stories and poems.

LA.K.6 Sequences pictures to tell a story.

H.K.15 Selects nutritious foods that contribute to good health.

FAVA.K.3 Uses a variety of art materials and techniques to model, construct, and compose original artwork.

LA.K.6 Recites short poems, rhymes, songs, and stories with repeated patterns.

Materials / Resources Needed:

- The Very Hungry Caterpillar by Eric Carle
- Teacher made story time props
- Play food or magazine pictures of food
- Fruits - apples, pears, oranges, plums, strawberries
- Paint
- Art paper
- Paint pans

Activities / Procedures:

1. Read the story The Very Hungry Caterpillar. The teacher will pause and allow the students to complete the sentence "but he was still very hungry".
2. The students will act out the story using props.
3. Using play food or magazine pictures of food, the children will identify the fruits.
4. The children will make fruit prints using apples, pears, oranges, plums, and strawberries.

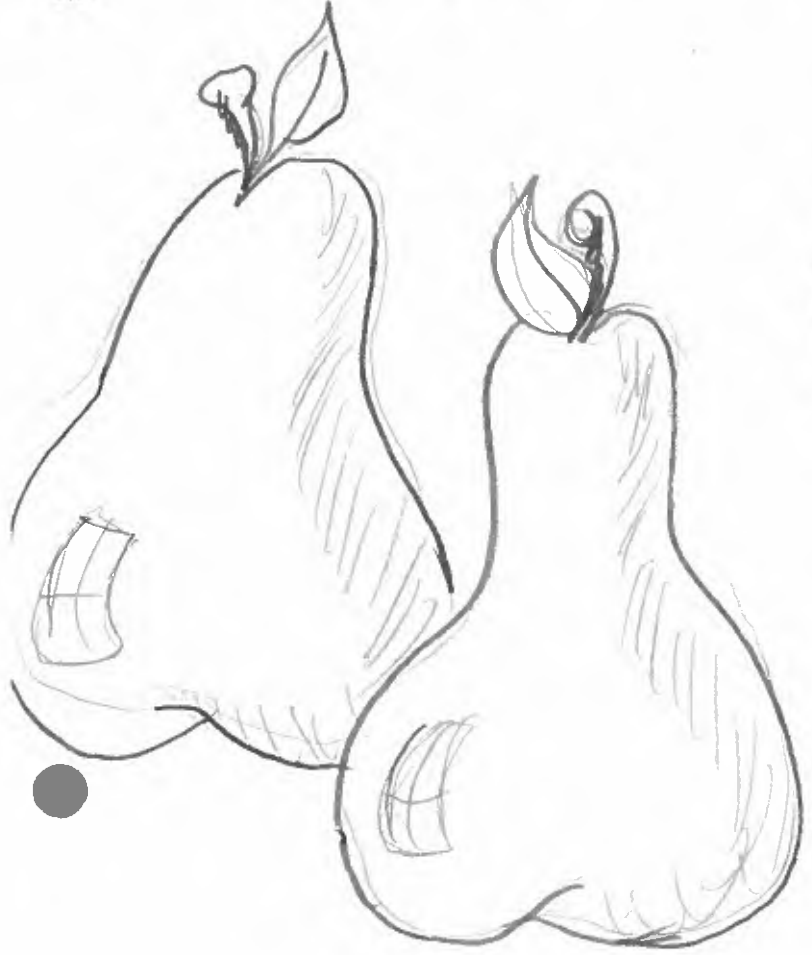
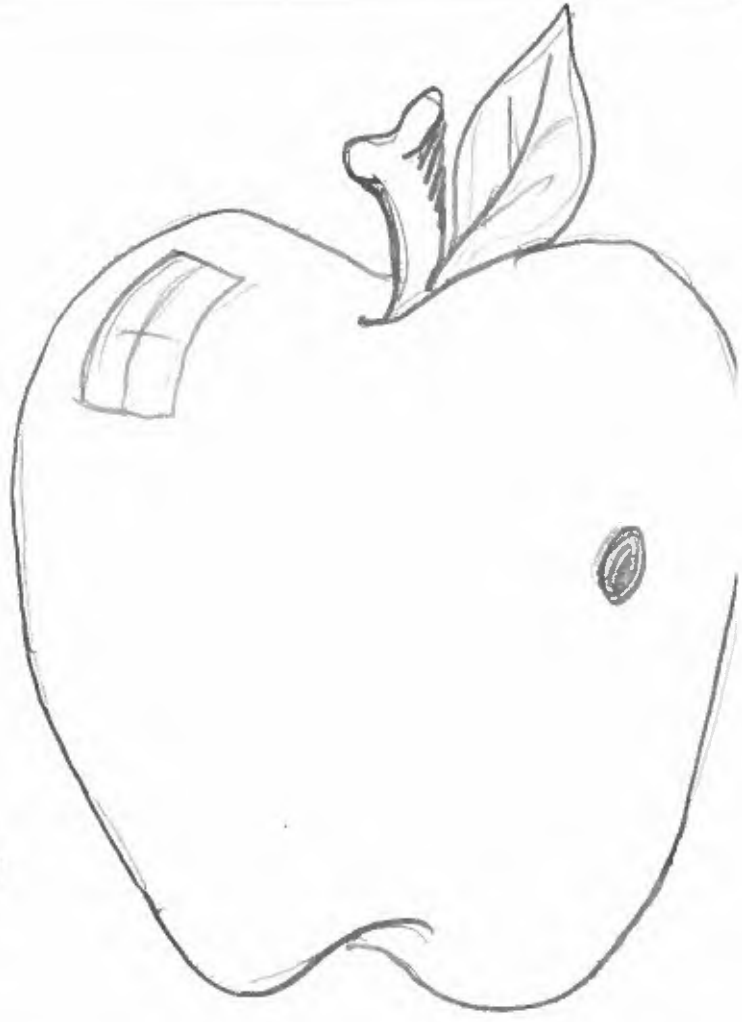
Evaluation / Assessment:

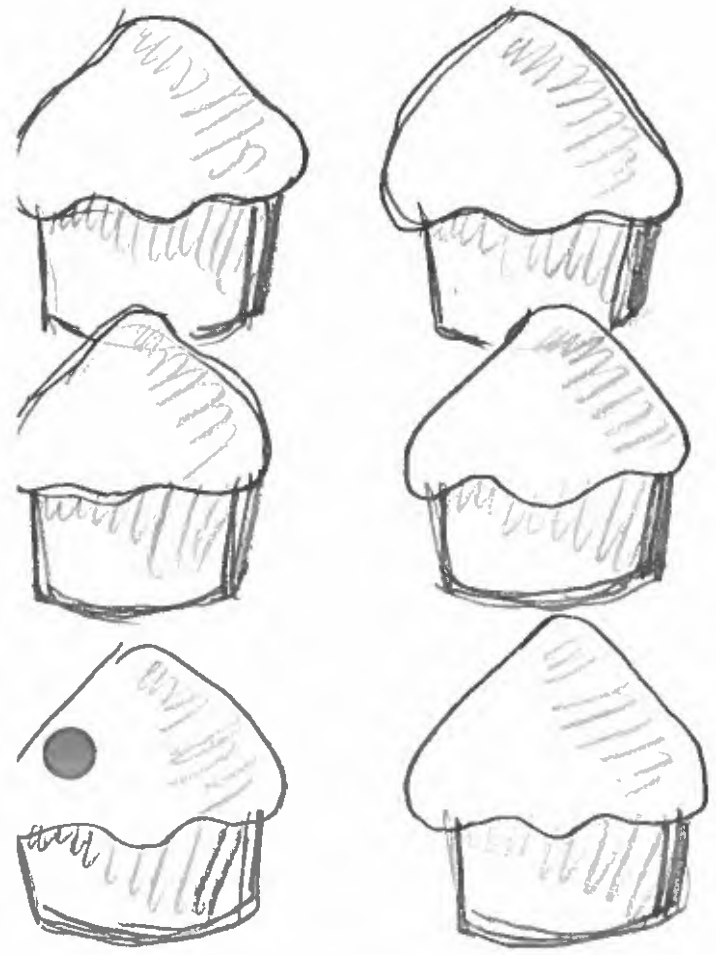
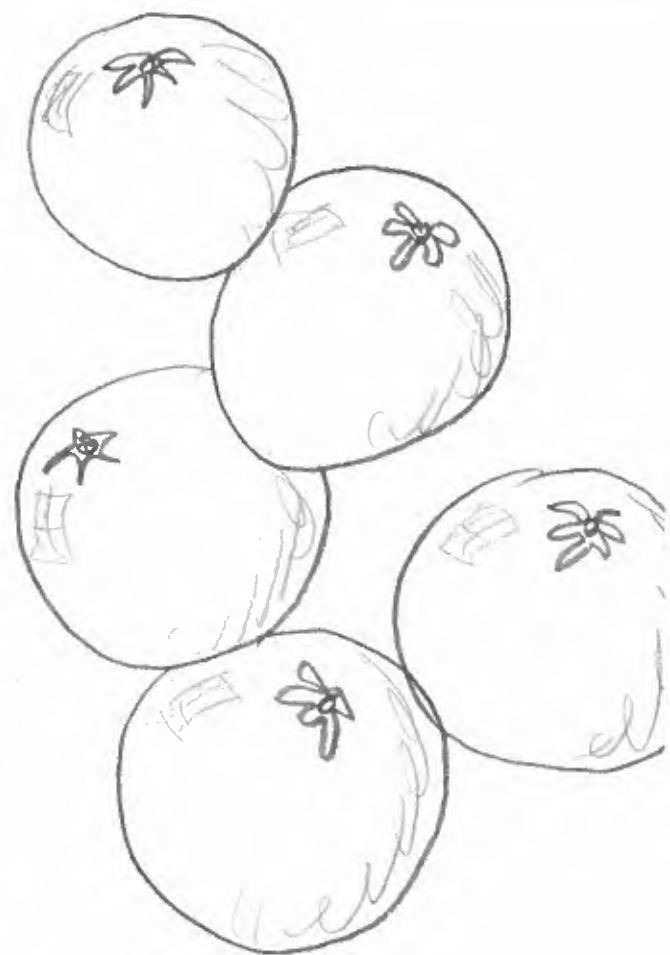
- Teacher observation and questions

Extension / Integration Ideas:

- Students could make a fruit stick to nibble through by using bite size pieces of different fruits.
- After eating the different fruits, make a chart describing each fruit.

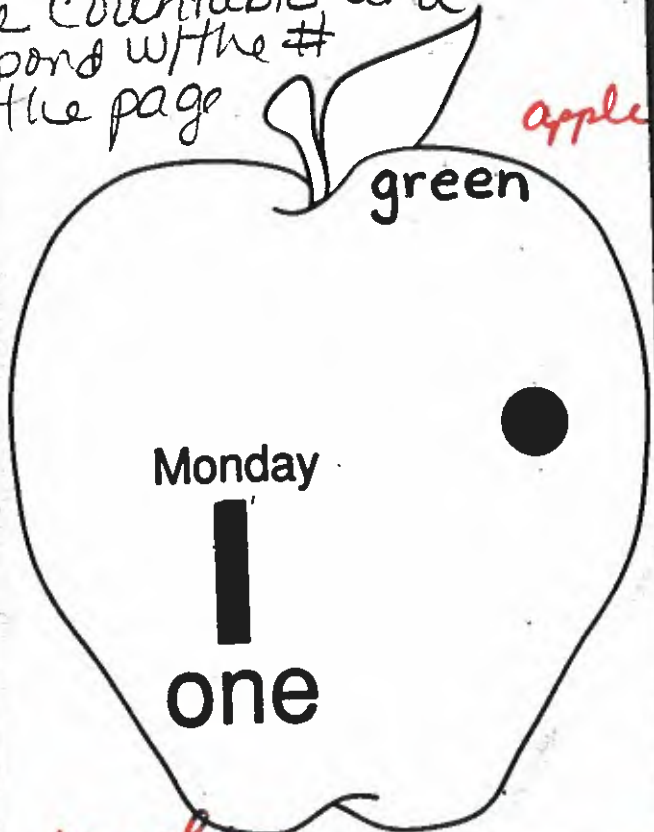
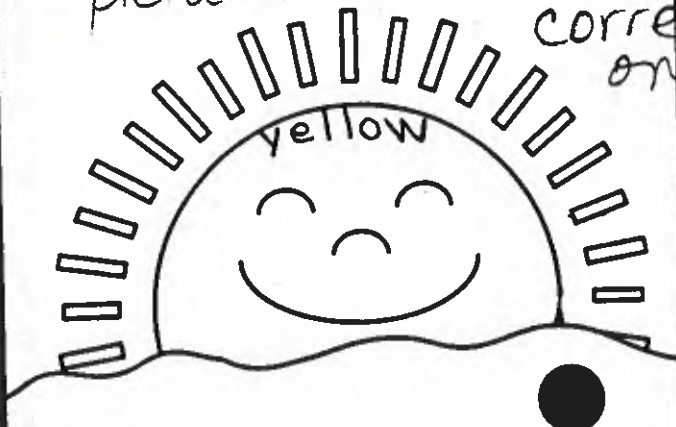
Count with
little picnic





adapt this with the each page having the same # of fruit

pictures that blue are countable and correspond with the # on the page



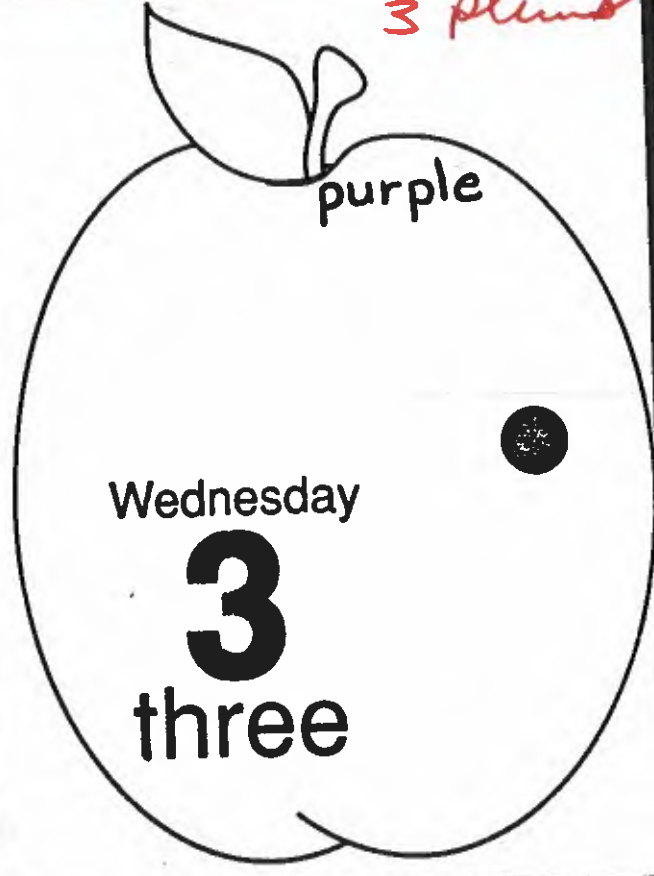
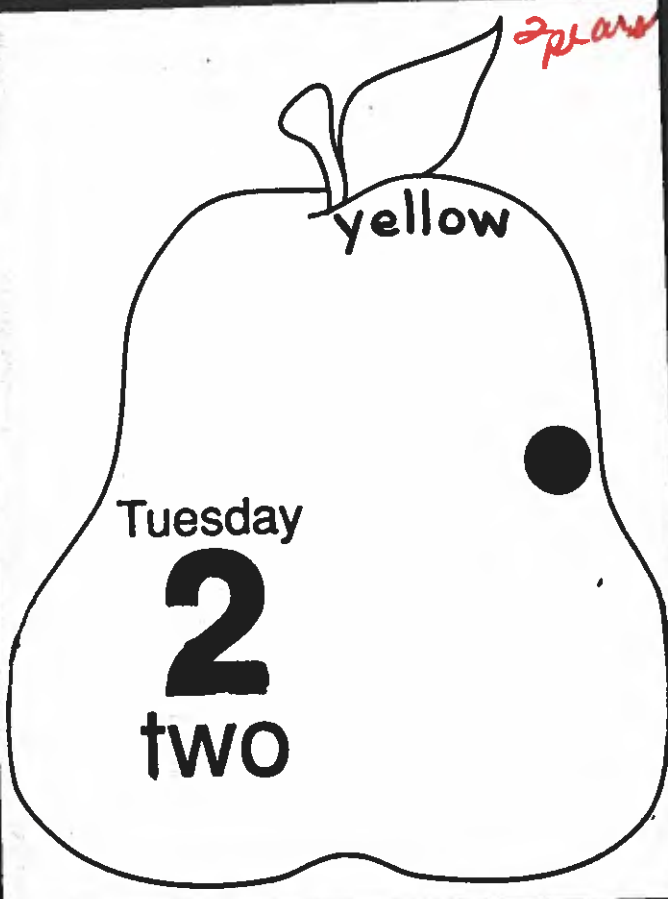
Count With Caterpillar

Monday

1
one

by _____

1 apple

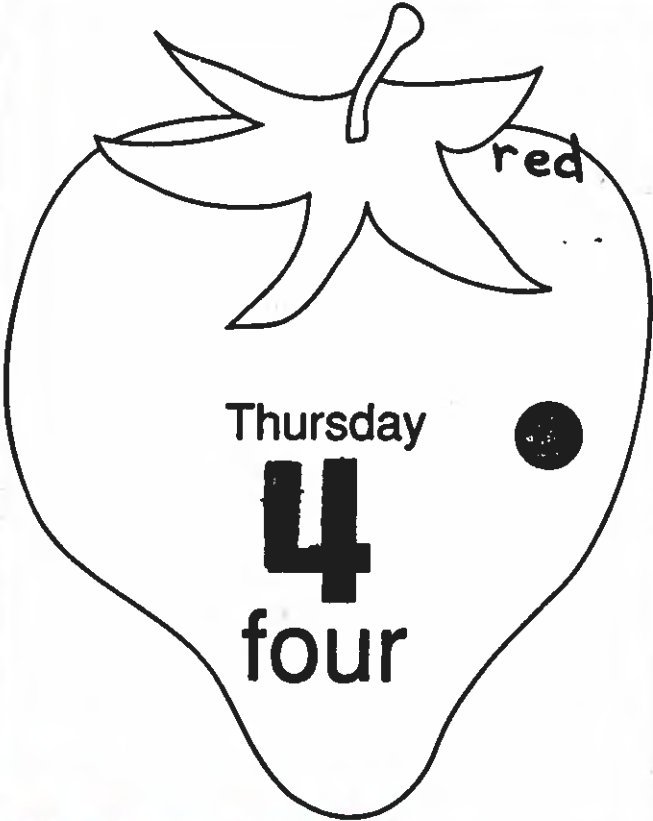


Tuesday

2
two

Wednesday

3
three




red

Thursday
4
four

4 Strawberries

A line drawing of a strawberry with four leaves. The word 'red' is written near the top right leaf. The number '4' is written in the center, with 'Thursday' above it and 'four' below it. A black dot is on the right side. Below the drawing, the text '4 Strawberries' is written in red cursive.




orange

Friday
5
five

5 Oranges

A line drawing of an orange with a stem and a small leaf. The word 'orange' is written near the top left. The number '5' is written in the center, with 'Friday' above it and 'five' below it. A black dot is on the right side. Below the drawing, the text '5 Oranges' is written in red cursive.



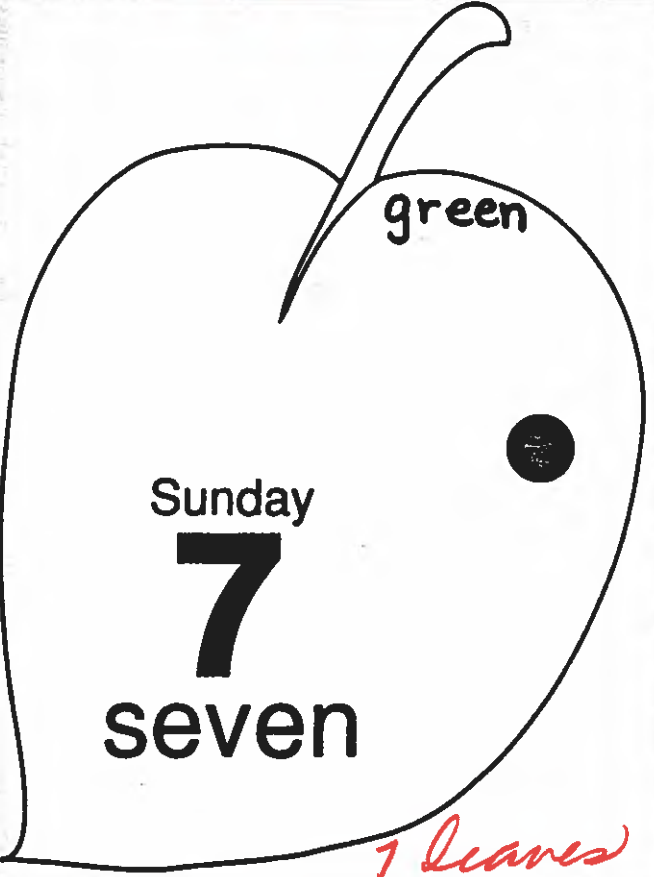
pink

Saturday
6
six

brown

Cupcakes

A line drawing of a cupcake with a pink frosting top and a brown paper liner. The word 'pink' is written above the frosting, and 'brown' is written on the liner. The number '6' is written in the center, with 'Saturday' above it and 'six' below it. A black dot is on the right side of the liner. Below the drawing, the text 'Cupcakes' is written in red cursive.



green

Sunday
7
seven

7 Leaves

A line drawing of an apple with a stem and a single leaf. The word 'green' is written near the top right. The number '7' is written in the center, with 'Sunday' above it and 'seven' below it. A black dot is on the right side. Below the drawing, the text '7 Leaves' is written in red cursive.

Subject / Topic of Study: Caterpillar and Butterfly (Day 5 of 5)

Grade Level: Preschool / Pre-K / Kindergarten

Time Consideration: 30 minutes

Purpose / Objectives:

L.A.K.3 Follows one and two part oral directions.

M.K.3 Recognizes one half as part of a whole.

M.K.4 Identifies basic geometric shapes.

Materials / Resources Needed:

- Bread
- Butter or margarine
- Celery sticks
- Electric skillet
- Pot holder
- Plastic knives
- Cheese slices
- Carrot sticks
- Snack master or toaster oven
- Spatula
- Paper plates
- Fruit

Activities / Procedures:

1. The children will make a toasted cheese butterfly sandwich. Let the students butter their bread slices and then put a cheese slice between the bread. Either put the sandwich in an electric skillet and toast on either side or put in a snack master or in a toaster oven and cook until cheese is melted.
2. Cut the sandwiches diagonally. Discuss the shapes, halves, and wholes.
3. Show the students how to place the sandwiches so they make wings.
4. Place a carrot stick between the wings for the body.
5. Place two small celery sticks at the top of the carrot stick for antennae.
6. You can then cut up fruit slices to take to the Butterfly Garden and put on the ground to attract butterflies.
7. Take mats to the Butterfly Garden and eat sandwiches while watching for butterflies.

Evaluation / Assessment:

- Teacher observation of finished sandwiches
- Student participation

Subject / Topic of Study: Science

Grade Level: Preschool / Pre-K

Time Consideration: 40 minutes

Purpose / Objectives:

S.K.1 Asks questions, communicates with others, and makes predictions of outcomes.

Materials / Resources Needed:

- Plastic Easter eggs
- Pictures of animals that begin as eggs (ostrich, hummingbird, rooster, fish, lobster, ladybug, spider, ant, eagle, turtle, snake, crocodile, shark, frog)
- Book: It Started Out as an Egg by Kimberlee Graves

Activities / Procedures:

1. Read It Started Out as an Egg and then reread again letting the students say the repetitive part.
2. Place a picture of an animal that started as an egg in a plastic egg. Put one picture in each egg.
3. Either hide the eggs in the Living Classroom in the appropriate place of where the animal in the egg would be found or place on a bulletin board.
4. Let the students predict what animal is inside the egg and then open them to let them check their predictions.
5. Talk about what the animal looked like right when it hatched from the egg.

Evaluation / Assessment:

- Teacher observation

Extension / Integration Ideas:

- Have each student find a picture of an animal that came from an egg. Poke the picture down in a balloon and blow it up with a pump. Mix flour and water together into a "gooey" mixture. Tear newspaper into strips and dip it into the flour mixture and cover the balloon. Let it dry and then paint the "egg" with color and specks representative of the animal inside. Be sure to provide books that show pictures of eggs so that students will know the appropriate colors to paint it.

Animals

Subject / Topic of Study: Birds

Grade Level: Preschool / Pre-K / Kindergarten

Time Considerations: Day 1 - Reading 10 minutes, walk 30 minutes
Day 2 - Categorize 10 minutes, story 20 minutes

Purpose / Objectives:

- LA.K.2 Listens to a variety of literary forms, including stories and poems.
- LA.K.3 Follows one and two part oral directions.
- LA.K. 8 Increases vocabulary to reflect a growing range of interests and knowledge.
- LA.K. 10 Begins to discriminate between spoken words and sentences.
- LA.K. 25 Uses words that signal sequence relationships such as first, next, and last.
- M.K. 25 Constructs and interprets graphs using actual objects or pictorial representation.

Special Needs Objectives:

- Increases mean length of utterances.
- Answers "what and where" questions.
- Copies model of a picture.
- Appropriately verbalizes pragmatic functions to gain attention, request an object or assistance.

Materials / Resources Needed:

- Are You My Mother? by P.D. Eastman
- Large piece of paper
- Markers

Activities / Procedures:

Day 1

1. Read Are You My Mother? by Eastman. Discuss birds and their characteristics.
2. Walk out to the nature trail and see how many birds you can find. Listen to the many sounds you hear them make.

Day 2

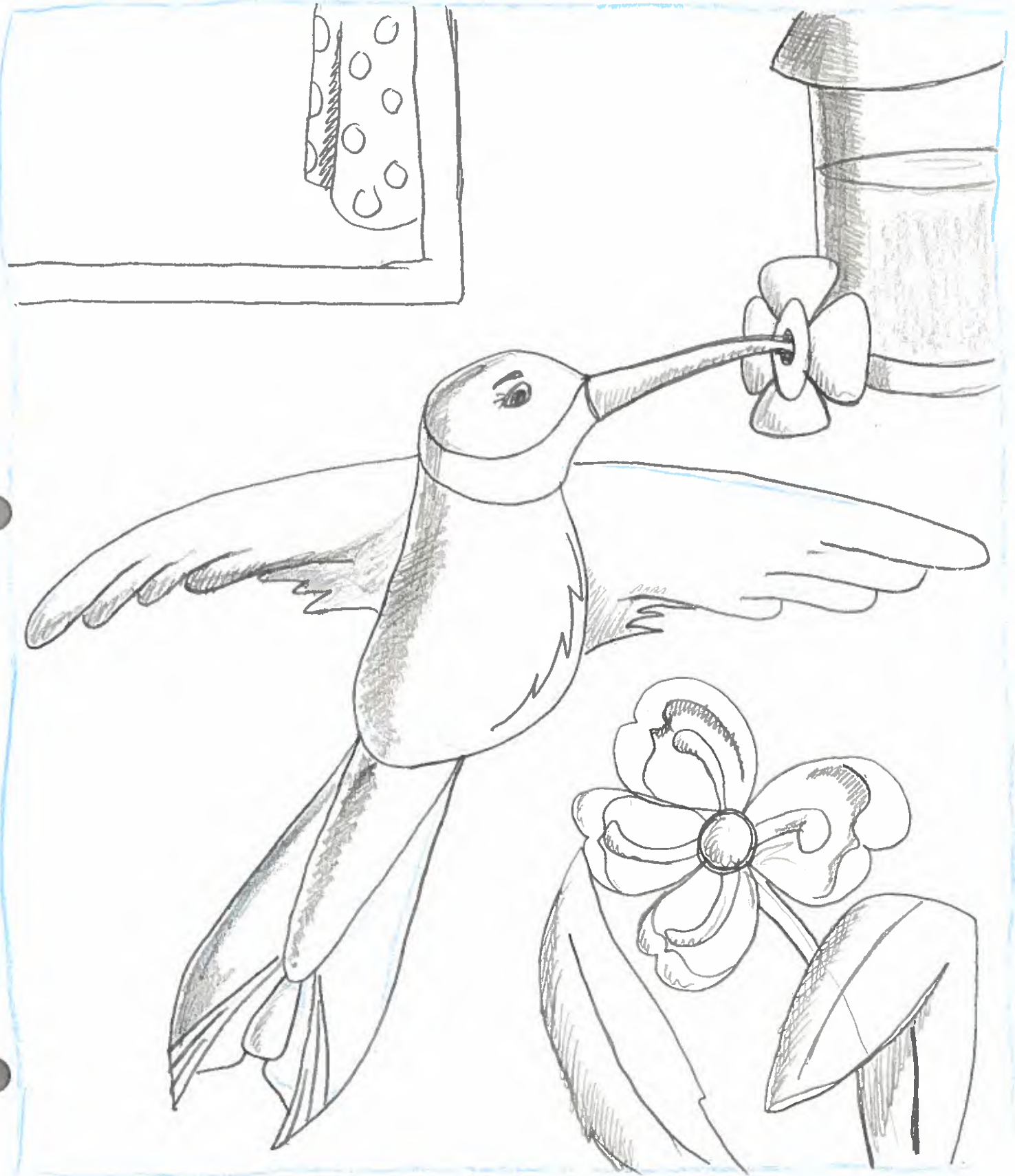
3. Read Are You My Mother? and categorize objects in the book (people, animals and things). Illustrate your objects (e.g. under the category animals, draw the baby bird) Make the appropriate sound of the as the teacher is drawing the object.
4. Make up a picture story about the book or any bird family using a large piece of paper and markers. While writing the story, use as many pictures in place of words as possible.

Evaluation / Assessment:

- Teacher observation

Extension / Integration Ideas:

- Find pictures of birds in magazines. Cut out and glue onto a bird collage.
- Sequence the story in picture form by folding a long piece of paper like a fold out accordion. Draw each "event" in each section, then unfold to see the sequence of the story as a whole.
- Come up with simple props and put on a play based on Are You My Mother?
- Find 3-5 different pictures of birds. Make a bird graph and let children tell you which is their favorite. Discuss which bird received the most / least votes.







Subject / Topic of Study: Bats

Grade Level: Preschool / Pre-K / Kindergarten

Time Considerations: 30-40 minutes

Purpose / Objectives:

- FAVA.K.4 Demonstrates proper care and safe use of art materials and tools.
- LA.K.2 Listens to a variety of literary forms, including stories and poems.
- LA.K.3 Follows one and two part oral directions.
- LA.K.8 Increases vocabulary to reflect a growing range of interests and knowledge.
- PE.K.3 Demonstrates and identifies basic non locomotor movements of bending, swinging, straightening, curling, stretching, twisting, turning, swaying, rising and collapsing.
- PE.K.4 Exhibits concepts of general and personal space using a variety of movement skills while transferring weight in various levels, directions and pathways.
- PE.K.6 Demonstrates static balance using body parts.
- S.K.2 Uses books and other media to obtain information related to science concepts.
- S.K.14 Recognizes and describes individual characteristics. Names positive ways he or she is similar and different from others in the group.

Additional Special Needs Objectives:

- Increase mean length of utterances.
- Appropriately verbalizes pragmatic functions to gain attention, request assistance, request an object.
- Demonstrates understanding of "What" and "Who" questions.

Materials / Resources Needed:

- Stellaluna by Janell Cannon
- "Stellaluna" puppet
- Bat houses in Living Classroom
- Black, brown, or gray construction paper (11½" X 3" strip and a triangular piece 6" X 4" X 4").
- Clothespins
- Glue
- Tape
- Newspaper
- Tempera paint (black, brown, gray)
- Small magnets
- Video on bats

Activities / Procedures:

1. Show students the "Stellaluna" puppet. Talk about what he looks like. Read Stellaluna. Ask the students questions about the story. Talk about how the bat slept upside down and at night. Talk about how bats are different from birds. Compare how we are each different. Discuss bug-eating and fruit-eating bats. Stellaluna is a fruit-eating bat. Discuss how bats help us.
2. Allow the children to find various places they can hang upside down (on a table of desk or chair). The child can lay on his stomach with his head down.
3. Take children to the bat houses in the Living Classroom. Observe to see if bats are hanging in the bat houses.
4. Do the attached art activity.

Evaluation / Assessment:

- Teacher observation
- Student participation

Source:

The Kid's Wildlife Book by Warner Shedd



PLAYING BAT AND BUG



You have probably heard the expression, blind as a bat. Sometimes it is used to describe a person whose eyesight is failing. But the saying simply is not true. Bats have excellent eyesight, and their large eyes help them hunt at night. But did you know that they also have a talent that is shared by only a few other mammals, the ability to "see" with their ears?

Using sound waves to locate an object is called echolocation. Whales, dolphins, and bats are able to find food in total darkness by sending out sound waves and listening for their echo. You can play a game that mimics the way these mammals "see" in the dark.

You will need the following materials:

- a large open playing area
- a blindfold
- several friends

Directions:

The game is called **Bat and Bug**. The object of the game is for the bat to find the bugs using only the sense of hearing. Here's how it is played.

1. Blindfold one player. That person will be the bat and can only use the sense of hearing to locate the bugs. Since bats are silent hunters, the person playing the bat should not make any sounds.
2. One or two players will be bugs - many bats' favorite food. They are not blindfolded. They may move around the playing area, but only in a heel to toe walking step. The bugs must continually say the word "bug."
3. The other players should gather in a circle. They will be the cave walls. When the bat gets close to the cave wall, the player directly in front of the bat as well as those on either side should say "cave,cave" to warn the bat away.
4. The play begins when a bug calls out the word "bug" and continues until the bat has found a bug. (You may want to set a time limit in which the bat has to catch the bug.) Then switch players and play the game again.



Why It Works:

In total darkness, a bat squeaks out high-pitched sound waves and listens for their echo. The sound they hear tells them the difference between large and small objects as well as moving or stationary objects. Insects are certain types of bats' favorite food, and bats know the echo that a fluttering insect makes. They are able to use the echoes to track down and capture the insect.

A Pocketful Of Science

Bats And Sound

Bats are equipped in remarkable ways to hunt at night. They use sound waves and a technique called *echolocation*. Using these activities, you can further explore the uniqueness of these nocturnal creatures and introduce the basic principles of sound. *ideas by Ann Flagg*

Activity 1: Vibrations

You will need:

one large rubber band per student

What to do:

Have youngsters firmly grasp one end of their rubber bands in each hand, then release their index fingers and thumbs. Then, using their thumbs and index fingers, have students pluck and strum their rubber bands to make a variety of sounds. Instruct students to carefully watch their rubber bands as they listen to the sounds being made.

Questions to ask:

1. Were all of the sounds you made alike?
2. What was the rubber band doing when you heard a sound?

Next:

Have each child place his fingers on the bony part of his throat; then lead students in a chorus of sounds. For example say, "Ahhhhhh," "Eeeeeee," and "Mmmmmm." Have each student describe to a classmate what he felt with his fingers. Then have each child invent a sound of his own and describe what he felt.

Questions to ask:

1. What did you feel when you said, "Ahhhhhh," and touched your throat?
2. Did all of the sounds you made feel the same to your fingers?
3. Think about the rubber band. What do you think might be happening inside your throat when you talk, sing, or make other sounds?

This is why:

Sound is given off when something vibrates. A person's vocal cords vibrate like rubber bands across a voice box. When you touch the bony part of your throat (the Adam's apple) and make a sound, you can feel the vibrations of the vocal cords.

Activity 2: Sound Waves

You will need:

glass pan or clear plastic container filled with one inch of water

food coloring (optional)

eyedropper full of water

overhead projector

What to do:

If desired, use the food coloring to tint the water. Place the pan of water on the overhead projector and project the watery image. When the water becomes calm, use the eyedropper to drop a droplet of water into the pan. Repeat this procedure.

Questions to ask:

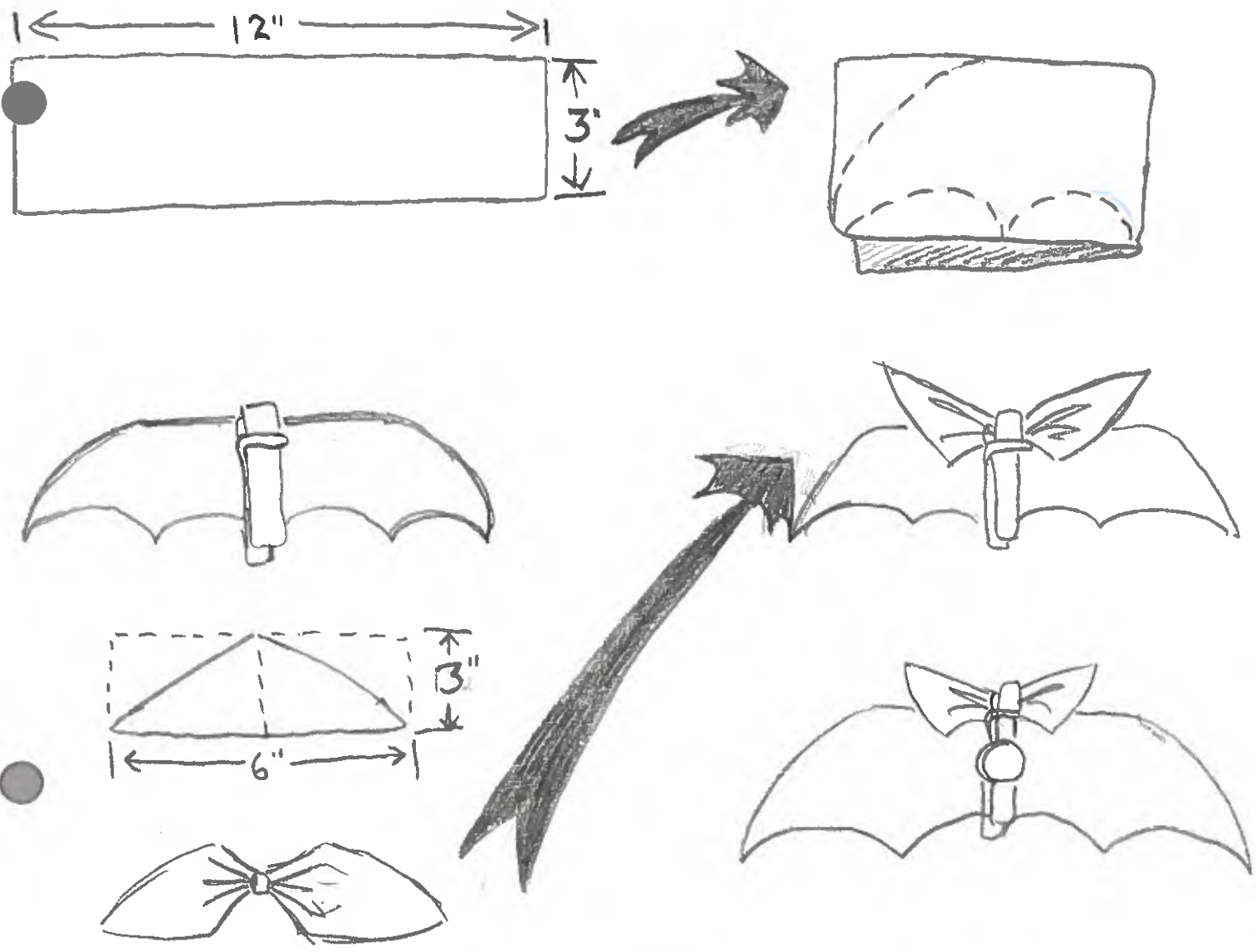
1. What did you see when each water droplet fell into the pan of water?
2. What happened when the water waves reached the sides of the pan?

This is why:

Although we cannot see sound waves, the circular waves that were seen in the water are similar to how sound waves travel through the air. When the water waves bounced off the sides of the pan and moved back towards the middle, you saw how an echo is formed. (When you hear an echo, your sound waves have hit and bounced off a very hard surface, and then traveled back to you!)



ROOSTING BAR



DIRECTIONS

Subject / Topic of Study: Science / Language Arts: Camouflaged Animals

Grade Level: Kindergarten

Time Consideration: 30 minute nature walk
30 minute classroom activity

Purpose / Objectives:

- LA.K.2 Listen to a variety of literary forms, including stories and poems.
- LA.K.3 Follows one and two part oral directions.
- LA.K.8 Increases vocabulary to reflect a growing range of interests and knowledge.
- S.K.13 Recognize factors leading to the survival of living things.
- S.1.13 Describe the conditions affecting survival of species including changes in climate, availability of shelter, food, air, water, and human encroachment.
- FAVA.K.1 Creates art with different subjects and themes and from personal experiences.

Materials / Resources Needed:

- Drawing paper
- Crayons
- Scissors
- A Walk in the Woods by Caroline Arnold
- Living Classroom

Activities / Procedures:

1. The students will listen to the story A Walk in the Woods
2. The students will take a nature walk through the Living Classroom looking for the information which was described in the book.
3. The students will look for animals that are being camouflaged by their surroundings.
4. In the classroom, the students will list the names of the animals and their camouflaged surroundings.
5. The students will draw a picture of their favorite animal.

Evaluation / Assessment:

- Teacher observation

Extension / Integration Ideas:

- Using the "Mask"-Querade activity on page 30 in The Kid's Wildlife Book by Warner Shedd, have students make a raccoon mask to wear to the Living Classroom on their next visit. The students could then observe where the raccoon would be camouflaged best.

Subject / Topic of Study: Owls

Grade Level: Preschool / Pre-K / Kindergarten

Time Considerations:

Purpose / Objectives:

- LA.K.2 Listens to a variety of literary forms including stories and poems.
- LA.K.3 Follows one- and two-part oral directions.
- LA.K.8 Increases vocabulary to reflect a growing range of interests and knowledge.
- M.K.4 Identifies basic geometric shapes (circles, squares, triangle, etc.)
- S.K.13 Recognizes factors leading to the survival of living things. Describes the conditions affecting survival of species, including changes in climate, availability, of shelter, food, air, water and human encroachment.

Special Needs Objectives:

- Student will appropriately verbalize basic pragmatic functions to gain attention appropriately, request a turn and/or object, direct the activities of a peer, and/or assistance.
- Students will button 1-2" buttons and cut on ¼" black lines increasing adaptive, fine motor and independence skills.
- Students will increase attending skills.

Materials / Resources Needed:

- Owlbert by Nicholas Harris
- Food: banana slices, peanut butter, graham crackers, round wheat crackers, raisins
- 6" paper plates
- Scissors
- Black paint, paint brushes
- Glue
- Small cupcake liners
- Black or yellow buttons
- Art shirts

Activities / Procedures:

1. Read Owlbert. Review with students. Discuss what he ate, where he slept, etc. Point out that he wasn't a pet like a dog - they were friends.

2. Take students to the class art center. Show the students how they will make an owl out of paper plates and various other materials.
3. To increase social interaction between peers as well as speech/language skills, let 1-2 of the students be the teacher. The other students will appropriately request materials from the "teachers". The other students will appropriately request materials from the "teachers". Students will put on an art shirt.
4. To make the owl:
 - Students will cut the plate at the bottom and save the pieces for later.
 - Paint the plate with black paint and let dry.
 - While paint is drying, go to the Living Classroom and look for places where owls might live. Look for owl boxes and evidence of owls. Go back to room.
 - Cut 3 triangles out of the piece of plate saved. Glue on 2 triangles for owls ears and one for beak.
 - Glue cupcake liners for eyes on either side of the head.
 - Glue buttons inside cupcake liners.
5. Prepare "Night Owl Snacks". (see attachment)

Evaluation / Assessment:

- Completed owl
- Teacher observation and questions

Little hands can help prepare their own nutritious snack.

Night Owl Snack

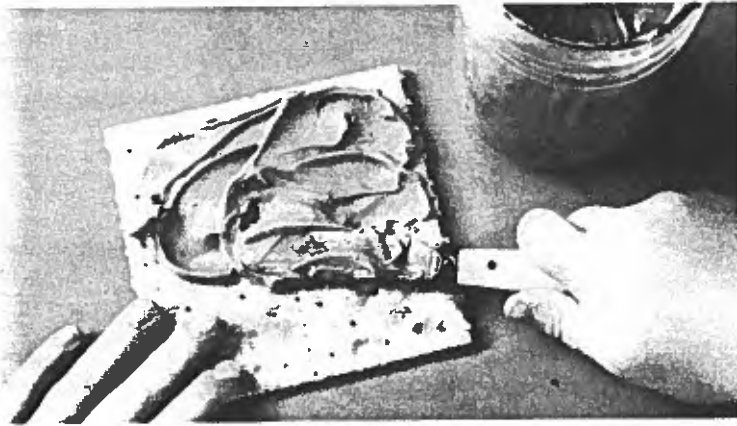
Better Homes and Gardens

Night & Day

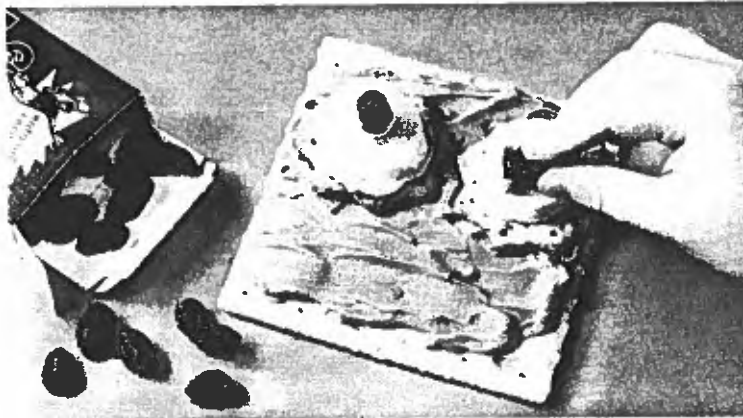
Do you know what night creature makes this wonderful sound, "Whooo Hoo"? Can you guess what sound you'll make after eating this delicious snack? We think it will be, "Yum, Yum!"

What you'll need...

- Table knife
- Peanut butter or soft-style cream cheese
- Saltine or graham crackers
- Rich round or wheat crackers
- Banana slices
- Raisins or cereal

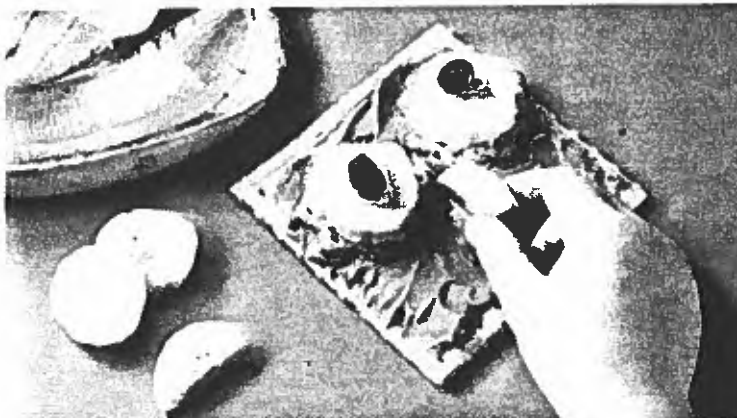


1 For the owl's head, use a knife to spread the peanut butter onto the saltine cracker.



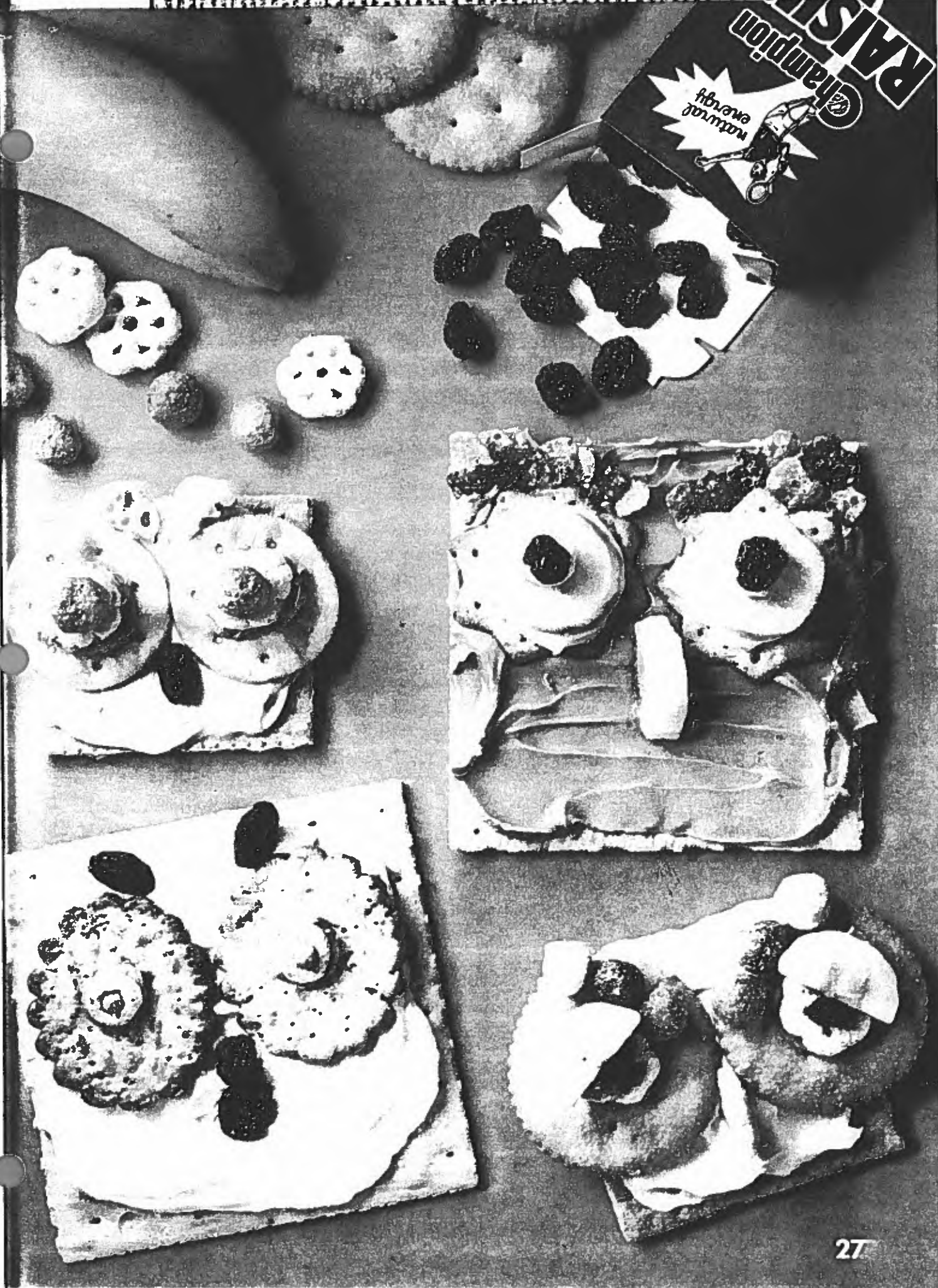
2 To make the owl's eyes, place 2 smaller crackers and 2 banana slices on top of the cracker.

Add 2 spoonfuls of cream cheese and top with 2 raisins (see photo).



3 For the owl's beak, use half of a banana slice. For the owl's eyebrows use cereal, if desired.

What other creatures can you create using crackers, peanut butter, bananas, and raisins?



Subject / Topic of Study: Science / Language Arts / Ants

Grade Level: Pre-K / Kindergarten

Time Considerations: 30 minutes

Purpose / Objectives:

S.K.11 Describes differences between living and nonliving things and classifies things as living and nonliving.

LA.K.2 Listens to a variety of literary forms including stories and poems.

Materials / Resources Needed:

- Ant Cities by Arthur Dorros
- Living Classroom
- Food scraps

Activities / Procedures:

1. Read the story Ant Cities by Arthur Dorros. Orally discuss the actions of each kind of ants.
2. Take a walk to the Living Classroom or playground. Find an ant bed. Do not disturb it. The children will put out different foods for the ants to eat.
3. Have the children predict which foods the ants will or will not eat. Observe and record the results.
4. Tell the children about how ants are very hard workers. They each have special jobs. If you were an ant, which job would you like? Make a decision. Graph.

Evaluation / Assessment:

- Teacher observation

Subject / Topic of Study: Fish

Grade Level: Pre-K / Kindergarten

Time Considerations: 30 minutes for outdoor activity
30 minutes for indoor activity

Purpose / Objectives:

LA.K.2 Listens to a variety of literary forms, including stories and poems.

S.K.11 Describe differences between living and nonliving things. Classifies things as living or nonliving. Sort examples of objects into living and nonliving categories using the following criteria: movement, growth, reproduction, and requirements for food/nutrition, water, and air.

FAVA.K.2 Creates artwork.

Materials / Resources Needed:

- Fish is Fish by Leo Lionni
- Chart paper, construction paper
- Paper plates
- String
- Glue
- Paper strip
- Reflecting Pond
- Markers
- Paint
- Stapler
- Scissors

Activities / Procedures:

1. Share the book Fish is Fish by Leo Lionni. Orally discuss the reasons why the fish could not go out to see the world and the frog could.
2. Take a nature walk to the Reflecting Pond. Observe tadpoles, frogs, fish, etc.
3. The teacher will write the responses on chart tablet as the children name animals with no legs, two legs, and four legs.
4. Make a paper strip fish bracelet or headband. (See attachment.)
5. The children will make a paper plate pond. Paint or color the paper plate. Use teacher prepared fish cutouts or have students design their own. Tape a string to the back of the paper plate and tape the other end of the string to a fish. (Put a notch for the string to rest at the top, so the fish will appear to be swimming.)

Evaluation / Assessment:

- Teacher observation
- Completed art projects

Extension / Integration Ideas:

•Trace, cut, and decorate 2 large fish shapes. Staple, glue, or lace the fish together, leaving a 2 inch opening, then stuff with paper.

Subject / Topic of Study: Science: Classifying Plants and Animals

Grade Level: Pre-K / Kindergarten

Time Consideration: 30 minutes

Purpose / Objectives:

S.K.12 Recognize basic needs of living things. Compares common needs between a plant and animal.

Materials / Resources Needed:

- Artificial and live flowers
- Real and stuffed pets
- Living Classroom
- Magazines
- Scissors
- Glue
- Construction paper

Activities / Procedures:

1. Discuss with the students that living things need food, water, sun, and air to grow.
2. Demonstrate by using a live and an artificial flower. Ask the students to orally describe each flower.
3. Compare a pet (hamster, fish) and a stuffed animal. Ask the students to orally describe each animal.
4. Using magazine pictures, the students will cut out pictures of living things (animals, plants) and non living things. They will then glue these pictures to construction paper.
5. Take the students on a nature walk in the Living Classroom. Orally discuss what living things can be seen. Locate objects which are not getting enough water, sunlight, or food.

Evaluation / Assessment:

- Teacher observations
- Classification of living and non living things

Extension / Integration Ideas:

- Plant 3 flowers. Put one in sunlight and water daily, one in the closet, and one in the sunlight but do not water. Compare each flower daily.

Subject / Topic of Study: Fine Arts / Art Production / Ladybugs

Grade Level: Preschool / Pre-K / Kindergarten

Time Considerations: Day 1 - 5 minutes per child during center time
Day 2 - 30 minutes

Purpose / Objectives:

FAVA.K.3 Uses a variety of art materials and techniques to model, construct, and compose original artwork.

FAVA.K.4 Demonstrates proper care and safe use of art materials and tools.

LA.K.3 Follows one and two part oral directions.

LA.K.8 Increases vocabulary to reflect a growing range of interests and knowledge.

Special Needs Objectives: Attend to and complete a teacher selected fine motor activity.

Cut on a black line without deviation (to increase visual perception, fine motor and independence skills)

Appropriately verbalize pragmatic functions to request an object and assistance.

Materials / Resources Needed:

- Large piece of art paper
- Variety of art materials (yarn, construction paper, pipe cleaners, etc.)
- Glue, scissors
- Red paint
- Circle sponge

Activities / Procedures:

Day One

1. Look at book on insects or ladybugs to identify what ladybugs look like.
2. During centers, give student a large sheet of paper and a circle sponge.
3. Instruct student to dip sponge in red paint and put 2-3 red circles on the paper.

Day Two

4. Instruct students to draw a head, legs, eyes, wings, and antennae onto red circle ladybug.

5. After paint dries, discuss with students needs of ladybugs (aphids, water, sun, etc.). Supply children with a variety of art materials to decorate their paper. Help students make leaves, aphids, water (lakes), sun, flowers, etc.

Evaluation / Assessment:

- Teacher observes finished artwork

Extension / Integration Ideas:

- Make ladybug cupcakes or cookies:* Make red and black cake icing to decorate cupcakes. Use licorice to make antennas.

Subject / Topic of Study: Math

Grade Level: Pre-K / Kindergarten

Time Considerations: 30 minutes

Purpose / Objectives:

FAVA.K.1 Demonstrates behaviors needed to participate in drama activities.

FAVA.K.9 Assumes roles in creative drama and dramatic play.

LA.K.2 Listens to a variety of literary forms.

LA.K.3 Follows one and two part oral directions.

LA.K.27 Sequences pictures to tell a story.

M.K.5 Compares two geometric shapes to determine relationship (larger than, smaller than, same shape as and same size as.)

M.K.21 Places objects in order according to size.

Materials / Resources Needed:

- Hand drawn pictures of all the animals from the story. •String
- The Grouchy Ladybug by Eric Carle

Activities / Procedures:

1. Read The Grouchy Ladybug to the students.
2. Retell the story -allow students to role play story by passing out animal pictures as roles. (Make as necklaces before passing out.) Look at the pictures in the book while role-playing to see what comes next.
3. Put the book away and sequence the animal pictures according to the story.
4. Now categorize animal pictures by size - little to big, large to small, etc.

Evaluation / Assessment:

- Teacher observation

Extension / Integration Ideas:

- Set up a ladybug village by calling 812-537-8650 or talking to your local lawn/garden center to order ladybugs. A ladybug village can be purchased at 800-345-3555.
- Cut paper plate in half and instruct students to paint red or orange. When paint dries attach legs and a head (black construction paper, pipe cleaners, etc.). Dip finger in black paint for spots. Place on a bulletin board with grass, etc.

Subject / Topic of Study: Art / Insect mobile

Grade Level: Pre-K / Kindergarten

Time Considerations: 30 minutes

Purpose / Objectives:

FAVA.K.2 Creates artworks, emphasizes one or more elements.

FAVA.K.4 Demonstrates proper care and safe use of art materials and tools.

LA.K.2 Listens to a variety of literary forms, including stories and poems.

LA.K.3 Follows one and two part oral directions.

Materials / Resources Needed:

- Insects by R. K. Kirkpatrick
- Coat hangers
- Scissors
- Oval pieces of construction paper
- Magazines with lots of insect pictures
- String
- Glue

Activities / Procedures:

1. Read or show pictures from Insects by R. K. Kirkpatrick
2. Visit the Butterfly Garden to see how many insects can be found.
3. Make an insect mobile by finding pictures of insects in magazines. After cutting out and gluing pictures to oval pieces of construction paper, attach with string to a coat hanger and hang from the ceiling.

Evaluation / Assessment:

- Teacher observation of finished insect mobile.

Extension / Integration Ideas:

- Make ladybug pears:* Color pears with red food coloring. Press raisins into pears for spots and eyes. Use licorice for antennae.
- Find a picture of 5 different insects. Make a class "Insect Graph" and graph each child's favorite insect.

Subject / Topic of Study: Science / Worms

Grade Level Preschool / Pre-K

Time Considerations: 20 minutes

Purpose / Objectives:

S.K. 1 Asks questions, makes and keeps simple records of observations, sorts objects, communicates with others, and makes predications and uses estimation and measurement.

LA.K 3 Follows one and two part oral directions.

LA.K. 8 Increases vocabulary to reflect a growing range of interests and knowledge.

M.K. 3 Recognizes one half as part of a whole.

S.K. 13 Recognizes factors leading to the survival of living things. Describes the conditions affecting survival of species, including changes in climate, availability of shelter, food, air, water and human encroachment.

S.K. 17 Recognizes and names common earth materials such as soil, rocks, water and air.

Special Needs Objectives:

 Tolerate variety of different materials using the sense of touch.

Materials / Resources Needed:

- Glass jar, container, or aquarium
- Potting soil or different soils/sand
- Worms (either dug up or brought at bait store)
- Worm's Eye View: Make Your Owl Wildlife Refuge by Kipchak Johnson
- Earthworms by Elaine Pascoe
- The Giant Encyclopedia of Them Activities for Children 2 to 5, Gryphon House (J. Gardner's personal book)
- Small rocks
- Green leafy vegetables
- Grass cuttings
- Old leaves
- Dark paper or fabric
- Damp cloth
- Potato peels

Activities / Procedure:

1. Show students pictures of worms from the reference books above - pointing out what they look like and the parts of them.

2. Make a worm home:

- Place bits of gravel/rocks on bottom of jar.
- Fill jar 1/2 to 3/4 full with potting soil or different types of soil/sand. If you use different types of soil, place them in different layers.
- Place old leaves and old grass cuttings on top.
- Place earthworms in jar (a gallon holds up to 12 worms.)
- Mist the soil daily with water to keep it moist.
- Place food for worms in jar (2 tablespoons every other week)
- Keep the top of the jar covered with a damp cloth to keep the worms cool and the soil moist.
- Wrap the jar with a dark paper to encourage the worms to build tunnels.
- Eventually, a fine dark layer of soil will be on the top. This humus soil is great for gardens.

Evaluation / Assessment:

- Teacher observation of finished worm home

Extension / Integration Ideas:

- Either buy worms or dig some up. Pass out 1 worm and paper plate to each child. Let them touch the worms and see them stretch. Children can use gloves if they're squeamish.

Videos:

- Wormania, Flowerfield Enterprises Production
- The Art of Backyard Composting, Kuehn Mills Productions, Inc.

Source:

- The Giant Encyclopedia of Them Activities for Children 2 to 5: over 600 favorite activities created by teachers. Ill. by Rebecca Butcher Schoenflies. Gryphon House, Inc. 1993. Mt. Rainier, Maryland.

Subject / Topic of Study: Bats

Grade Level: Pre-K / Kindergarten

Time Considerations: 30 minutes indoors
30 minutes outdoors

Purpose / Objectives:

LA.K.2 Listens to a variety of literary forms, including stories and poems.

S.K.15 Uses senses to sort and classify shapes, sizes, sounds, tastes, odors, textures, and temperature using the 5 senses.

Materials / Resources Needed:

- Stellaluna by Janell Cannon
- Markers
- Blindfolds
- Chart tablet
- Open playing area

Activities / Procedures:

1. Share the story *Stellaluna*. Students will hold the puppet during the story. Each time "Stellaluna" is said, the students will pass the puppet to the next child.
2. The students will make a people graph. "Afraid of Bats and Not Afraid of Bats". Count and compare.
3. The students will make a graph on chart tablet of "Animals I am afraid of" and "Animals I am not afraid of." Count and compare.
4. Talk with the students about bats having poor eyesight and that bats have a great sense of hearing. The bat hears the echoes that insects make to them.
5. The children will play a game called Bat and Bug. The child (Bat) will be blindfolded. He/she will locate the bugs (children) by using the sense of hearing.

Evaluation / Assessment:

- Teacher observation.

Extension / Integration Ideas:

- Books *Night- Time Animals* by Grace Mabie
- Animals of the Night* by Merry Banks
- "Bats and sound Activities," p.9-10 "Mailbox" Primary Oct/Nov 1993.

Source:

- Explore Science through Literature- Level C. 1991 by Evan Moor Corp. (Bat and Bug game)

Subject / Topic of Study: Insects

Grade Level: K

Time Considerations: Extended Lesson

Purpose / Objectives:

The student will identify 3 parts of a grasshopper and classify it as an insect with six legs.

Materials / Resources Needed:

- Living Classroom
- Magnifying cup
- Grasshopper
- Grasshopper picture graph

Activities / Procedures:

1. Students will take their magnifying cups out into the Living Classroom.
2. Groups of 4 will look for grasshoppers.
3. They will come back into the classroom and talk about the 3 main parts - head, thorax, and abdomen. Point out these parts to each group.
4. Talk about similar insects so the students will classify the grasshopper as an insect with six legs.
5. Take the students back to the Living Classroom to release the grasshoppers.

Evaluation / Assessment:

- The students will be evaluated by identifying the grasshopper as an insect with six legs and identifying the 3 main parts on a graph.

Subject / Topic of Study: Science - Shadows

Grade Level: Kindergarten

Time Consideration: 30 minute nature walk

Purpose / Objectives:

S.K.10 Observes sources of light and variation in shadows. Locates source of light causing shadows.

Materials / Resources Needed:

- Living Classroom
- Drawing paper
- Pencil
- Crayons

Activities / Procedures:

1. The students will take a nature walk through the Living Classroom. On the walk, the students will observe the shadows around them.
2. The students will identify the object making the shadow.
3. The students will use objects in their surroundings to make their own shadows.

Evaluation / Assessment:

- Teacher observation

Extension / Integration Ideas:

- Using the overhead, allow students to make shadows by tracing them onto drawing paper and coloring them.

Subject / Topic of Study: Science - Shadow Pix

Grade Level: Kindergarten / 1

Time Consideration: 30 minutes

Purpose / Objectives:

S.K.9 Identifies relationship between light and shadows and predicts occurrence of shadows. Makes shadows with objects and tells where shadows will occur. Identifies objects based on their size and shape of their shadows.

Materials / Resources Needed:

- Clipboards
- Pencils
- Paper
- Object to make a shadow (rock, stick, leaf)
- Sunny day

Activities / Procedures:

1. Have students observe the sun and how it casts shadows.
2. Students locate the sun in direction to the object observed. ?????
3. Have students place an object on a piece of paper and draw the shadow (trace the object).
4. Have students observe how time changes a shadow.

Evaluation / Assessment:

- Student's shadow pictures

Extention / Integration Ideas:

- Create a sundial

Subject / Topic of Study: Science / Math: Leaves

Grade Level: Kindergarten

Time Consideration: 30 minutes in the Living Classroom
30 minutes in the classroom

Purpose / Objectives:

- The student will identify characteristics of Fall.
- The student will identify colors.
- The student will construct a bar graph.

S.K.5 Sorts collections of matter by any physical characteristic.

S.K.1 Asks questions, makes and keeps simple records of observations, sorts objects, communicates with others, and makes predictions and uses estimation and measurement.

Materials / Resources Needed:

- Ziploc baggie
- Graphing paper
- Crayons
- Leaves
- Living Classroom
- Book:

Activities / Procedures:

1. Discuss Autumn. List things that happen in Autumn. Discuss why we call it Fall (Leaves fall to the ground). Read students a story about leaves falling off the trees.
2. Explain to the class that they are going on a walk in the Living Classroom and will collect fallen leaves. Then give each student a baggie and have them walk through the woods collecting leaves. Observe the woods on your walk and discuss anything the students observe or find.
3. In the classroom, discuss the walk. Have students sort their leaves by color (or size or shape) and then hand out graph paper. Have students color in one box per leaf for the colors on the graph.
4. Students can report their findings and the teacher can make a collective class graph on chart paper.

Evaluation / Assessment:

- Completed student graphs of their leaves.
- Ask questions about the graph.

Extension / Integration Ideas:

- Make leaf rubbings
- Leaf identification

Subject / Topic of Study: Science / Language Arts: Fall Leaves

Grade Level: Kindergarten

Time Consideration: 30 minute nature walk
30 minute classroom

Purpose / Objectives:

S.K.15 Use senses to sort and classify colors, shapes, sizes, sounds, tastes, odors, textures, and temperatures.

L.A.K.2 Listen to a variety of literary forms including stories and poems.

Materials / Resources Needed:

- Ziploc bags
- Collection of leaves
- Autumn Leaves by Gail Saunders-Smith

Activities / Procedures:

1. Read the story Autumn Leaves .
2. Take the students on a nature walk through the Living Classroom. Have students collect leaves of different colors, shapes, and sizes.
3. The students will sort their leaves by color, shape, size.

Evaluation / Assessment:

- Teacher observation

Extension / Integration Ideas:

- The students will make a leaf rubbing of their favorite leaf.
- The students will make leaf creatures. Read the book Things I Can Make With Leaves by Sabine Lohf.

Subject / Topic of Study: Fall Mobile

Grade Level: Preschool / Pre-K / Kindergarten

Time Considerations: 45 minutes

Purpose / Objectives:

LA.K.3 Follows one and two part oral directions.

LA.K.2 Listens to a variety of literary forms, including stories and poems.

S.K.3 Identifies and practices accepted safety procedures in manipulating science materials and equipment.

S.K.15 Uses senses to sort and classify colors, shapes, sizes, sounds, tastes, odors, textures, and temperatures.

S.K.8 Recognizes, describes, and compares colors and sorts by color families. Identifies, names, and groups objects by color.

FAVA.K.3 Uses a variety of art materials and techniques to model, construct, and compose original art works.

Special Needs Objectives:

Increases mean length of utterances.

Appropriately verbalizes pragmatic functions to gain attention, request assistance, request an object.

Materials / Resources Needed:

- Autumn Leaves by Gail Saunders-Smith
- String
- Cool glue gun
- Living Classroom
- Bags for each student
- The Giant Encyclopedia of Theme Activities for Children 2 to 5 Gryphon House

Activities / Procedures:

1. Talk to the students about the season of Fall. Read Autumn Leaves. Talk about the different colors of the leaves.
2. Ask the students about the things they think they will see that would let them know it is the Fall season.
3. Tell the students that they are to take 1 bag each and pick up items in the Living Classroom. Have each student make sure to get a stick the length of their

arm. Once everyone has 5 to 10 items go back to the classroom.

4. Have the children empty their bags and separate their nature items by color. Talk about the names, colors, shapes, sizes, feel, etc. of the different items.
5. Show the children how to tie the items onto the string and then the string onto the stick to make the mobile. Hang the mobiles from the ceiling.

Evaluation / Assessment:

- Evaluation of completed mobile
- Observation of sorted materials by colors

Subject / Topic of Study: Hot / Cold

Grade Level: Preschool / Pre-K / K

Time Considerations: 45 minutes

Purpose / Objectives:

- LA.K.1 Listens and speaks in informal conversations with peers and adults.
- LA.K.3 Follows one and two part oral directions.
- LA.K.9 Communicates effectively when using descriptive language, relating experiences and retelling stories.
- LA.K.30 Increases vocabulary to reflect a growing range of interests and knowledge.
- S.K.1 Asks questions, makes and keeps simple records of observations, sorts objects, communicates with others, makes predictions and uses estimation and measurement.
- S.K.5 Sorts collections of matter by any physical characteristic. Classifies objects according to paths of opposite physical properties such as large, small; heavy, light; sink, float; hot, cold; wet, dry; or light, dark.

Special Needs Objectives:

Increases mean length of utterances.

Increase attending skills.

Appropriately verbalizes pragmatic functions to gain attention and request a turn.

Demonstrates understanding of "what" questions.

Materials / Resources Needed:

- 2 hand held mirrors
- 2 bowls of soup (1 warm, 1 cold)
- 2 cups of hot cocoa (1 warm, 1 cold)
- Bottle
- Can of soda
- Matches
- Bowl
- Popsicle
- Cup of ice
- 2 thermometers
- 2 large containers of water (1 hot, 1 cold)
- Candle
- Butter
- Microwave

Activities / Procedures:

1. Before the activity starts put one of the mirrors outside (if it's warm) and one in the refrigerator. If the weather is cold, heat mirror with a hairdryer.
2. Put a thermometer in the containers of hot & cold water.
3. Set hot and cold items out. Ask students what they feel like without letting them touch them.
4. Put out the 2 bowls of soup or the 2 cups of cocoa in front of the students. Without letting them touch them ask them which one is cold. Then tell them they have to "feel" if something is cold or hot. Let them touch the outside of the cups and bowls. Then talk about the temperatures. Let them guess if the other items are hot or cold before they feel them. Observe the thermometers periodically during the activity. Explain that the hotter something is the higher the red line moves up the thermometer. Discuss safety rules like being careful handling things that are hot. Point out that parents use pot holders when they cook, so they won't get burned.
5. Let students feel a candle. Then show how it melts once there is a flame and the candle becomes warm.
6. Melt butter in a microwave (after students have felt it was cold). Talk about how a refrigerator keeps things cold and an oven/stove makes them hot.
7. Blindfold students. Bring in the mirrors and get them to touch them. Then take them to the window and let them feel the temperature of the outdoors by touching the window. Take them to the living classroom and feel different things (e.g. grass in sun, leaves in shade, water from pond, well water, rocks in sun, rocks in shade).

Evaluation / Assessment:

- Teacher observation

Extension / Integration Ideas:

- At every morning circle time, let 1 child go to the window and touch it to see what the weather feels like outside (or go outside and stand) to see what it feels like.
- Discuss what types of clothes are worn during warm/hot weather vs. cold/cool weather. Let the students pick cards dividing them into teams of hot & cold and then find and put on appropriate clothing. Allow students to dress up dolls according to hot/cold weather.

Subject / Topic of Study: Rain

Grade Level: Preschool / Pre-K / Kindergarten

Time Considerations: 45 minutes

Purpose / Objectives:

LA K.2 Listens to a variety of literary forms including stories and poems.

LA K.3 Follows one and two part oral directions.

LA.K.8 Increases vocabulary to reflect a growing range of interest and knowledge.

P.E. K.2 Demonstrates and identifies the basic locomotor movement of walking, running, hopping, jumping, galloping, sliding, leaping and skipping.

Materials / Resources Needed:

- Rain Rain Rivers by Uri Shulevitz
- Dishpan
- Constructed game spinner
- Pictures representing sun, rain, clouds, hot, cold.
- Sponge
- "Puddles" - made from blue pieces of paper.
- Bucket
- Water

Activities / Procedures:

1. Read Rain Rain Rivers. Discuss. Ask questions. Use a sponge, water, and dishpan to illustrate a cloud and how rain falls. Take sponge, bucket and water to different areas of living classroom and make different puddles of "rain" on different surfaces (leaves, dirt, rocks, sun centers, etc.)
2. Return to room or mossy area. Lay down blue pieces of paper that represent a puddle. Glue or draw a picture symbol of the sun, rain, clouds, hot and cold. The game spinner should be separated into areas that have corresponding puddle pictures. Students will spin the dial and hop or jump from "puddle" to "puddle" until they jump to the picture they saw on the dial. They will give the name of the picture.

Evaluation / Assessment:

- Teacher observation and questions

Extension / Integration Ideas:

- Make a graph showing how many sunny vs. rainy days in a month.
- Make 2 rain gauges to put outside classroom door. Make one from a large metal coffee can and the other using a 2-3 liter clear soda bottle with the top cut off and bottom weighted. Make measurements inside both using a permanent marker. Talk about the difference of sound the rain makes in the 2 gauges. Keep a record of the rain measurements each time it rains for a month.

Subject / Topic of Study: Shadows

Grade Level: Preschool / Pre-K / Kindergarten

Time Considerations: 45 minutes

Purpose / Objectives:

S K.9 Identifies relationship between light and shadows, and predicts occurrence of shadows, makes shadows with objects and tells where shadows will occur. Identifies objects based on their size and shape of their shadows.

LA.K.2 Listens to a variety of literary forms, including stories and poems.

LA.K.3 Follows one and two part oral directions.

LA.K.8 Increases vocabulary to reflect a growing range of interests and knowledge.

M.K.15 Recognizes and selects the numerals (0-10) number words to name the number of elements in a set.

Special Needs Objectives:

Increases mean length of utterances.

Appropriately verbalizes pragmatic functions to gain attention and request assistance.

Materials / Resources Needed:

- Natural resources from nature trail; leaves, acorns, grasses, sticks, twigs
- Black construction paper
- My Shadow by Sheila Gore

Activities / Procedures:

1. To prepare for the lesson, teacher will lay an object down on black construction paper and trace around it. Trace a variety of different objects in this manner to be passed out later.
2. Discuss how the sun shines down and makes shadows. Read My Shadow by Gore.
3. Go outside and see what your shadow looks like. Move your hands and watch the shadow.
4. Walk up to the Nature Trail and give each student 1-2 black pieces of construction paper that has an object outline on it. Instruct students to try to identify and locate the object outlined.

5. Lay out all the pieces of paper and their matching object and let the class examine them.
6. Group each object together (e.g. all leaves together) and count how many are in each set.

Evaluation / Assessment:

- Teacher observation.

Extension / Integration Ideas:

- Find a variety of dried leaves. Give 1 whole leaf to each child and use rolling pins to crush the rest of the leaves into tiny pieces. Cover the 1 leaf with watered down glue and sprinkle with crushed leaves. Hang up to display or put on a tree on a bulletin board.

Subject / Topic of Study: Sun

Grade Level: Preschool / Pre-K / Kindergarten

Time Considerations: 30-40 minutes

Purpose / Objectives:

LA.K.3 Follows one and two part oral directions.

S K.9 Identifies relationship between light and shadows, and predicts occurrence of shadows.

FAVA.K.3 Uses a variety of art materials and techniques to model, construct, and compose original artworks.

FAVA.K.4 Demonstrates proper care and safe use of art materials and tools.

Materials / Resources Needed:

- Our Friend the Sun by Janet Palazzo
- Scissors
- Travel brochures
- Yellow construction paper
- Magazines
- Weather station in the Living Classroom

Activities / Procedures:

1. Take kids to S.U.N. Center 2 and read Our Friend the Sun. Review the story. Look around observe the sunlight in the reflecting pond and through the trees. Talk about how sunlight feels and how it helps plants grow. Talk about shadows.
2. Return to classroom. Get out magazines and travel brochures. Let students cut out pictures of activities that can be done in the sun. Glue onto yellow pages and cut into shape of sun. Have students dictate while you write what they want to say about the picture. Construct a book for the class. This can be titled "Fun in the Sun."

Evaluation / Assessment:

- Observation, discussion, and evaluation of pictures and student statements.

Extension / Integration Ideas:

- Make Sun Tea.
- Make a sunshine snack: cut hard boiled eggs in slices so the yolk is round. Put each "sun" on a cracker.

Source:

• Everyday Circle Times by Liz Dick Wilmes. 1983 Building Blocks Publication. 38W567 Brindlewood, Elgen, Illinois 60123

Subject / Topic of Study: Wind and Air

Grade Level: Preschool / Pre-K/ Kindergarten

Time Considerations: 30 minutes

Purpose / Objectives:

LA K.30 Increases vocabulary to reflect a growing range of interests and knowledge.

S K.7 Predicts properties of matter and tests predictions, constructs groups of objects by demonstrating characteristics such as sink/float, bend/rigid, demonstrates that air takes up space and has mass by testing these properties using activities, such as using balloons or sitting on inflated large bags.

S K.17 Recognizes and names common earth materials such as soil, rocks, water and air.

Materials / Resources Needed:

- Balloons
- Bubbles and bubble wands
- Deep bowl
- S.U.N. Center 3
- Pump and a tube from a bicycle tire
- Parachute or large sheet
- Paper napkins
- Water
- Glass

Activities / Procedures:

1. Take the students outside to S.U.N Center 3 and seat them in a circle. Blow up a balloon. Ask the kids what made the balloon bigger. Ask them if they can find some air.
2. Talk about how air takes up space even though we can't see it. Ask them to take a deep breath. Get them to see how their lungs fill up with air and enlarge.
3. Blow up the bicycle tire. Blow balloons up again and let them discuss how air can move things.
4. Blow up balloons and tie them off. Let the kids hold the sides of a sheet. Put the balloons on the sheet. Move the sheet up and down. Talk about how the balloons move in the air around and above the moving sheet.
5. Crumple a paper napkin and push it the the bottom of a glass. Fill the bowl with enough water to cover the glass. Turn the glass upside down and push it straight into the water. Don't tip the glass. Then, without tipping the glass, pull it straight up and out of the water. See that the napkin is still dry.

Evaluation / Assessment:

- Teacher observation and questions.

Extension / Integration Ideas:

- Take students out to Living Classroom on a windy day. Let the kids blow bubbles. Discuss wind and direction.
- Read My Balloon by Kay Davies and Wendy Oldfield. Follow the activities in the book.
- Make a windsock.

Source:

The Giant Encyclopedia of Theme Activities for Children 2 to 5. Gryphon House

Subject / Topic of Study: Animal homes

Grade Level: Pre-K / 1

Time Considerations: 30 minutes

Purpose / Objectives:

S.K.13 To identify the homes animals live in.

S.1.14 To compare the coloration of animals that enhance survival.

Materials / Resources Needed:

- Book on animal homes (A House is a House for Me or Animal Homes: a first look at Animals, etc.)
- Living Classroom S.U.N. center

Activities / Procedures:

1. Visit a S.U.N. center and share a book about animal homes.
2. Try to find some of the animal homes on the nature trail.

Evaluation / Assessment:

- Teacher will observe student responses to identifying the places animals live.

Extension / Integration Ideas:

- Have students cut pictures of animals from magazines. The animals should be placed on the bulletin board next to the example of the animal home.
- Center matching game: students may match up pictures of animals and their homes.

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Subject / Topic of Study: Science- "Mapping Insect Hideaways" or "Discovering Wintering Insects"

Grade Level: 1

Time Considerations: 20 -30 minutes

Purpose / Objectives:

SS 1.14 Identifies pictorial symbols on maps.

S 1.11 Compares and describes different animals in the ways they look and grow;
Concept: some animals are alike in the things they do and some are very different.

Materials / Resources Needed:

- Wintertime for Animals by M. Cosgrove
- Simple map of Living Classroom
- Clipboard
- Paper
- Pencil

Activities / Procedures:

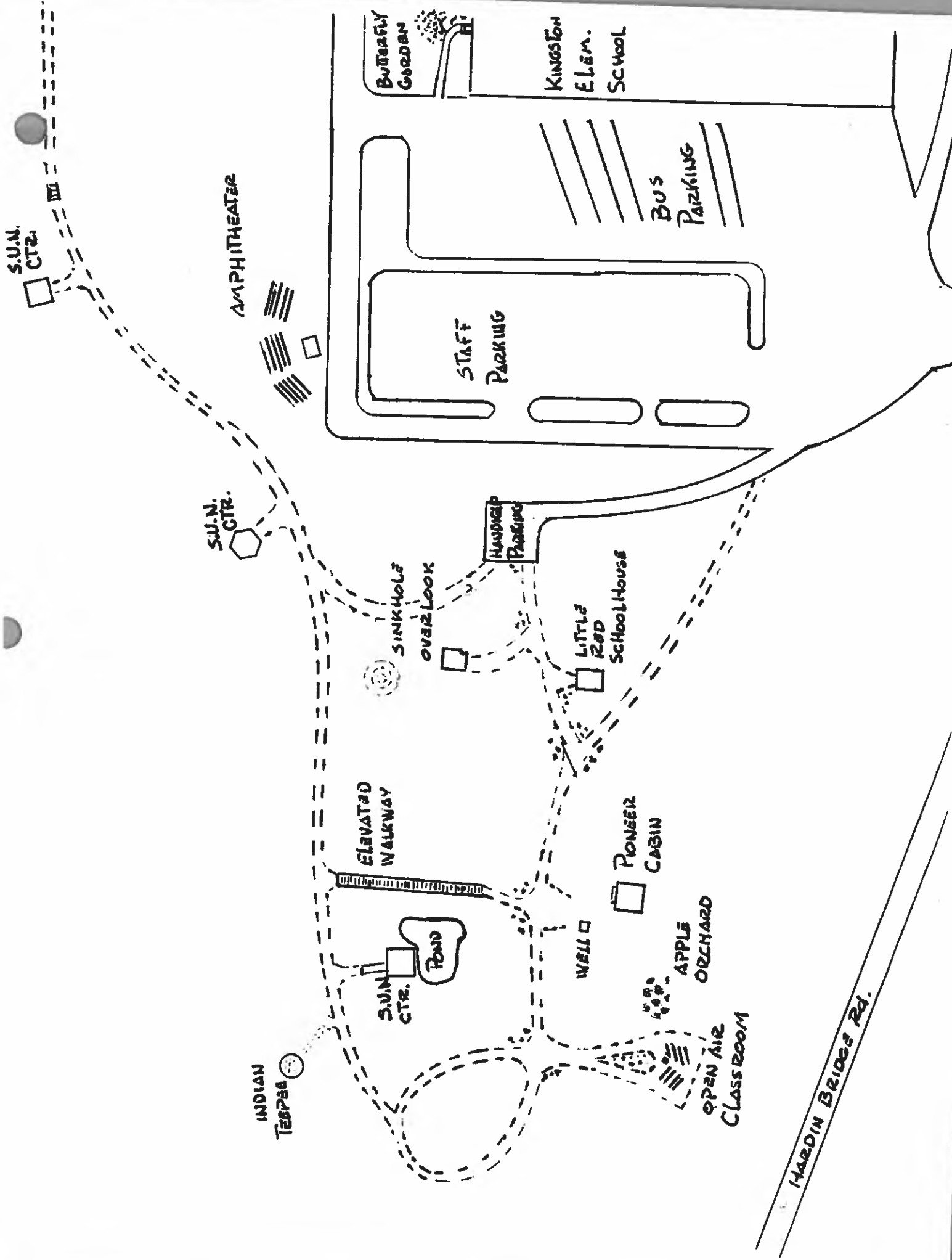
1. In classroom have students brainstorm ideas about where animals and insects spend their winter in the Living Classroom.
2. Take students to Living Classroom in search of wintering insects, animals. Instruct or remind them to look under wood, logs, among rocks, in cracks, among fallen leaves, in weeds, on plants, on trunks or twigs near the schoolhouse or pioneer homestead.
3. Wherever they discover eggs, young insects, or adults, have students mark an X on the location on the map of the Living Classroom.
4. On sunny warm days students should find hibernating insects that have awakened briefly (slow moving beetles, flies, etc.)
5. Collect maps. In spring, have students recheck X locations to see how the insects have changed.
6. Share maps in the classroom.

Evaluation / Assessment:

- Teacher observation.

Extension / Integration Ideas:

- Students may mark location of animal homes on map of Living Classroom



SUN. CTR.

AMPHITHEATRE

SUN. CTR.

BUTTERFLY GARDEN

KINGSTON ELEM. SCHOOL

BUS PARKING

STAFF PARKING

HANDICAP PARKING

SINKHOLE
OVERLOOK

LITTLE RED SCHOOLHOUSE

ELEVATED WALKWAY

PIONEER CABIN

SUN. CTR.

POND

WELL

APPLE ORCHARD

INDIAN TERPES

OPEN AIR CLASSROOM

HARDIN BRIDGE Rd.

Subject / Topic of Study: Language Arts / Health / Math

Grade Level: 1

Time Consideration: 45 minutes

Purpose / Objectives:

- M.1.20 Counts objects 0-100
- LA.1.12 Increases vocabulary to reflect a growing range of interests and knowledge.
- LA.1.14 Classifies and categorizes words into sets and groups with common characteristics.
- LA.1.18 Increases existing sight vocabulary.
- LA.1.20 Reads with fluency and expression.
- H.1.24 Discuss safe / unsafe practices in outdoor education

Materials / Resources Needed:

- My 5 Senses by Alike
- Clipboards
- Paper
- Pencil
- Scavenger Hunt worksheet

Activities / Procedures:

1. Teacher reads My 5 Senses. Discuss. Ask detailed questions.
2. Students reread the same story whole group. Tell students that they will use their five senses to locate items in the Living Classroom.
3. Divide students into teams. Allow students to choose team leaders. Explain responsibilities of team leaders and group members. Discuss safe/unsafe practices in outdoor education.
4. Designate the Sun Center as the base where the teacher waits for groups to explore nearby areas. Teacher sets firm parameters for exploration. Non-compliers become members of the teacher's group.
5. Group leader records items located on Scavenger Hunt list.
6. Teacher calls groups together using bird caller.

Scavenger Hunt

Kingston Living Classroom

1. Name the first marker on Turkey Trot Trail.
2. What small building is located behind the school house?
3. Count the scarecrows.
4. What is written on the bird house in front of the little red school house?
5. What are the uses of the Winged Elm Tree?
6. Name the president's pictures in the school house?
7. What is located on Johnny Apple Seed Circle?
8. What are the uses of the Black Oak Tree?
9. What's found on Indian Trail?
10. Which tree is used for charcoal?
11. What's the name of the lane where Reflection Pond is located?
12. Name the elevated bridge.
13. What is a sinkhole usually linked to?
14. What shape is the sun center on the hill?
15. Name the animals on the picture taking board.
16. Name the area that is in the process of being built.

Subject / Topic of Study: Science - Animals

Grade Level: 1

Time Consideration: 40 minute classroom
30 minute walk

Purpose / Objectives:

S.1.11 Compares and describes different animals in the ways they look, grow, and move.

S.1.12 Compares various animal groups and how they are alike and different. Identifies groups of animals that have similar characteristics and names the characteristics.

Materials / Resources Needed:

- Story "What Game Shall We Play?" by Pat Hutchins (In Literature Series)
- Attachments with information on some of the animals in the story.

Activities / Procedures:

1. After reading the story list the characteristics of each animal and use a Venn diagram to show similar characteristics and individual characteristics.
2. Break the class up in to six groups. Each group will be one of the animals in the story. At the entrance of the nature trail in the Living Classroom tell groups that they are to find a spot along the trails to have their home. Example: Duck group gather by the reflection pond. Support teacher or parent volunteer could help supervise the groups.
3. Teacher visits each group and asks why this would be a good place for their home.
4. Meet at Sun Center #3 to discuss together the location each group chose.

Evaluation / Assessment:

- Observe the location that groups chose and listen to response to questions.

Extension / Integration Ideas:

- Make a diorama of the animal's home.
- Take a class walk and find places to ask the students which animal from the story would live there.

What
attachments

7. Each group shares items found in the Living Classroom under each sensory category.
8. Groups evaluate activity. "What did you like?" "How could we do this better?"

Evaluation / Assessment:

- Recorded lists will be used to assess total group effort.

Extension / Integration Ideas:

- Count total number of items found by each group
- Add items found by all groups for grand total.
- Compare number of items found in categories to determine fewest, most, etc.

Subject / Topic of Study: Social Studies / Map Skills

Grade Level: 1

Time Consideration: 25 minute walk

Purpose / Objectives:

H.1.24 Differentiates between safe and unsafe practices when in an outdoor environment.

SS.1.11 Identifies a compass rose as a directional tool.

Materials / Resources Needed:

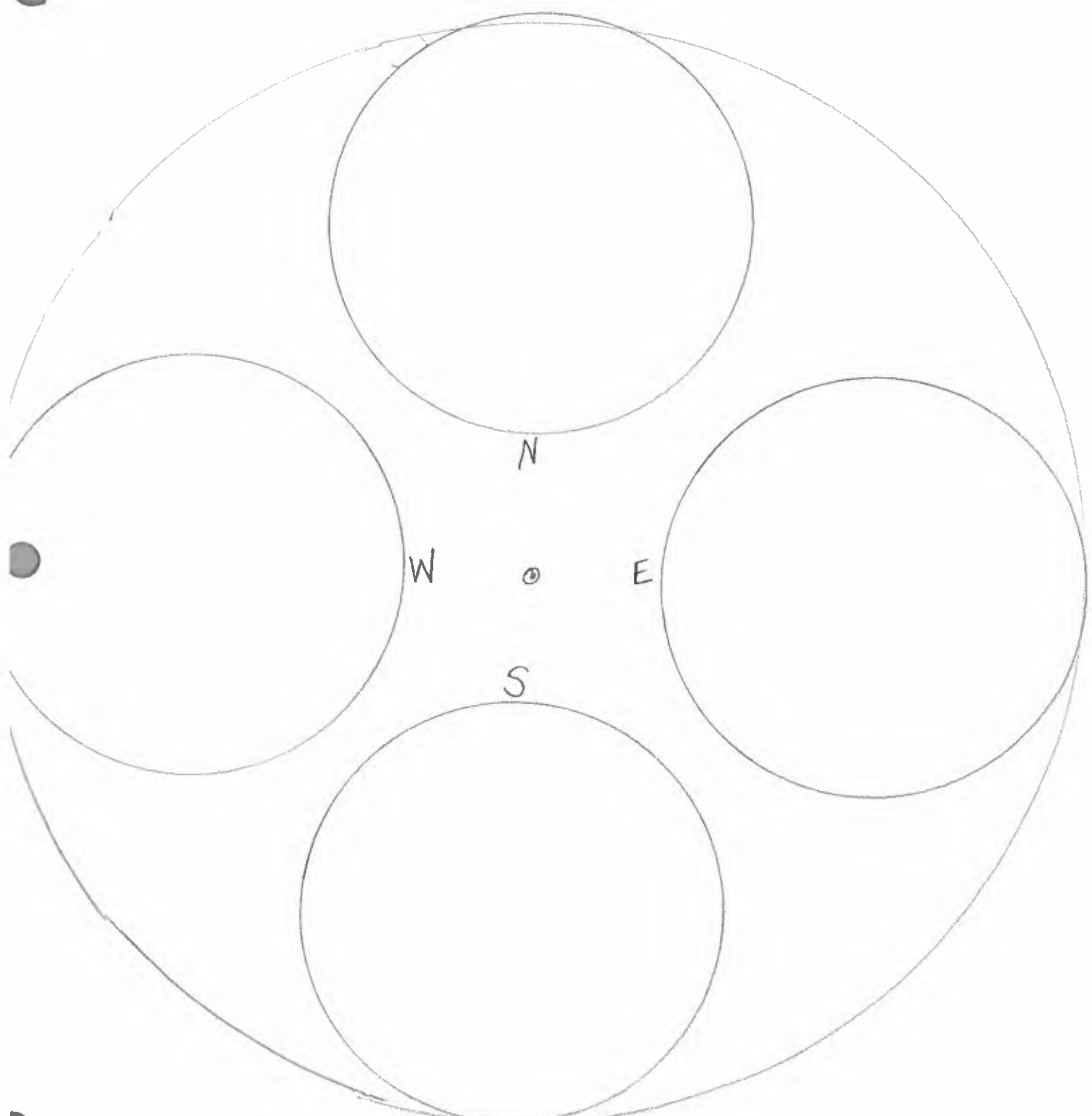
- Paper with compass rose
- Pencil
- Clipboard

Activities / Procedures:

1. Walk students to the schoolhouse area of the Living Classroom.
2. As each student stands in the walkway in front of the schoolhouse they locate North, South, East, and West by looking forward for North, left for West, right for East, and behind for South.
3. Students will draw a picture on the worksheet showing what they see in that area.

Evaluation / Assessment:

- Compass rose worksheet



Draw a picture in each circle showing what you see in the Living Classroom.

Subject / Topic of Study: Social Studies
Comparison of Colonial Family Responsibilities
with Modern Family Responsibilities

Grade Level: 1

Time Considerations: 45 minutes

Purpose / Objectives:

SS.1.2 Describes the roles and responsibilities of members of various family units.

SS.1.9 Describes how division of labor in families help complete a task.

Materials / Resources Needed:

• Colonial Life by Bobbie Kalman

Activities / Procedure

1. Inside the Pioneer homestead, read and discuss "The Colonial Family" section of the book Colonial Life.
2. Using a Venn Diagram, teacher records ideas brainstormed by students that describe family roles and responsibilities we have now and responsibilities family members had in Colonial Times. Discuss things that are the same and things that are different.
3. Explain to students the importance of family members working together in order to live. (Fathers and sons hunt wild game for meat or harvested crops while mothers and daughters, aunts and grandmothers took care of the house, children and garden. Have them brainstorm ideas to show how families work together in modern times to complete tasks.)
4. Have students role play colonial jobs like chopping wood, feeding chickens, milking cows and modern family jobs like picking up toys, vacuum the floor, etc.

Evaluation / Assessment:

• Teacher observation

Extension / Integration Ideas:

• Students may demonstrate understanding of division of labor to complete a task by making homemade bread and butter. Students may shake cream in babyfood jars to produce butter. Teacher, parent volunteers, or 5th grade students can help first grade students prepare bread.

Subject / Topic of Study: Social Studies / Indians

Grade Level: 1

Time Considerations: 10 minute walk
20 - 30 minutes lesson

Purpose / Objectives:

H.1.24 Differentiates between safe and unsafe practices when in an outdoor environment.

SS.1.21 Identifies events as past, present, and future.

Materials / Resources Needed:

- Indian tepee area
- Indians of the Plains by Rae Bains
- Clipboard
- Paper
- Pencil

Activities / Procedures:

1. Take class to the Indian tepee area.
2. Let the class observe details about the tepee.
3. Let the class sit in the tepee.
4. Tell the tale of the tepee tradition.
 - "A beautiful tepee is like a good mother, she hugs her children to her and protects them from heat and cold, snow and rain." This Sioux proverb sums up the importance of the tepee in the Plains Indian culture.
5. Read about the Plains Indians from Indians of the Plains by Rae Bains.
6. Draw a picture of a tepee.

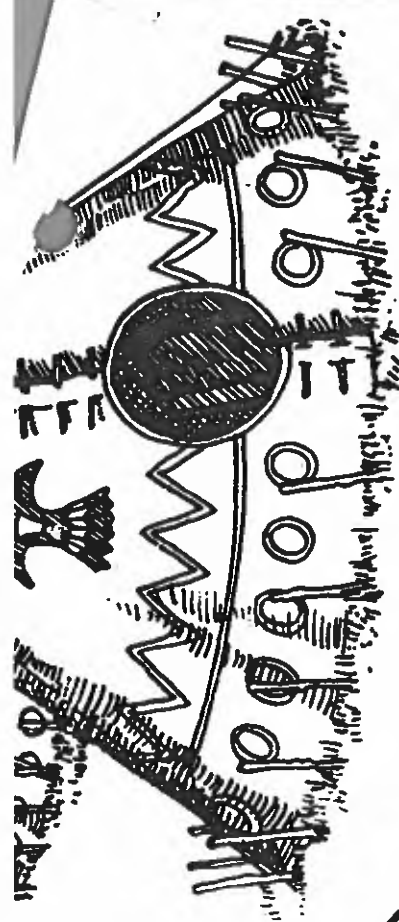
Evaluation / Assessment:

- Teacher observation
- Oral discussions and questions and answers

Extension / Integration Ideas:

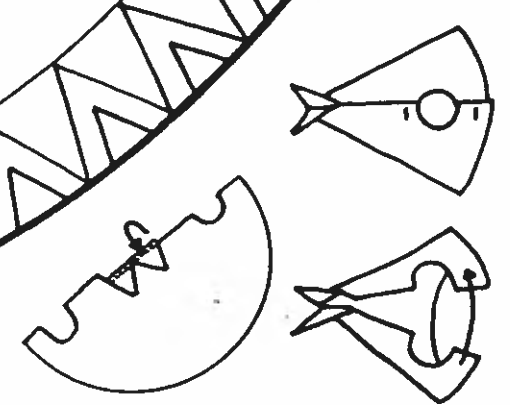
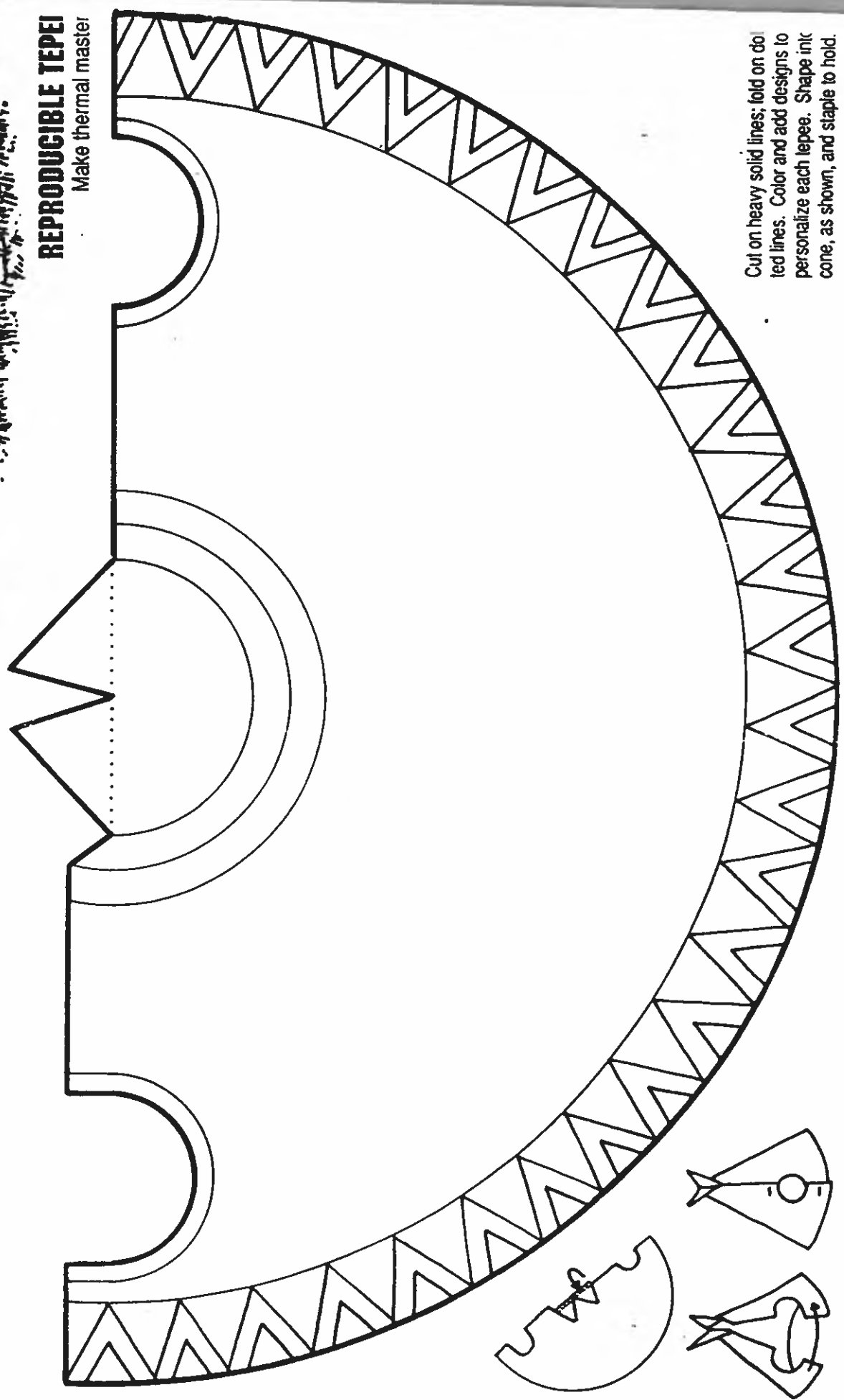
- Read The Legend of the Bluebonnet by Tomie DePaola.
- Read The Legend of the Indian Paintbrush by Tomie DePaola.

for support. When the skins were draped over the framework, a fire could be made inside a tepee, with smoke flaps at the top adjusted for air flow. The tepee was designed to be comfortable in hot summers as well as warm in the cold of winter, with the addition of an insulating dew cloth. The overall design was similar among Indian nations, but often the exterior decoration gave it distinction. Symbols were painted on the exterior to designate important tribal members such as the chief or to record a buffalo hunt or historical event. It was common to see symbols of nature (animals, mountains, lightning, sun) as well as geometric designs.



REPRODUCIBLE TEPEE

Make thermal master



Cut on heavy solid lines; fold on dotted lines. Color and add designs to personalize each tepee. Shape into cone, as shown, and staple to hold.

Subject / Topic of Study: Social Studies - Map Skills

Grade Level: 1

Time Consideration: 30 minute walk
30 minutes classroom

Purpose / Objectives:

SS.1.13 Describes purpose of a map key.

SS.1.14 Identifies pictorial symbols on maps such as symbols for house, school, church, and road and non pictorial symbols.

SS.1.15 Recognizes physical characteristics.

Materials / Resources Needed:

- White drawing paper
- Crayons

Activities / Procedures:

1. Take students from the entrance of the Nature Trail in the Living Classroom to another area of the trail such as the well, apple orchard, or reflection pond.
2. Discuss how the class got there and what was seen. Tell students that they will need to recall at least five things to put into a map key.
3. Back in the classroom have students brainstorm what they saw.
4. Allow students to create a map of the path they took and create a map key of at least five items.

Evaluation / Assessment:

- Assess map key and location of items on the map. Check for accuracy of the map.

Extension / Integration Ideas:

- Take clipboards and paper along on the nature walk and allow students to draw the map as they go.

Subject / Topic of Study: Science / Seeds

Grade Level: 1

Time Considerations: 45 minutes

Purpose / Objectives:

S.1.1 Asks questions, sorts and classifies objects, communicates with others and makes sketches or diagrams to explain ideas.

S.1.4 Actively engages in learning process via hands-on/minds-on science activities and experiences.

LA.1.34 Writes a minimum of three sentences about a topic.

Materials / Resources Needed:

- The Reason for a Flower by Ruth Heller
- A sock for each student large enough to slide over student's shoes
- A piece of paper
- An egg carton
- A magnifying glass

Activities / Procedures:

1. Read aloud and discuss The Reason for a Flower by Ruth Heller. Discuss ways seeds travel.
2. Have students place a sock over one shoe and go for a walk in the Living Classroom. Return to the classroom and remove sock and shake it over a piece of paper. Have students sort seeds. Examine seeds under a magnifying glass to see what makes the seeds stick.
3. Have students glue or tape one seed from their collection onto a sheet of paper and write and illustrate a story from the seed's point of view. They could write about where their journey began, things they saw on the way, and how they think their journey will end.

Evaluation / Assessment:

- Teacher observation
- Checklist

Extension / Integration Ideas:

- Allow students to plant some of the seeds to see what grows.
- Put seed-covered socks over popsicle sticks stuck in the ground in the Living Classroom. Watch to see which seeds are taken by animals.

Subject / Topic of Study: Science

Grade Level: 1

Time Considerations: 30 minutes

Purpose / Objectives:

- S.1.1 Asks questions, makes and keeps simple records of observations, sorts and classifies objects, communicates with others, makes predictions, uses estimating and measurement, and makes sketches and diagrams to explain ideas.
- S.1.2 Uses books and other media to obtain information related to science concepts.

Materials/Resources Needed:

- Large cookie pans
- Dirt
- Food scraps; cookies, lettuce
- Magnifying glass, ruler
- Nature in Your Backyard by Susan Lang

Activities/Procedures:

1. Fill pan with dirt. Moisten dirt.
2. Put different food scraps in each pan.
3. Place pans at different locations in the Living Classroom.
4. Check pans the next day for animal footprints. Have students measure length and width of footprints and draw general shape of footprint.
5. Ask students to guess the animal that made the footprint.
6. Then return to the classroom and use resource books to identify the footprints.

Evaluation / Assessment:

Teacher observation.

Extension / Integration Ideas:

Compare footprints found in different areas. Have students brainstorm reasons animals were in a specific area.

Subject / Topic of Study: Science / Grasshopper

Grade Level: 1

Time Considerations: 20 minute walk
30 minutes class time
(for each of 3 days)

Purpose / Objectives:

H.1.24 Differentiates between safe and unsafe practices when in an outdoor environment.

S.1.3 Identifies and practices accepted safety procedures in manipulating science materials and equipment.

Materials / Resources Needed:

- Book: The Grasshopper (Media Center 595.7 Has)
- Story: See attached page "Hoppy the Grasshopper"
- Bug jar •Journal
- Writing paper •Construction paper
- Pencil

Activities / Procedures:

Day 1

1. Go for a walk to the Butterfly Garden and surrounding area.
2. Locate a grasshopper and catch it in the bug jar. Observe and record in journal.
3. Read The Grasshopper and discuss habitat, grasshopper development, and eating habits.

Day 2

4. Read "Hoppy the Grasshopper" and discuss feelings.
5. Write a story ending. Tell what Hoppy did after he got out of the jar.
6. Release the grasshopper outside.

Day 3

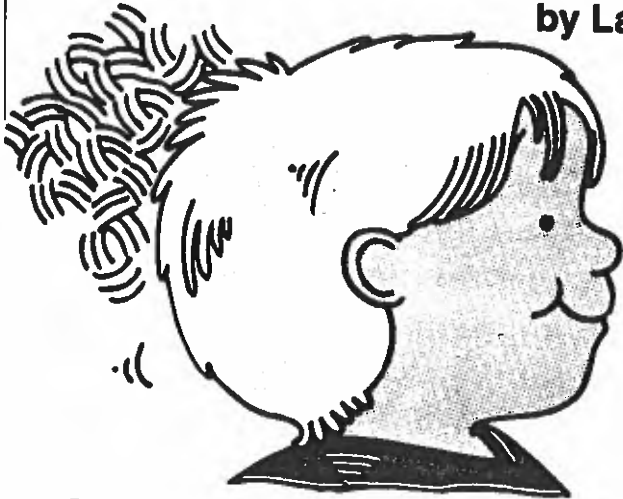
7. Make an accordion style grasshopper booklet.
Write facts or a story about grasshoppers.

Evaluation / Assessment:

- Teacher observation •Journal Writing •Grasshopper

Hoppy the Grasshopper

by Laura Lynne Corp



Once upon a time there was a grasshopper named Hoppy. Hoppy liked to hop in the grass, nibble on leaves and just enjoy the sunshine. Hoppy was a happy grasshopper.

One summer day, Hoppy was playing in the grass, hopping to his heart's content. All of a sudden, he heard a loud noise, the sound of footsteps walking through the grass. Hoppy looked up and saw a young boy whose name was Brandon. Brandon walked toward Hoppy and this made Hoppy afraid. Hoppy had never seen a person before. Brandon had a jar in his hand and he wanted to catch Hoppy and keep him as a pet. Hoppy started to hop away, but Brandon was faster. Before Hoppy knew what had happened, Brandon had caught him and put him in the jar!

Hoppy was confused. He kept hopping around the jar trying to get out. Hoppy could see out but he could not get out. Poor Hoppy just kept bumping into the glass.

In the meantime, Brandon walked to

his house with his new pet grasshopper.

Hoppy was so sad, he knew that he could not get out of the jar. He missed his freedom, hopping in the grass, and feeling the sunshine on his back.

When Brandon reached his home he took Hoppy into his room. Brandon wanted Hoppy to feel at home, so he put some grass and leaves in the jar. But Hoppy was not happy and he did not feel at home. He sat alone in the jar, wondering how he could get back to the big grass and be free again.

Brandon said to Hoppy, "Hi, you are going to be my new pet."

Hoppy just looked at Brandon wishing that he could tell him that he did not want to be a pet and live in a jar. But grasshoppers can't talk, so what could Hoppy do? Then it occurred to him that since he was so sad, he could cry, and maybe if he cried, the boy would notice how sad he was and let him go.

So Hoppy began to cry. Brandon looked into the jar and he saw that Hoppy was crying. This really surprised

Brandon. He had never heard of a grasshopper crying.

Brandon called out, "Mom, please come here and look at my pet grasshopper. It looks like he is crying."

Brandon's mom came in the room and looked at Hoppy and saw that he really was crying.

Brandon was upset about this and asked his mom, "What is the matter with him? Why does he cry?"

Brandon's mom answered, "Grasshoppers are wild creatures. He is used to being free and hopping in the big grass. Now he is stuck inside that jar, away from his friends and the big grass. That is why he is crying."

Brandon said, "But Mom, I gave him a big jar so he would have lots of room and I put some grass and leaves in the jar."

Brandon's mom tried to explain. "Brandon, it's not the same. He is used to being free. He knows no other way. Let me give you an example. What if you were stuck in a room with windows and some food, and you could only look outside but not go outside. Wouldn't that make you sad?"

Brandon looked at Hoppy and thought about what his mother had said. He could tell that Hoppy was sad.

Brandon said, "You are right. I will take him outside and let him go, and then he won't be sad anymore."

Brandon carried Hoppy outside and took the lid off the jar.

He said to Hoppy, "Okay, grasshopper, you are free to go and be happy in the big grass."

Hoppy jumped out of the jar and landed on Brandon's arm. Brandon saw that the tears were gone from Hoppy's eyes and this made him happy. Hoppy remained on Brandon's arm, and they smiled at each other. Hoppy was happy to be free and Brandon was happy because he had learned a good lesson, and also because he had made Hoppy happy.

Hoppy lifted his front leg and waved it to tell Brandon, "Thank you and good-bye." He then jumped off Brandon's arm and landed in the big grass, happy and free.



Subject / Topic of Study: Science / Magnets
Magnet Scavenger Hunt

Grade Level: 1

Time Considerations: 45 minutes

Purpose / Objectives:

- S.1.8 Differentiates between and identifies objects attracted by a magnet and those not attracted by a magnet.
- S.1.9 Shows the ability of magnets to attract and repel, and to do so through other materials.
- S.1.10 Predicts whether different materials will be attracted or repelled by a magnet, based on results of attraction and repulsion activities.

Materials / Resources Needed:

- One magnet for each team
- Magnetic materials
- Science Secrets: Magnets by Jason Cooper
- Chart tablet

Activities / Procedures:

1. Read and discuss Science Secrets: Magnets.
2. Pass out Magnet Kit from Media Center. Divide students into groups of three and have them experiment with objects to determine which are attracted by magnets. Teacher lists on chart tablet items identified by students that are magnetic. Then have students test to see which objects are attracted to the magnet through a paper cup, desk, etc.
3. Before taking students into the Living Classroom, hide objects that magnets attract in each S.U.N. Center.
4. Working in small groups, designate a S.U.N. Center for each group to explore with magnets in search of magnetic items previously hidden by teacher. Students can be supervised by a support teacher or parent volunteer.
5. Reassemble at Octagonal S.U.N. Center to "Show and Tell" items found. Be sure all items hidden are accounted for. Students should describe some items attracted through leaves or small trees.

Evaluation / Assessment:

- Teacher observation checklist

Extension / Integration Ideas:

- Discuss the magnet Earth, and how Earth's magnetic pull makes the magnetic needle of a compass line up north and south.

Subject / Topic of Study: Science: Bird Feeders

Grade Level: 1

Time Considerations: 30 minutes (Daily Record Results)

Purpose / Objectives:

S.1.1. Asks questions, makes and keeps simple records of observations.

LA.1.33 Uses learned phonetic strategies to spell correctly.

Materials / Resources Needed:

- Pine cones
- Peanut butter
- Bird seed
- Yarn

Activities / Procedures:

1. Take children out to the living classroom and collect a pine cone for each student.
2. Choose an area in the grass for the children to sit down and put peanut butter on the pine cones. Then roll the pine cones in bird seed.
3. Tie yarn to the pine cone and tag yarn with child's name.
4. Take the bird feeders out to the Living Classroom nature trails and hang up the pine cone bird feeders in an area close together.
5. Take students out to record how much has been eaten off their feeder (daily).

Evaluation / Assessment:

- Teacher will assess record sheet

Extension / Integration Ideas:

Bird stories from 1st Grade Literature Series:

- Flap Your Wings and Try
- Six Little Ducks
- The Chick and the Duckling
- Baby Chick

Subject / Topic of Study: Science - Simple Machines

Grade Level: 1

Time Consideration: 30 minutes in the Living Classroom
30 minutes in the classroom

Purpose / Objectives:

- Discusses how machines help people (move, work).
- Recognizes tasks which are helped by using simple machines.

S.1.4 Actively engages in the learning process via hands-on/minds-on science activities and experiences. Uses appropriate tools to collect and analyze data and solve problems.

Materials / Resources Needed:

- Rope
- Wheel
- Bucket

Activities / Procedures:

1. Take students to the well in the Living Classroom. Use the pulley to get water from the well and discuss how it is used and why it is needed.
2. In the classroom, create a pulley using the rope, wheel, and bucket.
3. Discuss how we could use a pulley in everyday work.

Evaluation / Assessment:

- Students will be able to find a pulley in use in pictures and discuss how it moves and helps in work.

Extension / Integration Ideas:

- Students can create a pulley at home and discuss how it helps.

Subject / Topic of Study: Science / Caterpillar Investigations

Grade Level: 1

Time Considerations: 45 minutes

Purpose / Objectives:

- S.1.11 Compares and describes different animals in the ways they look, grow and move.
- S.1.12 Identifies groups of animals that have similar characteristics and names these characteristics.
- S.1.13 Describes and compares characteristics of animals that enhance survival.

Materials / Resources Needed:

- Several caterpillars
- Plastic jars or see through container
- Magnifying glass
- Drawing paper
- Crayons
- Markers

Activities / Procedures:

1. Divide class into small groups.
2. Take class on trip for caterpillar hunt. (Have some on hand in case group doesn't find one.) Tell students to put caterpillars in jars and return to classroom to make and record observations.
3. Group members may make observations, but each student must complete a picture of the caterpillar.
4. Instruct students to draw the caterpillar. Label the head. Draw the exact same number of legs on the insect. Tell students to draw any hairs, spines, dots or stripes seen on their insect. Color the picture.
5. When finished have groups describe their caterpillar (# of legs, # of body segments).
6. Have groups look through field guides to try to identify their caterpillars. students should be able to determine if their caterpillar will become a moth or butterfly.
7. Release caterpillars in Living Classroom.

Evaluation / Assessment:

- Teacher observation
- Drawings

Extension / Integration Ideas:

- Art:* Make pom-pom worms using wiggle eyes and magnetic tape. Glue pom-poms together. Attach wiggle eyes. Attach magnetic strip to each worm. Use magnetic worms to make math addition/subtraction number sentences.

Subject / Topic of Study: Science / Weather: Rainy Day

Grade Level: 1

Time Considerations: 10 minutes outside bus area
25 minutes class time

Purpose / Objectives:

H.1.24 Differentiates between safe and unsafe practices when in an outdoor environment.

S.1.1 Asks questions, makes and keeps simple records of observations, sorts and classifies objects, communicates with others, makes predictions, uses estimation and measurement and makes sketches and diagrams to explain ideas.

Materials / Resources Needed:

- Large lids
- Flour
- Rain drops
- Eyedropper
- Water/rain
- Journals

Activities / Procedures:

1. On a rainy day, put a small amount of flour in a lid.
2. Go outside and hold the lid in the rain for a few minutes.
3. Observe the size of the flour balls made by the raindrops.
4. Count the number and record in the journals.
5. Use an eyedropper with water to make "raindrops" in flour lids. Compare to the real rain drops. Compare the sizes. Record outcomes in journals.

Evaluation / Assessment:

- Completed journals
- Student participation

Subject / Topic of Study: Science / Animal Tracks

Grade Level: 1

Time Considerations: 30 minutes

Purpose / Objectives:

- S.1.1 Asks questions, makes and keeps simple records of observations, sorts and classifies objects, communicates with others, makes predictions, uses estimating and measurement, and makes sketches and diagrams to explain ideas.
- S.1.2 Uses books and other media to obtain information related to science concepts.

Materials / Resources Needed:

- Large cookie pans
- Dirt
- Food scraps
- Cookies
- Lettuce
- Magnifying glass
- Ruler
- Nature in Your Backyard by Susan Lang

Activities / Procedures:

1. Fill pan with dirt. Moisten dirt.
2. Put different food scraps in each pan.
3. Place pans at different locations in the Living Classroom.
4. Check pans the next day for animal footprints. Have students measure length and width of footprints and draw general shape of footprint.
5. Ask students to guess the animal that made the footprint.
6. Then return to the classroom and use resource books to identify the footprints.

Evaluation / Assessment:

- Teacher observation.

Extension / Integration Ideas:

- Compare footprints found in different areas. Have students brainstorm reasons animals were in a specific area.

Subject / Topic of Study: Science: Fall Leaves

Grade Level: 1

Time Considerations: 20 minute walk / 3 day lesson

Purpose / Objectives:

H.1.24 Differentiates between safe and unsafe practices when in an outdoor environment.

S.1.1 Asks questions, makes and keeps simple records of observations, sorts and classifies objects, communicates with others, makes predictions, uses estimation and measurement and makes sketches and diagrams to explain ideas.

Materials / Resources Needed:

- Leaves found on the Nature Trail in the Living Classroom
- Magnifying glass
- Paste
- Poster board
- Booklet

Activities / Procedures:

Day One

1. Students explore the many facets of leaves.
2. Go for a walk to collect leaves from the ground and not from a tree. Collect 2 or 3 different sizes, shapes and colors.
3. Sort the leaves according to size, shape and color and paste them on large charts.
4. Share ideas about what they can find out about the leaves.

Day Two

1. Provide magnifying glasses to observe the leaves. Have students draw a picture of what they see. Record observations by the group.

Day Three

1. Measure the leaves and record these measurements in the student booklet. Observe changes occurring while the leaves are drying.

Evaluation / Assessment:

- Completed chart with leaves

Subject / Topic of Study: Science

Grade Level: 1

Time Consideration: Ongoing activity

Purpose / Objectives:

To observe and describe plant parts as they grow and change. Parts: leaf, root, stem, seed, and flower.

S.1.1 Asks questions, makes and keeps simple records of observations, sorts and classifies objects, communicates with others, makes predictions, uses estimation and measurement, and makes sketches and diagrams to explain ideas.

Materials / Resources Needed:

- Sunflower seeds
- Cotton balls
- Baggies
- Gardening tools
- Library books
- Resource books

Activities / Procedures:

1. Give each student a sunflower seed, a cotton ball, and a baggie. Have the students moisten their cotton balls and place everything in the baggie, allowing the seed to germinate.
2. Transplant each seed into a paper cup and soil.
3. After a short period of growth, plant each seedling in the flower garden.

Evaluation / Assessment:

- Label and diagram plants correctly at different stages of growth.

Extension / Integration Ideas:

- Observe other plants and identify their parts on a nature walk in the Living Classroom.

Subject / Topic of Study: Science / Sounds

Grade Level: 1

Time Considerations: 45 minutes

Purpose / Objectives:

S.1.6 Compares and explores sounds made by different musical instruments.

Materials / Resources Needed:

- Talk About Sounds by F. Watts

Activities / Procedures:

1. Read and discuss Talk About Sound by F. Watts.
2. Discuss how sounds are made.
3. Listen to a cassette demonstrating sounds made by various instruments (trumpet, drums, tambourine, etc.). Remind students that different animals make different sounds also, and to listen while walking on the Living Classroom Nature Trail.
4. Take students for a hike in the Living Classroom. Instruct them to collect various objects from the ground that could be used to make musical instruments (e.g. nuts, rocks for shakers, tree cookies or small hollow logs for drums, etc.).
5. Using materials gathered in the Living Classroom, guide students in making sound shakers (use materials gathered, and cups, pie tins, or toilet paper rolls to make drums, bells, etc.)
6. When instruments are finished, have students "play" instruments and compare the different sounds they make.

Evaluation / Assessment:

- Teacher observation
- Completed Instrument

Extension / Integration Ideas:

- Invite musicians (high school students or students at your school who play) to play instruments in amphitheater. Students should compare different sounds.

Subject / Topic of Study: Science

Grade Level: 1

Time Considerations: 30 minute walk
30 minutes classroom

Purpose / Objectives:

S.1.13 Describes and compares characteristics of different animals such as coloration that enhance survival. Concept: features that help them thrive in places.

Materials / Resources Needed:

- Baggies
- Big Book: Birds' Nests by Eileen Curran

Activities/Procedures:

1. Look at real nests, read about how birds make nests and materials birds use to make nests.
2. Take students to the Living Classroom and allow students to collect natural items to make a nest.
3. You may want to partner up so more hands can be building.
4. Compare finished products to actual bird nests.

Evaluation / Assessment:

- Teacher observation

Extension / Integration Ideas:

- Have students draw pictures of different nests and the birds that build them.

Source:

Bird's Nests, Troll, 1985.

Subject / Topic of Study: Science / Art (seeds and pine cones)
"Know Your Cones and Nature's People"

Grade Level: 1

Time Considerations: 45 minutes

Purpose / Objectives:

S.1.4 Actively engages in the learning process via hands on/minds on science activities and experiences. Uses materials appropriately to analyze data and solve problems.

FAVA1.3 Uses a variety of art materials to model, construct and compose original art works.

FAVA.1.15 Distinguishes between natural objects and objects made by people.

Materials / Resources Needed:

- Nail file
- Magnifying glass
- Pine cones
- Assorted nuts
- Living Classroom
- Small felt pieces
- Glue
- Scissors
- Pen

Activities / Procedures:

1. From the ground of the Living Classroom, students will each find one pine cone, some nuts, seeds, etc.
2. Instruct students to examine the pine cones carefully. Point out the fact that overlapping scales make up the pine cone. The scales protect the seeds underneath. As the seeds mature, the scales open up and the seeds fall out.
3. Using a nail file, carefully pry one scale open. Use a magnifying glass to look for the seed. Put the cone in a warm corner of the classroom and observe changes each day. Students may write about daily changes in a journal.
4. Post directions for students to read and follow to make pine cone people.
 - Glue one acorn on top of a pine cone.
 - Use a felt tip pen to add eyes, nose and mouth
 - Add scarves, hats, cloaks, or whatever the student likes
 - Display Nature's People in a sand box.

Evaluation / Assessment:

- Teacher observation
- Completed Art Project

Extension / Integration Ideas:

- Use pine cones to make Christmas decorations
- Use pine cone people for math activities; short, shorter and shortest; grouping into sets; adding and subtracting

Subject / Topic of Study: Science / Art: Spiders

Grade Level: 1

Time Considerations: 30 minute nature walk
30 minute art activity

Purpose / Objectives:

S.1.4 Actively engages in the learning process via hands on/minds on science activities and experiences. Uses materials appropriately to analyze data and solve problems.

FAVA1.3 Uses a variety of art materials to model, construct and compose original art works.

Materials / Resources Needed:

- Magnifying glasses
- Living Classroom
- Construction paper
- Glue
- Glitter
- Wax Paper

Activities / Procedures:

1. Go over all SAFETY PRECAUTIONS.
2. Take students for a hike along the trail of the Living Classroom.
3. Tell students to look for spiders or webs, using hand-held magnifying glasses. Remind students to check among tree trunks, between limbs and trunks, etc.
4. Students should not pick up spiders, but should look closely, using their magnifying glass. Have them draw their spider in detail.
5. Have one student gently touch an outside thread of the web. The spider will come out of hiding when the web is touched.
6. Once the spider returns to its hiding place, toss a few blades of grass into the web. The spider should rush out to see what was caught. It will then clean out and repair the web.
7. Upon returning to the classroom, have students make shining spider webs using glitter, wax paper, and glue. Direct them in creating a small spider to attach to their web.
8. Have students write about what they saw in the Living Classroom.

Evaluation / Assessment:

- Teacher observation

Extension / Integration Ideas:

- Brainstorm "sp" words. Write along threads of a spider web.
- Make a word web. Write spider in the middle. Then list as students brainstorm descriptive words, words that tell what spiders do, and words that name things they eat.

Subject / Topic of Study: Science / Drama

Grade Level: 1

Time Considerations: 1 hour

Purpose / Objectives:

- S 1.1 Asks questions, makes/keeps simple records of observations, communicates with others, makes predictions, uses estimation and measurement.
- S 1.11 Compares and describes different animals in the ways they look, grow and move.
- FATA.17 Uses movement to communicate thought, feeling and role.

Materials / Resources Needed:

- Where Butterflies Grow by Joanne Ryder
- Paper plate
- Cotton balls
- Glue
- Cassette (music for dance)
- Pipe cleaners
- Rice
- Ink stamp pad

Activities / Procedures:

1. Teacher reads story Where Butterflies Grow to Students. The teacher records on chart the brainstorming list of places butterflies grow (as told in story), and a list of butterfly behaviors.
2. Take an after lunch walk through the Butterfly Garden to observe butterfly behavior and to look for evidence of butterflies.
3. Return to classroom. Have students create and perform a dance about butterfly behavior. Ask students to visualize some kind of butterfly behavior: a butterfly basking in the morning sun until it's warm enough to fly, a butterfly landing on a flower and sipping nectar, a butterfly in flight escaping a predator, etc. Teacher may ask students to play charades with other students guessing the butterfly behavior being modeled.
4. Have students make a wheel showing the stages of butterfly development. Divide a paper plate into fourths. In one section glue rice to represent eggs. On another use full pipe cleaners to show caterpillars. In another section wrap cotton balls around caterpillars (pipe cleaners) and glue. In fourth section, paint a butterfly using thumb prints.

Evaluation / Assessment:

- Teacher observation checklist
- Completed art project- wheel that shows developmental stages.

Extension / Integration Ideas:

Have a butterfly party featuring nectar punch and butterfly cake:

- *Nectar punch:* Mix 1 can (46 oz) of unsweetened pineapple juice, one 46 oz can of fruit punch, and one 2 liter bottle of ginger ale.
- *Flower cups:* Using construction paper, have each child draw a flower design large enough to fit over his/her drinking cup. Cut a small hole in the middle of the flower and insert a drinking straw. Place the flower over the drinking cup filled with nectar punch.
- *Serve a butterfly shaped cake.*

Subject / Topic of Study: Science/Language Arts

Grade Level: 1

Time Considerations: 30 minutes daily for 6 days

Purpose / Objectives:

- S1.1 Asks questions, makes and keeps simple records of observations, sorts and classifies objects, communicates with others, makes predictions, uses estimation and measurement, and makes sketches and diagrams to explain ideas.
- S 1.2 Uses books and other media to obtain information related to science concepts.
- S 1.3 Practices accepted safety procedures in manipulating science materials and equipment.
- S 1.4 Actively engages in the learning process via hands-on/ minds-on science activities and experiences.
- S 1.11 Compares/describes different animals in the ways they look, grow and move.
- LA 1.25 Draws conclusions and makes predictions and comparisons.
- LA 1.26 Reads for understanding and rereads for clarification, self-correction, and further comprehension.
- LA 1.27 Demonstrates comprehension when reading a variety of literary forms (fiction, non-fiction).
- LA 1.43 Discriminates between realism and fantasy.

Materials / Resources Needed:

- Jump, Frog, Jump by Robert Kalan (big book: 6 small book set, cassette)
- "Frogs" from Together We Go (informational story)
- Underwater viewer
- Collecting jars

Activities / Procedures:

Day One

1. Class will visit the Reflecting Pond in late Spring. Using the underwater viewer, students will observe animal life in pond. With teacher's help, students scoop samples from pond to put in collecting jars. Hopefully, tadpoles in different stages of development will be present in sample. Students discuss likeness and difference after observing tadpoles.

Day Two

2. Class observes and records changes in tadpoles daily. Whole group reads "Frogs," which is an informational story. Discuss changes. Have students make a viewing wheel to show developmental sequence.

Day Three

3. Introduce vocabulary and story setting in big book Jump, Frog, Jump by Robert Kalan. Teacher reads as students chime in. Discuss difference between "real" story read on Day 2 and "make-believe" story read today. Make a class chart or Venn Diagram to compare and contrast two stories.

Day Four

4. Divide students into groups, Have one group read big book along with cassette recording. Have other group partner read story using class collection (6 books). Switch groups. Then, as a whole group, have students brainstorm the names of creatures and things they tried to catch. List responses on chart. Reread chart.

Day Five

5. Students may read story as a dramatization. Class may develop other characters to add to the story. Have students make word webs to contrast real frog from make-believe frog. Writing activity- Supply sentence pattern. Have students insert words to create new versions of story.

This is the _____ that _____.

This is the _____ that was _____ the _____ that _____.

Day Six

6. Students read Sea Frog, City Frog and compare/contrast it with Jump, Frog, Jump.

Evaluation / Assessment:

- Teacher observation for student participation.
- Evaluation of complete projects.

Extension / Integration Ideas:

- Read aloud Frog in the Middle by Susanna Getz. As a story extender, provide students with bean bags and play "Frog in the Middle." Divide students into groups of 3. Designate 1 person to be the frog, 1 to be the duck, and 1 to be the rabbit. The rabbits and ducks toss beanbags to each other as frogs leap into the air trying to catch the beanbags. Allow students to change roles and play again.
- Paper plate frogs- Students sponge paint the outside of a paper plate, Cut legs and eyes from pattern.
- Have students pretend they are frogs on a lily pad in the Reflecting Pond. Have them draw everything they might see.

Note: See vertical file in library for reproducibles that address grade appropriate skills. (Ex. number words, opposites, sentence punctuation, frog, lily pad and math activities.)

Subject / Topic of Study: Science / Language Arts

Grade Level: 1

Time Considerations: 30 minutes each day

Purpose / Objectives:

S.1.1 Asks questions, makes and keeps simple records of observations, sorts and classifies objects, communicates with others, makes predictions, uses estimation and measurement, and makes sketches and diagrams to explain ideas.

Materials / Resources Needed:

- Magnifying glass
- Small trowel
- Collecting jar
- A notebook, pencil

Activities / Procedures:

1. Divide students into teams (2-3).
2. Have each team locate, measure, and stake a 1 foot square of soil to explore and observe for a week or more. Use a twig to outline the square foot space.
3. Each day the students work in their square, have them record in their journal the date, time and weather, and any changes in the area (footprints, nuts left by squirrels, etc.).

Journal Ideas

- Have students draw any insect or animal observed in their space. Ask them to note what each animal is doing, eating or where it is hiding. Draw pictures to show spiders spinning webs or caterpillars nibbling leaves.
- Have students sit in their square and close their eyes. Ask "What sounds do you hear? What do you smell? Sounds and smells are clues to which birds are visiting, if the wind is blowing or if the soil is wet. After opening their eyes, have students write about the sounds or smells.
- Have students list all the things they see in their square; soil, leaves, ants, insects, litter, etc.
- Have students leave a piece of meat, a piece of lettuce and some sugar water in their area. The next day have them observe and record any new insects. If none are present, but the food is gone, have them guess (brainstorm) ideas about what may have happened to the food.

Evaluation / Assessment:

- Assess journals

Extension / Integration Ideas:

- Have students create an imaginary critter that might live in their square.
- Make edible insects - "Bug Salad"
 - Place one peach half on a lettuce-lined plate.
 - Attach raisin eyes, maraschino cherry mouth, chow mein noodle antennae with dabs of cream cheese.
 - Put carrot curl legs around peach.

Subject / Topic of Study: Science / Language Arts

Grade Level: 1

Time Consideration: 20 minutes daily

Purpose / Objectives:

- S.1.1 Asks questions, makes and keeps simple records of observation, communicates with others, makes predictions, uses estimation and measurement, and makes sketches and diagrams to explain ideas.
- S.1.4 Actively engages in the learning process via hands-on / minds-on activities and experiences. Uses appropriate tools to collect and analyze data and solve problems.
- M.1.18 Tells time to the hour and half hour.
- M.1.11 Selects appropriate instrument for determining specified measurement of height, weight, capacity, and temperature.
- S.1.18 Makes observations using simple weather-related instruments. Measures weather characteristics using thermometers, weather vanes, and rain gauges.
- S.1.17 Constructs weather charts showing daily temperatures, changes, precipitation, cloud cover, during different seasons.

Materials / Resources Needed:

- Clipboards
- Pencils
- Data sheets
- Outdoor thermometer

Activities / Procedures:

1. Each day for five consecutive days, students walk through the Butterfly Garden and record: time of day, weather (cloudy, sunny, rainy, cold, hot, etc.), temperature, and amount of rainfall.
2. Call the group back together and discuss observations.

Evaluation / Assessment:

- Teacher observation of students working in groups, choosing correct instruments to measure and record.
- Completed data record

Extension / Integration Ideas:

- Have students draw or write about walks.
- Have students make predictions about weather.
- Make this a seasonal activity and compare the differences.

Data Chart

Time



Monday: _____
Tuesday: _____
Wednesday: _____
Thursday: _____
Friday: _____

Weather



Monday: _____
Tuesday: _____
Wednesday: _____
Thursday: _____
Friday: _____

Temperature



Monday: _____
Tuesday: _____
Wednesday: _____
Thursday: _____
Friday: _____

Rainfall



Monday: _____
Tuesday: _____
Wednesday: _____
Thursday: _____
Friday: _____

Subject / Topic of Study: Science / Language Arts - Syllables

Grade Level: 1

Time Consideration: 20 minutes Living Classroom, 20 minutes classroom

Purpose / Objectives:

H.1.24 Differentiates between safe and unsafe practices when in an outdoor environment.

LA.1.11 Divides words into syllables.

Materials / Resources Needed:

- Paper
- Pencil
- Clipboard
- Octagon Sun Center #3

Activities / Procedures:

1. Take the class for a walk on the nature trail in the Living Classroom. Have the students make observations around the Reflection Pond, well, Homestead, Schoolhouse, or any other developed area.
2. Have students write a list of words describing the area.
3. Divide the words into syllables and make syllable lists.

Evaluation / Assessment:

- Teacher observation
- Completed syllable lists

Extension / Integration Ideas:

- Make a list of indoor classroom words and divide into syllables. Compare the indoor and outdoor syllable lists.

Subject / Topic of Study: Science / Safety - Plants

Grade Level: 1

Time Consideration: 30 minutes in the Living Classroom
30 minutes in the classroom

Purpose / Objectives:

To distinguish between poisonous plants and plants that you can eat.

S.1.3 Identifies and practices safety procedures in manipulating science materials and equipment.

Materials / Resources Needed:

- Nature trail in the Living Classroom with labeled plants
- Outdoor vegetable garden
- Encyclopedia Encarta on computer
- Magazines
- Scissors

Activities / Procedures:

1. Talk to the students about the dangers of unknown plants as well as known plants that are poisonous.
2. Go on a nature walk in the Living Classroom and point out poisonous and unknown plants.
3. Take students to view the vegetable garden and talk about how these plants are grown from seeds and are made for human consumption. Tell students the reasons that people need plants to live.
4. In the classroom, brainstorm dangerous or unknown plants and edible plants.
5. Have students cut out magazine pictures of both and categorize.

Evaluation / Assessment:

- Student labeling of plants that you can eat versus ones you cannot.

Extension / Integration Ideas:

- Make an edible garden salad.

Subject / Topic of Study: Math - Sorting

Grade Level: 1

Time Consideration: 30 minute walk
30 minutes classroom

Purpose / Objectives:

M.1.33 Organizes elements of sets according to characteristics such as use, size, shape.

H.1.24 Differentiates between safe and unsafe practices in the outdoor environment.

Materials / Resources Needed:

• Yarn or twine

Activities / Procedures:

1. Before the nature walk tell students that they may only bring back one item from the Living Classroom. They may change the item along the way but by the end of the walk, only one item can be brought back.
2. Back in the classroom, after the nature walk, have everyone sit in a circle and tell about the items they found.
3. Discuss how these items could be sorted. Take sorting ideas and make groups of the nature items and question them. (Which group has the most?, fewest?, Are any the same?).
4. To conclude, make a mobile of the nature items by tying them together with yarn or twine.

Evaluation / Assessment:

- Observe where student places object when sorting and questions why he/she placed it there.
- Listen to the ways of sorting and determine if response is reasonable or not.

Extension / Integration Ideas:

- Sort items and make a mobile of each sorted set and label.
- When making the mobile some items may be difficult to hang. Have students figure out how to attach these items to the mobile.

Subject / Topic of Study: Math: Measurement

Grade Level: 1

Time Consideration: 30 minute walk / 45 minutes classroom

Purpose / Objectives:

- M.1.19 Compares weight of two real objects (heavier than, lighter than) and capacity of two real containers (more than, less than) using both dry and liquid measure units, and compares the height of two real objects (shorter than, taller than).
- M.1.10 Describes, orders, and measures length using inches and centimeters.
- M.1.34 Interprets data by reading bar graphs.
- M.1.35 Constructs simple graphs using concrete objects.

Materials / Resources Needed: •Balance •Starting Object

Activities / Procedures:

1. Introduce an object to the class (pencil, shoe, book, etc.) Weigh it using the balance and then allow the class to hold the item.
2. Give students directions that on their trip to the Living Classroom they are to find one item that weighs the same as the object they were shown.
3. Take the students to the Living Classroom to find their objects.
4. After returning from the walk, have each student weigh the object and decide if it is heavier than, lighter than, or equal to the classroom object.
5. Have the students graph the results.
6. Measure the length of the objects collected and order them according to size from smallest to largest.

Evaluation / Assessment:

- Student will weigh their object on the balance with the classroom object and determine a response such as "My leaf is heavier/lighter than the shoe".
- Students will read the results of the graph and tell one fact they learned from the graph.
- Students will measure their object in centimeters and inches.

Extension / Integration Ideas:

- Activity could be done over several days by walking and collecting the item on the first day, weighing it the next day, and measuring it the last day.

Subject / Topic of Study: Math / Scavenger Hunt

Grade Level: 1

Time Considerations: 45 minutes

Purpose / Objectives:

M.1.6 Determines figures that are symmetrical when folded.

M.1.10 Describes, orders and measures length using inches and centimeters.

M.1.19 Compares weight of 2 real objects.

Materials / Resources Needed:

- Bags for collecting items

Activities / Procedures:

1. Take students for a scavenger hunt in the Living Classroom.
2. Working in small groups have students look for:
 - A medium size rock
 - 2 small pebbles that weigh about the same as the medium sized rock
 - A symmetrical leaf
 - A piece of litter
 - A stick that is naturally between 4-8 inches long and is not straight
3. Meet at octagonal S.U.N. center. Discuss items found.

Evaluation / Assessment:

- Teacher observation.

Extension / Integration Ideas:

- Have students use collected objects to create a nature collage.
- Use rocks collected for adding/subtracting manipulatives.

Subject / Topic of Study: Math / Language

Grade Level: 1

Time Considerations: 20 minute walk
30 minute classroom

Purpose / Objectives:

- H.1.24 Differentiates between safe and unsafe practices when in an outdoor environment.
- M.1.33 Organizes elements of sets according to characteristics such as size, shape.
- LA.1.3 Follows two and three part oral directions.
- LA.1.14 Classifies and categorizes words into sets and groups with common characteristics.

Materials / Resources Needed:

- Small paper bag
- Pencil and paper
- Find three objects during the walk

Activities / Procedures:

1. Each student takes a small paper bag on the walk. They are to find three items to place in their bag without showing it to anyone. Each item should be different in size, shape, color, and texture.
2. When returning to the classroom, the students give words to describe their items.
3. Make a class list on the board or chart. Put words into groups according to size, shape, color and texture. Emphasize the word *adjective*.
4. Students draw the items on the outside of the bag and use the correct words to describe them by writing the words next to the picture.
5. Students show the items to their classmates and the class makes a floor graph (size, shape, color, texture).

Evaluation / Assessment:

- Assessment of drawing
- Teacher observation

Subject / Topic of Study: Math / Language Arts - Scavenger Hunt

Grade Level: 1

Time Consideration: 20 minute walk
20 minute follow-up lesson

Purpose / Objectives:

M.1.33 Organizes elements of sets according to characteristics such as size, shape

M.1.35 Construct simple graphs using concrete objects

Materials / Resources Needed:

- Small baggie

Activities / Procedures:

1. Students brainstorm a list of small items that might be found along the trail of the Living Classroom such as acorns, leaves, twigs.
2. Tell students to locate 8 objects from the list and place in the baggie.
3. In a sun center, students sort their treasures according to common characteristics such as size, shape, color, use. Allow students to describe or name sets orally.
4. Have students place objects in rows to show graph form. Discuss fewest, most. Compare more, less.

Evaluation / Assessment:

- Teacher evaluates completed graphs to determine understanding of concepts.
- Students will orally describe graphs using words like more, less, most, fewest.

Extension / Integration Ideas:

- Use objects to make a collage

Subject / Topic of Study: Language Arts

Grade Level: 1

Time Considerations: 30 minute walk
30 minutes in classroom

Purpose / Objectives:

LA.1.31 Uses examples from literature to create individual and group stories.

LA.1.32 Uses correct spelling for frequently used sight vocabulary.

LA.1.36 Communicates ideas by using the writing process.

Materials / Resources Needed:

- Picture paper: handwriting lines on bottom and blank on top to draw picture or attach one nature item to page and complete picture around the object.
- Story: "I Went Walking" by Sue Williams from literature series

Activities / Procedures:

1. Read story and discuss pattern.
2. Take students on a walk through Living Classroom and have them find one item from the walk to bring back to the classroom.
3. Then using the same language pattern write about nature item.
Example: I went walking. What did you see?
I saw a _____ looking at me.
4. Have students read paper to the class.
5. Bind pages for a book.

Evaluation / Assessment:

- Assess student writing

Subject / Topic of Study: Language / Sentence Structure

Grade Level: 1

Time Considerations: 10 minute walk, S.U.N. Center #3 - 15 minutes

Purpose / Objectives:

H.1.24 Differentiates between safe and unsafe practices when in an outdoor environment.

LA.1.3 Follows two and three part oral directions.

LA.1.8 Uses a variety of language patterns and sentence structures.

Materials / Resources Needed:

- Paper
- Pencil
- Clipboard

Activities / Procedures:

1. Teacher writes sentence starters on the board. The class helps with these selections. Use nouns and verbs and discuss the vocabulary meanings.
Examples: The tree is _____.
Leaves are _____.
Squirrels ran _____.
Squirrels climb _____.
Birds are _____.
2. Go on a short walk through the Living Classroom. Observe surroundings and write down any observations.
3. After a short walk, the class should proceed to S.U.N. Center #3. They write endings to their sentences. The class then passes clipboards clockwise to share with their neighbors.

Evaluation / Assessment:

- Teacher review of sentences written

Subject / Topic of Study: Language Arts / Writing

Grade Level: 1

Time Considerations: 10 minute walk
50 minutes in classroom

Purpose / Objectives:

LA.1.34 Writes a minimum of three sentences about a topic.

LA.1.32 Uses correct spelling for frequently used sight vocabulary.

LA.1.33 Uses learned phonetic strategies to spell correctly.

Materials / Resources Needed:

- Things I Can Make With Leaves by Sabine Lohf
- Leaves collected on nature trail
- Art scraps
- White and handwriting paper

Activities / Procedures:

1. Read Things I Can Make With Leaves to the class.
2. Take on a nature walk to collect leaves.
3. Back in the classroom, allow students to create a picture using their leaves. Then have students write about their pictures.

Evaluation / Assessment:

- Assess writing by looking for correct spelling of sight words and correct phonetic attempts of unknown words.

Subject / Topic of Study: Reading

Grade Level: 1

Time Consideration: 30 minute outdoors
45 minutes classroom

Purpose / Objectives:

- H.1.24 Differentiates between safe and unsafe practices when in an outdoor environment.
- LA.1.25 Draws conclusions and makes predictions and comparisons.
- LA1.27 Demonstrates comprehension when reading a variety of literary forms.
- S1.11 Compares and describes different animals in the ways they look, grow, and more, such as a turtle.

Materials / Resources Needed:

- Paper
- Pencil
- Clipboard
- Jump Right In Harcourt Brace

Activities / Procedures:

1. Go to the Living Classroom and have the students observe a turtle in its habitat.
2. Return to the classroom and read "I Wish I Could Fly" by Ron Maris and "The Turtle Who Talked Too Much" folk tale by Arthur Vorinks (Both found in Jump Right In).
3. Do a Venn Diagram to compare both stories.
4. List the habitat of the turtle in the Living Classroom and compare/contrast to the turtle in the stories.

Evaluation / Assessment:

- Completed Venn Diagrams

Extension / Integration Ideas:

- As an art activity the students can collect sticks to use in a project for "The Turtle Who Talked Too Much"

Subject / Topic of Study: Language Arts / Art

Grade Level: 1

Time Consideration: 20 minute walk
20 minutes class time

Purpose / Objectives:

H.1.24 Differentiates between safe and unsafe practices when in an outdoor environment.

LA1.38 Prints legibly.

LA1.12 Increases vocabulary to reflect a growing range of interest and knowledge.

Materials / Resources Needed:

- Pine cones, nuts, and other nature things
- Felt
- Glue
- Scissors
- Black felt pen

Activities / Procedures:

1. Students will make a Woodsy creature using a pine cone for a body and nuts for a head. They may use the other nature objects collected to decorate their creature.
2. Students will then write a story about their creature.

Evaluation / Assessment:

- Completed creature and story

Subject / Topic of Study: Reading / Science / Writing / Math

Grade Level: 1

Time Considerations: 30 minutes each activity
(can be full day's plan or spread over several days)

Purpose / Objectives:

- H 1.24 Differentiates between safe and unsafe practices when visiting the Living Classroom.
- S 1.1 Asks questions, makes and keeps simple observational records, makes predictions, uses estimations, makes sketches and diagrams to explain ideas.
- LA 1.36 Communicates ideas by using the writing process.
- M 1.1 Explores estimation of quantities less than 100.
- M 1.28 Identifies numerical relations (greater than, less than, equal to).

Materials / Resources Needed:

- Two Bad Ants by Chris Van Allsburg
- Jar for ant farms
- Paper
- Pen
- Pencils
- Crayons
- Cotton swabs
- Black tempera paint

Activities / Procedures:

1. Teacher reads story to students. Students brainstorm a list of all the dangers the ants experienced along their journey.
2. Visit the Living Classroom to look for ants and/or ant hills. Instruct students not to touch ants or hills; just observe their behavior. Place raisins or miniature marshmallows near ant hills. Observe behavior. Discuss real dangers real ants may experience along their journey. Compare/contrasts to dangers experienced by ants in story. Tell the students they are becoming myrmecologists or scientists who study ants.
3. In the classroom display 3 ant hills (bulletin board paper). Use paper to record student K-W-L ideas. (What we Know, What we want to Know, What we Learned)

4. Set up a class ant farm in a jar. Have students draw and write about their observations.
5. Make books entitled "Ant Actions." Students write 1 sentence per page to describe things ants do. Illustrate.
6. Ask students to estimate the number of ants that could sit on a child's hand. Have students trace around their hand. Cut out. Have students paint ants on cut-outs using cotton swabs and black paint. Using a pen they may add legs and antennae. When the cut-out is filled with ants, have students count the ants and write that number on back of the hand print. Compare estimation with actual number. Make a number sentence using $<$, $>$, $=$, to compare two numbers.

Evaluation / Assessment:

- Teacher observation of participation of each student.
- Evaluate completed projects.

Extension / Integration Ideas:

- "A Delicious Treat"- Place several "ants" (chocolate covered raisins) in a cup and cover them with crushed cookie crumbs or serve Ants on a Log (celery sticks, peanut butter, and raisins)
- Share an informational story about ants-compare/contrast with fictional story.

Subject / Topic of Study: Language Arts / Science

Grade Level: 1

Time Considerations: 45 minutes

Purpose / Objectives:

- H.1.24 Differentiates between safe and unsafe practices in the outdoor environment.
- LA.1.12 Increase vocabulary to reflect a growing range of interests and knowledge.
- LA.1.13 Distinguishes between letter / word, word / sentence, left / right, and beginning / end of words and sentences.
- LA.1.18 Increases existing sight vocabulary.
- LA.1.31 Uses examples from literature to create individual and group stories.
- S..1.11 Compares and describes different animals in the ways they look, grow and move.

Materials / Resources Needed:

- Picture paper- handwriting paper with area at the top for picture.
- Clipboards
- Crayons
- Quick as a Cricket (1st grade big book and story from literature series)
- S.U.N. Center #3 (Octagonal)

Activities / Procedures:

1. After studying the story from literature book, have student copy on picture paper the following: I'm as _____ as a _____.
2. Put the paper on a clipboard and take out to SUN center #3.
3. Share big book: Quick as a Cricket. Point out the language pattern and discuss how we are going to make a class book with the same pattern.
4. Take students on a walk around the nature trails and have them think of one thing they see and what it is like.
5. Return to the S.U.N. Center #3 and assist students in completing their sentence. Have them illustrate their sentence and color it.
6. Collect and bind to make a classroom book.

Evaluation / Assessment:

- Finished book.
- Assess writing and look at fluency and knowledge of sight words.

Subject / Topic of Study: Literature/ Science-Birds

Grade Level: 1

Time Considerations: 20 minutes to read and discuss book
20 minutes to make booklet
20 minutes to walk to locate bird feathers

Purpose / Objectives:

- H 1.24 Differentiates between safe and unsafe practices when in an outdoor environment.
- LA 1.3 Follows two and three part oral directions.
- LA 1.2 Listens to a variety of literary forms including stories and poems.
- S 1.12 Compares various animal groups and how they are alike and different. Identifies groups of animals that have similar characteristics and names the characteristics.

Materials / Resources Needed:

- Feathers for Lunch by Lois Ehlert
- Paper for booklet

Activities / Procedures:

Day One

1. Read the story and discuss types of birds.

Day Two

2. Take a walk to find bird feathers.

Day Three

3. Use resource books to identify the feathers. A good resource is found in the back of Feathers for Lunch.

Days Four and Five

4. Make a flip book to illustrate different birds. Use real feathers if possible to add to the pages.

Evaluation / Assessment:

- Questions about birds from the story.
- Completed booklet about birds.

Extension / Integration Ideas:

- Make a nature collage using natural materials found in the living classroom. Cut paper images may be used to add to the collage. This activity is used to extend the illustrations of the story.

Subject / Topic of Study: Language Arts/Science

Grade Level: 1

Time Considerations: 1 hour

Purpose / Objectives:

- S.1.11 Compares and describes different animals in the ways they look, grow, move.
- S.1.12 Compares various animal groups and how they are alike and different.
- S.1.13 Describes characteristics of different animals such as coloration.
- LA.1.12 Increases vocabulary to reflect a growing range of knowledge.
- LA.1.35 Writes about self-selected topics using pictures and words.
- LA.1.36 Communicates ideas by using the writing process.
- LA.1.38 Prints legibly
- LA.1.45 Alphabetizes to the first letter.

Materials / Resources Needed:

- Animals A to Z by D. McPhail
- Clipboards
- Drawing paper cut into squares

Activities / Procedures:

1. Read Animals A to Z by D. McPhail
2. Discuss animals, ABC order, and design or layout of book
3. Set purpose for nature walk. Tell students to select a card from basket (cards have a letter of the alphabet written on them). Instruct students to locate something in the Living Classroom that begins with that letter during nature walk.
4. Return to classroom. Draw picture on 2x3 card. Color. Then read to locate information about the item drawn. Write 2-3 sentences about the item. Follow writing process for book publication.
5. Put cards and writing in ABC order to form a class book.
6. Make title, table of contents, and list authors.
7. Make cover.

8. Have whole class share pages they wrote with other classes.

Evaluation / Assessment:

- Each child's contribution to the finished product will be assessed for neatness, accuracy and legibility.

Extension / Integration Ideas:

- Class books of blends, diagraphs, etc.
- Share class books with parents at PTCO or Open House

Subject / Topic of Study: Language Arts / Science / Math

Grade Level: 1

Time Consideration: 6 days - 30 minutes daily

Purpose / Objectives:

- S.1.1 Asks questions, makes and keeps simple records of observation, communicates with others, makes prediction, uses estimation and measurement, and makes sketches and diagrams to explain ideas.
- M.1.10 Describes, orders, and measures length using nonstandard (chain lengths) and standard units (inch and centimeter rulers).
- LA.1.35 Writes about self-selected topics using pictures, letter sound associations, and known words.
- LA.1.15 Applies phonetic strategies (blends; fl, fr).

Materials / Resources Needed:

- Clipboards
- Pencils
- Paper
- Planting a Rainbow by L. Ehlert
- Rulers
- Chain links

Activities / Procedures:

Day One

1. Teacher reads Planting a Rainbow by L. Ehlert, pointing out different kinds, colors, shapes, and sizes of flowers.
2. Teacher lists on chart describing words suggested by students (words that describe flowers).
3. Students take a walk through the Butterfly Garden and choose one particular flower to observe for the week. Each day students will complete activities using this chosen flower as the focus.
4. Students will draw and color their favorite flower showing details. They will look through flower books to locate the name of their flower and write a sentence about their flower.

Day Two

5. Students will measure the height of their chosen flower using chain lengths and inch rulers. They will write a sentence describing the height of their flower.

Day Three

6. Students will examine a leaf of their flower. Draw showing details and write about the leaf.

Day Four

7. Students will mark the location of their flower on a map of the Butterfly Garden.

Day Five

8. Students will write sentences about flowers using many different describing words.
Example: Flowers are _____.

Day Six

9. Students brainstorm words that begin with the fl blend like flower. Teacher lists on board or chart. Students reread words and record on flower petals.

Evaluation / Assessment:

- Teacher will evaluate completed projects.

Extension / Integration Ideas:

- Students may collect and plant seeds from their favorite flower.

Subject / Topic of Study: Language Arts / Health and Safety

Grade Level: 2

Time Consideration: 45 minutes

Purpose / Objectives:

S.2.2 Uses books and other media to obtain information related to science concepts.

H.1.24 Differentiates between safe and unsafe practices in aquatic environments or other environments.

Materials / Resources Needed:

• Crinkelroot's Guide to Walking in Wild Places by Jim Arnosky

Activities / Procedures:

1. Visit Sun Center #1 in the Living Classroom.
2. Read Crinkelroot's Guide to Walking in Wild Places.
3. Discuss safety guidelines for the Living Classroom.
4. Have students illustrate one of the guidelines (Ex. Stay away from poisonous plants).

Evaluation / Assessment:

- Teacher observation
- Student participation

Subject / Topic of Study: Math-Measuring the Outdoors

Grade Level: 2

Time Considerations: 45 minutes

Purpose / Objectives:

- M 2.7 Measures length using inches and centimeters and selects objects having given dimensions.
- LA 2.3 Follows three-part oral directions.
- LA 2.4 Recalls and interprets information presented orally.
- LA 2.6 Responds to questions on orally presented material.
- S 2.1 Asks questions, classifies objects based on similarities and differences, communicates with others, makes inferences and predictions, uses estimation and measurement, uses evidence to construct explanations, and makes sketches and diagrams to explain ideas.

Materials / Resources Needed:

- Living Classroom- Sun Center 3
- Leaves, rocks, sticks, pine cones, etc.
- Construction paper
- Paper
- Rulers with inches or centimeters
- Bags
- Glue
- Pencil

Activities / Procedures:

1. In a large group demonstrate how to measure objects and record results. Tell the children that they will be measuring their own objects that they find in the Living Classroom. Pass out bags for collection and remind children of safety rules.
2. Have children collect at least 5 objects from the outdoors. Bring the objects to Sun Center-3. Pass out rulers, paper, and pencils. The children will take measurements and record. Then the children will share their results with their classmates.
3. Display the results on a class bulletin board. Have the students glue one object to a piece of paper. Let them label the object and write down the length. Highlight the largest objects and smallest objects found.

Evaluation / Assessment:

- Divide students into 4 or 5 groups. Give each group a set of objects from the Living Classroom to measure. Let each child work individually to measure items. Evaluate the results.

Extension / Integration Ideas:

- After measuring all items the students could make a bar graph that denotes how many objects there are of various lengths. (e.g. found 10 items that were 2 cm and 8 items that were 3 cm. etc.)
- After measuring the length of the items the students could measure the weight of objects.

Subject / Topic of Study: Science- How plants change and grow

Grade Level: 2

Time Considerations: Ongoing project

Purpose / Objectives:

The student will observe and describe plant parts as they grow and change.

- S.2.1 Asks questions, classifies objects based on similarities and differences, communicates with others, makes inferences and predictions, uses estimation and measurement, uses evidence to construct explanations, and makes sketches and diagrams to explain ideas.
- S.2.4 Actively engages in the learning process via hands-on/minds-on science activities and experiences. Uses appropriate tools to collect and analyze data and solve problems.
- S.2.11 Compares variables that might affect the growth of plants. Identifies and tests how variables such as temperature, light, water and nutrients affect plant growth.
- S.2.13 Observes and describes plant parts as they grow and change. Compares the roots, stems and leaves of various plants as they grow from seeds to mature plants.

Materials / Resources Needed:

- Living Classroom - garden
- Lima bean seeds, clear plastic cups, paper towels, water, tools for planting
- Journals for recording daily/weekly
- Resource books:*
 - How a Seed Grows by Helene J. Jordan
 - Plants to Grow Indoors by George Sullivan
 - Magic School Bus Plants Seeds by Joanna Cole
 - The Tiny Seed by Eric Carle,
 - All About Seeds by Susan Kuchalla
 - "The Empty Pot" from the Treasury of Literature by Harcourt-Brace

Activities / Procedures:

1. Read the story "The Empty Pot" from the reading book. Lead the children in a discussion on what the seeds were supposed to do. Discuss how seeds and plants change as they grow. Allow children to explore other resources.
2. Give each child a seed, a cup, and a paper towel. Have them wet the paper towel and place the seed between the paper and the cup. Place the cups in the light.

3. Each day, for two weeks, have the children record changes in the seed by drawing a picture of the seed in their growth journal. Make sure the towels stay moist.
4. After the seeds have germinated, take the class to the Living Classroom and plant the seeds in the garden. Make weekly trips to the garden so that the children can continue to record growth and change.

Evaluation / Assessment:

- Using their growth journals, the children will make a picture that demonstrates how the seed changed into a plant.

Extension / Integration Ideas:

- Share the book, The Carrot Seed by Ruth Krauss with the children. Discuss their feelings as they wait for their seed to grow into a plant. Let them record these feelings in their growth journal.

Subject / Topic of Study: Science: Photosynthesis

Grade Level: 2

Time Considerations: 30 minutes

Purpose / Objectives:

S.2.10 Describes how plants use water, nutrients and light to produce their own food in a process called photosynthesis.

Materials / Resources Needed:

• The Growing Classroom: Garden-Based Science by Roberta Jaffe and Gary Appel

Activities / Procedures:

1. The teacher will lead students into discussion.
2. Read the following story to the class: "Sugar Factories" from The Growing Classroom: Garden-Based Science

The Tree Experiment

About 350 years ago, a man named Jan Ban Helmont decided to find out how plants grow. At that time, most people thought plants ate soil. Jan wasn't sure this was true, so he set up an experiment to find out for himself. He planted a small five-pound willow tree in a pot of dry soil weighting 200 pounds. Jan figured that if the tree ate the soil, then the weight of the soil should get less and less.

For five years Jan watered and took care of the willow. It grew very well and became a handsome 169 pound tree. Then Jan weighed the soil. He was careful to let the soil dry out so that it would be as dry as when he first planted the tree. The soil tipped the scales at 199 pounds and 14 ounces, only 2 ounces lighter than the original 200 pounds! Where did the tree get the food to grow 164 pounds? Jan thought it all came from the water he added. Where do you think it came from? What question did Van Helmont set out to answer? What were his conclusions? Was he right?

Since Van Helmont's time we have learned that plants make their own food from the sun's energy. This process is called photosynthesis. Life as we know it depends on this unique ability of green plants to convert the sun's energy into food. Photosynthesis is one of the most important chemical reactions on earth. We are totally dependent on plants for our food. No other living organism can make the sun's energy available to us as chemical energy. Photosynthesis takes place within the chloroplasts of plant cells. There the raw materials, water and carbon dioxide are combined chemically in the presence of sunlight and chlorophyll. Some of the resulting sugar is immediately transported to other parts of the plant. Some of the sugar is changed into starch and stored temporarily in the leaves. Oxygen is released into the air as a by-product of the process. We would not have any air to breathe or food to eat without green plants.

Evaluation / Assessment:

- Student participation in discussion
- Completion of color sheet

Extension / Integration Ideas:

Discuss the following selection from "Sugar Factories":

- What was Van Helmont's experiment?
- What did the results tell him? (The willow tree did not eat soil.)
- If you got Van Helmont's results, what would your next experiment be?
- Since Van Helmont's time, what have scientists learned about what plants need in order to grow?

The Growing Classroom:

- Garden-Based Science

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by Roberta Jaffe & Gary Appel
Sugar Factories

Description

Read this short story to the class to describe a historical science experiment and to stimulate discussion on how plants grow.

Objective

To introduce the concept of photosynthesis.

Materials

None



We've learned a lot about plants and how they grow. For human beings to grow, we eat food. What do plants eat to grow? Scientists today know the answer to this question. But scientists 350 years ago did not. If you were a scientist then, what types of experiments might you have tried in order to find the answer?

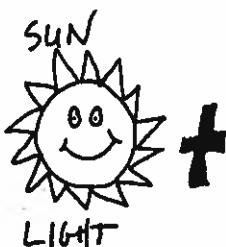


Read the following story to the class:

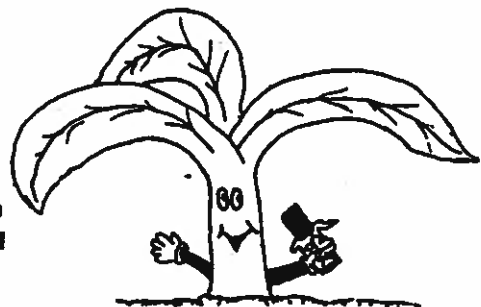
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Subject / Topic of Study: Science / The Living World: Plants

Grade Level: 2

Time Considerations: 30 minutes

Purpose / Objectives:

S.2.11 Compares variables that might affect the growth of plants. Identifies and tests how variables such as temperature, light, water, and nutrients affect plant growth.

Materials / Resources Needed:

- Pond Water
- Measuring cup
- 2 jars
- Quart container
- 1 teaspoon liquid house plant food
- Cheese cloth
- Rubber band
- White paper
- fluorescent lamp

Activities / Procedures:

1. Pour one cup of pond water into each of 2 jars, labeled "A" and "B".
2. Then pour one quart of pond water into a separate quart container and add the teaspoon of liquid house plant food and mix together. Add one teaspoon of this solution to jar B.
3. Stretch a piece of cheese cloth over each jar and secure with rubber bands.
4. Place the jars on top of a piece of white paper on a counter top. Position a fluorescent lamp over the experiment, making sure the jars get plenty of light. Leave the lamp on night and day. In one to three weeks you will notice green growth in both jars. However, one of the jars will have heavier growth. Which one, A or B?

•Even though we cannot see them, microscopic plants called algae live in our lakes and ponds. The lamp acted like sunlight and caused algae to grow in the jars. Adding plant food to jar B provided nutrients to this sample, and so these algae grew faster than those that did not receive plant food.

Evaluation / Assessment:

- Teacher observation
- Student participation

Extension / Integration Ideas:

- Students could check every 2 or 3 days and keep a journal of the changes in the water.

Sources: Learn and Discover: Fun Science by David L. Drostar

Subject / Topic of Study: Science / The Living World: Plants

Grade Level: 2

Time Considerations: 30 minutes

Purpose / Objectives:

S.2.11 Compares variables that might affect the growth of plants. Identifies and tests how variables such as temperature, light, water, and nutrients affect plant growth.

Materials / Resources Needed:

- Pond Water
- Measuring cup
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Activities / Procedures:

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Evaluation / Assessment:

- Teacher observation
- Student participation

Extension / Integration Ideas:

- Introduce a problem (water pollution, insecticides that kill plants and grasses), and ask students how it will affect the web.

Sources:

Theme Book Series: Ecology (Grades 2-3), 1991 Frank Shaffer Publications, Inc.

Subject / Topic of Study: Science: What can a tree do for me?

Grade Level: 2

Time Considerations: 3 or 4 days

Purpose / Objectives:

The student will identify trees found in the Living Classroom and explore ways these trees are useful to humans.

S.2.14 Identifies varieties of plants and their uses. Identifies trees, shrubs, herbs, flowers, fruits, and vegetables. Recognizes that plants are used for beauty, food, clothing and shelter.

LA.2.38 Prints legibly:
•Correctly forms letters and numbers
•Correctly spaces words and sentences.

LA.2.40 Writes a minimum of three sentences about a topic.

LA.2.42 Writes in a variety of genres to include correspondence (including writing letters and addressing envelopes).

LA.2.43 Applies correct principles of grammar.

LA.2.44 Communicates ideas by using the writing process:
•Prewriting
•Drafting
•Revising
•Editing
•Publishing

Materials / Resources Needed:

- Plants: Ideas and Activities Across the Curriculum by Phyllis Bass
- Mighty Tree by Dick Gackenbach
- Trees by Kathie Billingslea Smith
- The Giving Tree by Shel Silverstein
- Photo album
- Paper bags or ziploc baggies
- Sticky labels
- Living Classroom

Activities / Procedures:

1. Take a walk through the Living Classroom. Provide each child with a bag for leaf collecting.
2. Return to the classroom. Use the various resources to identify the trees from which the leaves come. Put each type of leaf in the magnetic photo album and label it using the sticky labels.
3. Share the book, Mighty Tree with the class. Discuss ways that trees are used for beauty, food, and shelter.
4. Allow each child to pick a type of tree as well as a use for the tree. Have them pretend to be that tree. Let them write a fictionalized account of what it is like to be that tree, what they became as that tree, and how they became the chosen product.
5. Have a time for the children to share their finished stories with their classmates. To conclude the activity, read The Giving Tree.

Evaluation / Assessment:

- Finished stories

Extension / Integration Ideas:

- Help the children plant a tree in the Living Classroom.

Subject / Topic of Study: Science: Sun

Grade Level: 2

Time Considerations: 1 day (various times during the day)

Purpose / Objectives:

The student will observe the apparent movement of the sun by tracing shadows of objects at different times of the day and charting the sun's movement.

- S.2.1 Asks questions, classifies objects based on similarities and differences, communicates with others, makes inferences and predictions, uses estimation and measurement, uses evidence to construct explanations, and makes sketches and diagrams to explain ideas.
- S.2.2 Uses books and other media to obtain information related to science concepts.
- S.2.4 Actively engages in the learning process via hands-on/minds-on science activities and experiences. Uses appropriate tools to collect and analyze data and solve problems.
- S.2.19 Observes and discusses apparent motion of sun and moon. Understands that the sun, moon, and stars appear in the east and set in the west. Plots the apparent movement of the sun and moon in the sky using shadows or other devices.
- M.2.32 Constructs and interprets single bar graphs and pictographs with up to five columns, using whole unit data.

Materials / Resources Needed:

- Living Classroom S.U.N. Center #2
- Garden area
- The Sun is Always Shining Somewhere by Allan Fowler
- Paper
- Pencils
- Clip boards

Activities / Procedures:

1. Early in the day, share the book The Sun is Always Shining Somewhere by Allan Fowler with the class. Lead a discussion about how the sun appears to move across the sky during the day from east to west. Tell the students that they can observe this by tracing the shadows of objects.
2. Take the children to S.U.N. Center #2 (early in the morning, 9:00 a.m.). Have them note where the sun is in the sky by looking through the trees. Write down where the sun is in the sky (Is is low, medium, or high?).
3. Lead the children to the garden. Have them choose a plant and trace a shadow. Return to the Living Classroom again around 11:00 a.m. and 2:00 p.m. Note the position of the sun and trace the shadows each time.
4. Complete the chart that graphs the apparent movement of the sun. This can be done individually or in pairs.

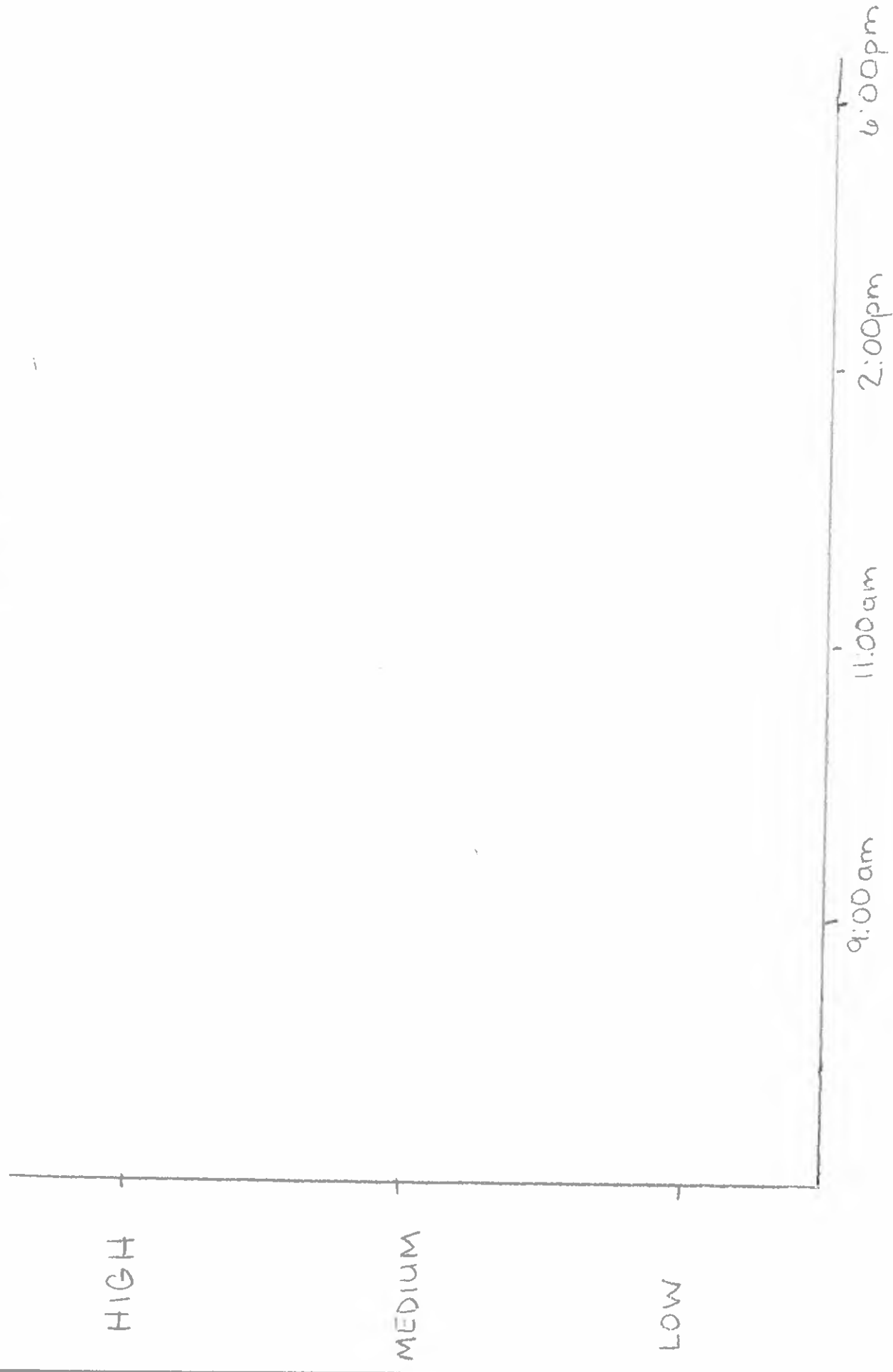
Evaluation / Assessment:

- A completed chart

Extension / Integration Ideas:

- Allow the students to draw a picture of something outside and encourage them to add its shadow. Let them share their drawing with a friend and have the friend guess what time the picture was drawn (according to the shadow).

SUN COURT



Directions: At each time listed, draw a picture of the sun according to where it is in the sky. Then predict where you think the sun would be in the sky at 6:00pm and add that picture to the chart.

Subject / Topic of Study: Science: Solids, Liquids, and Gases

Grade Level: 2

Time Considerations: 1 hour

Purpose / Objectives:

The student will distinguish among states of matter and sort matter from the Living Classroom.

S.2.6 Distinguishes among states of matter (solid, liquid and gas). Sorts objects according to solid, liquid, or gas.

S.2.8 Predicts changes in states of matter such as when water is heated or frozen.

Materials / Resources Needed:

- Living Classroom
- Clip boards
- Paper
- Water
- Hot pot
- Clear plastic cups
- Pencils

Activities / Procedures:

1. Tell the students that matter has 3 different forms: solids, liquids and gases. Show them how water changes form. Pour water into a plastic cup. Ask the children what form the water is now. Then ask them what will happen to the water if it is placed in the freezer, and to predict what form will it be then. After several hours show them the frozen water and have them check their predictions. Next, heat some water in the hot pot. Let the students predict what form the water will take next.
2. Take students to the Living Classroom, armed with clipboards, paper, and pencils. Have them divide their paper into thirds. Then tell students to label the three sections solids, liquids, and gases. Ask the students to categorize and list the matter found. Examples might include:
 - Solids: leaves, rocks, trees, etc.
 - Liquids: pond water, well water, liquid in the trees, etc.
 - Gases: compost gas, air (oxygen), etc.

Evaluation / Assessment:

- Give students a short quiz where they must label matter as either solid, liquid, or gas.

Subject / Topic of Study: Science - Food Web

Grade Level: 2

Time Considerations: 3 days - 30 to 45 minutes

Purpose / Objectives:

S.2.17 Identifies the many feeding relationships possible among various plants and animals. Illustrates food chains and food webs and predator-prey relationships.

Materials / Resources Needed:

- Living Classroom
- Pencils
- Clipboards
- Library books
- Die Cuts
- String
- Hole punch

Activities / Procedures:

Day 1

1. After reviewing food chains, students put together their food web mobile. This will be done in small groups.

Day 2

2. Students will present their mobiles to other second and first grade classes to visually represent a simple example of our food chain.

Day 3

3. Group discussion and questions on what would or could happen if part of the food chain was not present or disappeared.

Evaluation / Assessment:

- Completed food web mobile

Subject / Topic of Study: Science / Ecology / Independence of Life

Grade Level: 2

Time Considerations: 5-10 days (30-45 minute lessons)

Purpose / Objectives:

S.2.17 Identifies the many feeding relationships possible among various plants and animals. Illustrates food chains and food webs and predator-prey relationships.

Materials / Resources Needed:

- 6 x 9 sheet of white paper
- Crayons
- Black markers
- String/pushpins
- Magazines
- Living Classroom

Activities / Procedures:

Day One

1. Teacher sets up the beginning of a bulletin board titled "Basic Living Things": pond, fish, air, plant, sun (all on 6x9 paper with word and picture).
2. As a group, students connect string between pictures that interact. Decide which ones are needed, how the removal of an object affects other things.

Day Two

3. Visit the Living Classroom to come up with ideas of other things in our ecosystem.
4. Return to the classroom so that students can draw and label a picture on 6x9 paper. Place pictures on the bulletin board.
5. Let each student connect strings appropriately. Review interactions.

Day Three

6. Identify feeding relationships possible among plants and animals.
7. Have students construct their own food chain/food web. Discuss predator-prey relationships.

Day Four

8. Introduce a problem: water pollution, insecticides, cutting trees down, and ask students how it will affect the web.

Day Five

9. Divide students into small groups.
10. Have students construct a food web using pictures cut out of a magazine.

Evaluation / Assessment:

- Day 5 activity

Extension / Integration Ideas:

Video tapes (titles may be obtained from TRC - these are Kingston tape #s):

- #30076 Food web
- #3288 Food chain
- #4085 Plants make food
- #4109 Food: energy from the sun
- #4806 Feeding
- #3967 Food to live and grow
- #645 Bill Nye: Food web (KES only)

Subject / Topic of Study: Science - Woodland Habitats (Introductory Activity)

Grade Level: 2

Time Considerations: Ongoing project (5 days of 45 minute lessons)

Purpose / Objectives:

The student will observe and research a woodland habitat. The student will take data and create a classroom mural depicting such a habitat and the plants and animals living there. The student will write at least three sentences describing this habitat.

S.2.15 Identifies and describes habitats (desert, woodland, ponds, streams) of plants and animals and their characteristics (light, moisture, temperature).

FAVA 2.2 Uses a variety of art materials and techniques to model, construct, and compose original artworks.

LA.2.4 Recalls and interprets information presented orally.

LA.2.43 Applies correct principles of grammar:
•Writes complete sentences
•Uses correct capital letters
•Uses correct punctuation
•Applies correct rules of usage and expression.

LA.2.44 Communicates ideas by using the writing process:
•Prewriting
•Drafting
•Revising
•Editing
•Publishing

Materials / Resources Needed:

•Living Classroom

•Books:

In Woods and Forests (1997) by Tessa Paul

A Walk in the Woods (1990) by Caroline Arnold

Creatures of the Woods (1985) by Toni Eugene

•Computer

•Chart paper

•Bulletin board paper

•Writing paper

•Art supplies - pencils, markers, crayons, and paint

•Clipboards

Activities / Procedures:

Day One

1. Provide each child with a clipboard, paper, and pencil. Introduce the activity by taking the children on a tour of the Living Classroom.
2. Go to Sun Center #1. Have the children make a list of what they see and hear.

Day Two

3. Provide the children with the resources on the woodland habitats. Help them add to their list of plants and animals ones that they could possibly see in the woods. Encourage them to write down interesting facts on temperature, light, and moisture.

Day Three

4. Brainstorm together as a class a list of plants and animals. Assign each child several plants/animals to include in the mural. Begin work on mural.

Day Four

5. Allow children to begin writing their three sentences (paragraph) describing the habitat. Make sure at least one sentence describes either light, moisture, or temperature of habitat.

Day Five

6. Continue the writing process. Allow children to proofread, edit, and rewrite their pieces.

Evaluation / Assessment:

•Finished piece will be published in a classroom book on woodland habitats. Each child will read their piece out loud to the class.

Extension / Integration Ideas:

•The students can do a week long study on another habitat such as the desert. Then compare the two habitats using a Venn diagram to highlight similarities and differences.

Subject / Topic of Study: Science: Research Report on Ants

Grade Level: 2

Time Consideration: 1 week

Purpose / Objectives:

S.2.2 The student will use books and other media to obtain information related to Science concepts in order to write a report.

LA.2.36 Uses correct spelling for frequently used sight vocabulary.

LA.2.37 Uses learned phonetic strategies to spell correctly.

LA.2.38 Prints legibly (correctly forms letters and numbers and correctly spaces words and sentences.

LA.2.40 Writes a minimum of three sentences about a topic.

LA.2.43 Applies correct principles of grammar.

LA.2.44 Communicates ideas by using the writing process.

Materials / Resources Needed:

- Book: Treasury of Literature - All Kinds of Friends (1996) by Harcourt Brace
- Video Tape: " Entomology: leaf cutter ants - pests or pals?"
- Video Tape: " Magic School Bus gets ants in the pants"
- Book: Life of the Ant by Jun Nanao
- Story: "Ant Cities" by Arthur Dorras from Harcourt Brace Treasury of Literature
- Book: Two Bad Ants by Chris Van Allsburg
- Computer - Internet and Compton's Encyclopedia

Activities / Procedures:

1. The student will read the story "Ant Cities" from their literature book. Discuss with the students various facts about ants. Tell the students that this story is a non-fiction story. Explain how the students will write their own non-fiction report about ants. The reports may include information on where ants live, what ants eat, what jobs ants have, different kinds of ants, etc. Each report must contain 4 facts about ants and 1 opinion.
2. Demonstrate the parts of a paragraph (topic sentence, body, closing sentence) that each finished report should have.
3. Allow students time to research and take notes. Help them begin the writing process.

4. Encourage students to use the writing process in order to produce a finished report. If time remains the students may illustrate these reports.

Evaluation / Assessment:

- Each student will share one new thing that they learned about ants from their research with the class. Each fact may be added to an "Ants Go Marching" bulletin board.

Extension / Integration Ideas:

- Science: students can build their own ant farm using a large plastic jar with lid, black paper, dirt, piece of sponge, ants, and ant food.
- Take students on an ant hunt in the Living Classroom to see how many ant hills and what kinds of ants use these hills.

Subject / Topic of Study: Social Studies / Colonization:
"Culture and Customs Now and Then"

Grade Level: 2

Time Considerations: 3 days (30 minutes each day)

Purpose / Objectives:

The students will pretend to be Pilgrims hunting for wild turkeys to prepare for the first Thanksgiving.

SS.2.13 Describe the customs and lifestyle of the early American settlers in Plymouth and Jamestown colonies.

LA.2.38 Prints legibly:
•Correctly forms letters and numbers.
•Correctly spaces words and sentences.

LA.2.40 Writes a minimum of three sentences about a topic.

LA.2.43 Applies correct principles of grammar:
•Writes complete sentences
•Uses correct capital letters
•Uses correct punctuation
•Applies correct rules of usage and expression

LA.2.44 Communicates ideas by using the writing process:
•Prewriting
•Drafting
•Revising
•Editing
•Publishing

LA.2.45 Uses available technology to assist in writing.

Materials / Resources Needed:

- Thanksgiving Day by Gail Gibbons
- Living Classroom

Activities / Procedures:

Day One

1. Read the book Thanksgiving Day .

Day Two

2. The students will hike to the deck near the Reflecting Pond.
3. The students will sit quietly and pretend for ten minutes to be a Pilgrim watching and waiting for a wild turkey to appear.
4. For five minutes, the students will imagine capturing a wild turkey.
5. Students will return to the classroom and write a story about "How to Kill a Turkey for Thanksgiving Day the Pilgrim's Way."
6. Students will rewrite their stories for publishing.

Evaluation / Assessment:

- Completed published stories.

Subject / Topic of Study: Social Studies
Homes of the Eastern Woodlands and Plains Indians

Grade Level: 2

Time Considerations: 2 days

Purpose / Objectives:

The student will make models in order to compare the different types of shelter used by both Eastern Woodlands and Plains Indians.

SS.2.12 Compares the lifestyles of Eastern Woodlands and Plains Indians: food, shelter, clothing, and transportation.

FAVA.2.2 Uses a variety of art materials and techniques to model, construct, and compose original artworks.

LA.2.2 Listens to a variety of literary forms including stories and poems.

LA.2.3 Follows three-part oral directions.

Materials / Resources Needed:

- Living Classroom Tepee area
- An Indian folk tale such as Legend of the Bluebonnet by Tomi DePaola
- Materials for shelters: craft sticks, construction paper, pipe cleaners, flour tortillas, markers, Q-tips, food coloring, paint, glue
- Resource books:
 - Native Americans by Vicki Shiotsu
 - Indians of the Plains by Rae Bains
 - The Cherokee by Emile U. Lepthien
 - Indians of the Eastern Woodlands by Rae Bains
 - Indian Homes by Keith Brandt

Activities / Procedures:

1. Take the students to the tepee area of the living classroom. Share a Native American folk tale. Explain to the students how all Native Americans shared stories with each other but not all Native Americans lived in tepees. Show students examples of other homes the Woodland and Plains Indians used from resource books.

2. Return to the classroom and divide the students into 3 groups. One group will make tepees from construction paper, craft sticks, and paint. The second group will make log cabins from craft sticks. The third group will make wigwams from taco shells and pipe cleaners.

- *Tepees*: give each child a copy of a tepee cut-out on construction paper. Have them paint designs on the paper and cut it out. Glue craft sticks sticking out of the top.

- *Log cabins*: give each child some craft sticks. Show them how to alternate the sticks to make a square-homelike structure.

- *Wigwams*: give each child some pipe cleaners and soft flour tortillas. Help them fashion the pipe cleaners into a dome-like structure. Tear the flour tortillas into strips and place on the structure. (Shells will harden over time!)

Evaluation / Assessment:

- Finished products will be evaluated

Extension / Integration Ideas:

- To learn more about Eastern Woodland and Plains Indians, the students could view the videos "Indians of the Southeast" and "Indians of the Plains".

Subject / Topic of Study: Social Studies: Native Americans

Grade Level: 2

Time Considerations: 45 minutes

Purpose / Objectives:

Distinguishes between historical and modern forms of communication and transportation.

SS.2.12 Compares the lifestyles of Eastern Woodland Indians and Plains Indians.

Materials / Resources Needed:

•Books, pictures, etc. about Native Americans and transportation.

Activities / Procedures:

1. Discuss ways that Native Americans communicated with each other such as sign language, pictures, music, story telling and ways in which they communicate with each other now.
2. Discuss how Indians traveled from place to place such as by horses or by foot and how they travel today. Do they still communicate and travel in the same ways?
3. Read books about Native Americans to the students and discuss.

Evaluation / Assessment:

•Teacher questions and student answers.

Extension / Integration Ideas:

•Students make pictures using symbols to tell a story and then exchange them with a partner who will guess what the story is.

Subject / Topic of Study: Science - Photosynthesis

Grade Level: 2

Time Considerations: 15 minutes preparation
30 minutes for actual activity

Purpose / Objectives:

To explain how an ecosystem helps a plant produce food and correctly identify the steps involved in the process of photosynthesis.

- S.2.10 Describes how plants use water, nutrients and light to produce their own food in a process called photosynthesis. Compares plants grown with all of these resources with plants deprived of these resources.
- LA.2.26 Recognizes IMPLICIT main ideas, details, sequence of events, and cause-effect relationships in fiction and nonfiction.
- LA.2.31 Demonstrates comprehension when reading a variety of literary forms (e.g., fiction, nonfiction, poetry, and drama).
- FATA.2.2 Demonstrates cooperative interaction in drama activities.
- FATA.2.22 Recognizes explicit main ideas, details, sequences of events, and cause-effect relationships in dramatic presentations.

Materials / Resources Needed:

- Nine 9x13 sheets of poster board labeled
- Poem to be read by teacher
- Worksheet

Activities / Procedures:

1. Begin by labeling (and drawing a picture if needed) the nine pieces of poster board as follows: cloud that is raining, water, an animal with mouth opened, photosynthesis, CO₂, sun, small spots with word chlorophyll, sugar and O₂.
2. Show each card to the class, identify and explain each term - especially explain the animal with it's mouth open giving off CO₂.
3. Choose nine students and give each a labeled card.
4. The teacher recites the poem as the students with the appropriate card stands and faces the rest of the class.

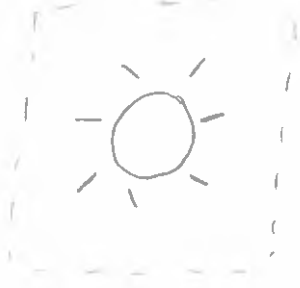
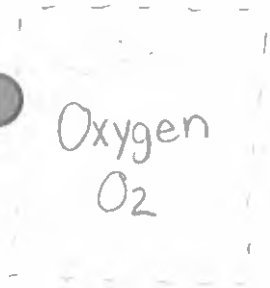
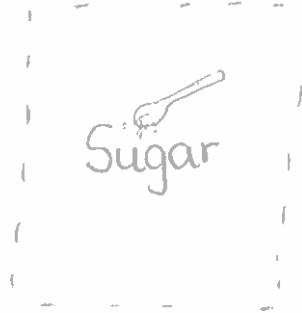
5. This process will have to be repeated at least three times, giving all students a chance to hold a card and learn the poem.

Evaluation / Assessment:

- Worksheet on the photosynthesis process.

NAME _____

The Photosynthesis Cycle



Directions : Cut out the pictures and put them in the correct order 1-6. Color the pictures.

The Photosynthesis Cycle

A cloud gives us rain
it's the water that plants need
to make the food
so they can feed

Animals give off CO_2
it is important to plants and trees
Chlorophyll traps the sunlight
to make food the plants need

Add water, CO_2 , and sunlight
Photosynthesis is the key
It makes the sugar and oxygen
For the plants, the animals and me!

Subject / Topic of Study: Science - Plants

Grade Level: 2

Time Considerations: Prep time - 25 minutes, Lesson time - 2 days

Purpose / Objectives:

S.2.12 To identify and explain the function of the main parts of a plant.

S.2.14 To identify a variety of plants and their uses.

Materials / Resources Needed:

- Four 9x13 pieces of poster board
- Working Together worksheet
- Plant poem and diagram
- How Plants Help Us worksheet

Activities / Procedures:

Day 1

1. Begin by introducing the plant. Have a plant and its four main parts drawn on the board. Discuss each part and its function. Have ready, four 9x13 pieces of poster board with each plant part drawn so that when the sheets are put one on top of the other vertically they form a whole plant - see diagram. Choose four students and give each a piece of poster board. Begin with the roots and as the teacher you recite the poem about roots. Have the student hold his card out. Continue with the stem, leaf, etc., each student putting their card vertically on top of the student before - until the plant is formed. Let all students have a chance to hold a card. Eventually the students may begin joining as you recite the poem.

Day 2

2. Visit the Living Classroom. Move to one of the Sun Centers. Have ready various plants that you have collected. Have students try to identify the plants. Ex: corn, dandelion, onion, ferns, berries, etc. Discuss what each plant is used for, ie. food, dyes, beauty. As a group complete the worksheet "How Plants Help Us".

Evaluation / Assessment:

- Completed worksheets

Extension / Integration Ideas:

- Grow individual plants

Plant Parts

Name _____

A plant has many parts. Each part has a special job.

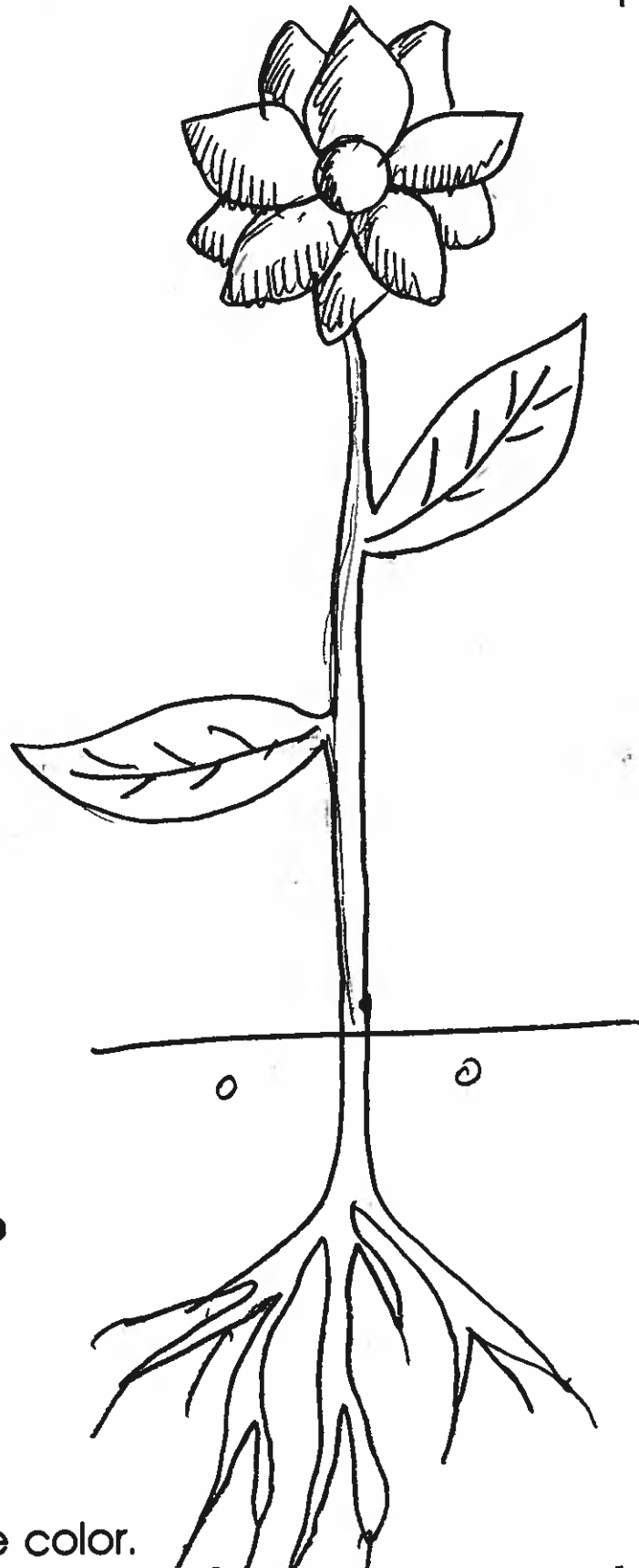
Word Bank roots stem
flower leaf

Label the parts of the plant.

Draw a line from the plant part to its job.

- I make the seeds. ●
- I make food for the plant. ●
- I take water from the roots to the leaves. ●
- I hold the plant in the ground. ●

- Color the roots red.
- Color the stem yellow.
- Color the leaves green.
- Color the flower your favorite color.



Subject / Topic of Study: Science / The Living World: Plants

Grade Level: 2

Time Considerations: 3 days - lesson time varies

Purpose / Objectives:

S.2.12 Identifies and explains functions of main parts of plants.
Names parts of plants and explains functions of each (root, stem, leaf and flower).

Materials / Resources Needed:

- Plant worksheet
- Tree parts worksheet

Activities / Procedures:

Day One

1. The students will go on a hike to the Living Classroom. They will observe the different plants and trees, paying special attention to plant and tree parts and their functions.
2. The students will return to the classroom and discuss their observations.
3. The teacher will read and discuss worksheet on tree and plant parts.

Day Two

4. The students will complete worksheets on tree and plant parts.

Day Three

5. The students will select a specific tree or plant to draw and label the parts.

Evaluation / Assessment:

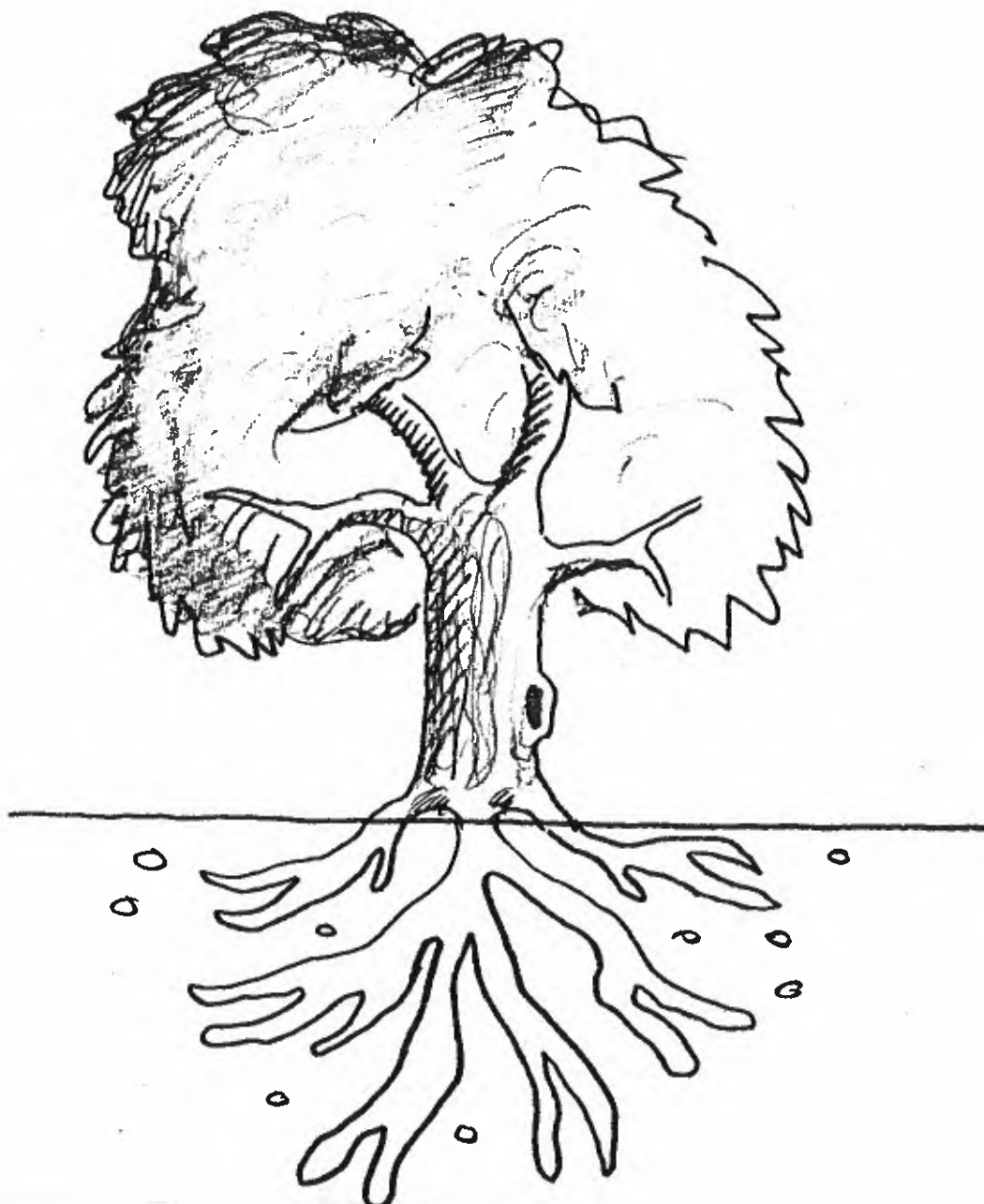
- Teacher observation
- Student participation
- Completion of worksheets

Source:

IF8757 Science Enrichment, 1992 Instructional Fair, Inc.

Tree Parts

Trees have three main parts. They are the trunk, the roots, and the leaves. Each part has a special job. Each part helps the tree.



Cut out the name of each part.

Cut out the job of each part.

Paste them on the picture.

trunk

leaves

roots

I hold the tree
in the ground.

I make food
for the tree.

I hold most of the tree
above the ground.

Subject / Topic of Study: Science / The Living World: Plants

Grade Level: 2

Time Considerations: 3 days - 30 minutes each day

Purpose / Objectives:

S.2.14 Identifies varieties of plants and their uses.

LA.2.38 Prints legibly:
•Correctly forms letters and numbers.
•Correctly spaces words and sentences.

LA.2.40 Writes a minimum of three sentences about a topic.

LA.2.43 Applies correct principles of grammar:
•Writes complete sentences
•Uses correct capital letters
•Uses correct punctuation
•Applies correct rules of usage and expression

LA.2.44 Communicates ideas by using the writing process:
•Prewriting
•Drafting
•Revising
•Editing
•Publishing

LA.2.45 Uses available technology to assist in writing.

Need:
Apple worksheet
Apple Cider
recipe

Materials / Resources Needed:

- Seeds and Weeds by Rena K. Kirkpatrick
- Apple worksheet (included in lesson plans)
- Apple Cider recipe (included in lesson plans)
- Living Classroom

Activities / Procedures:

Background information

At times, fruit will drop to the ground and seeds will sprout close to the parent plant. Some plants even have seed pods which burst open and shoot the seeds several feet away from the parent. Many seeds, however, have features that enable them to be carried long distances by wind, animals, water, and people. The maple, elm, cottonwood, and willow trees have seeds which, because of their shapes, can travel great distances by wind. Seeds

of most water plants are dispersed by floating in rivers, streams, and even oceans. People buy seeds and take them to new areas. Animals and people also transport some seeds which stick to their fur or clothing.

Day One

1. Read background information for students.
2. Take a hike to the Living Classroom.
3. The students will observe the apple trees and identify the parent tree.
4. The students will identify the many ways the other trees could have started.
5. The students will read, discuss and complete the apple worksheet.

Day Two

6. The teacher will list products of apples on the board as students provide answers.
7. The students will select their favorite apple product to write a story about.

Day Three

8. The students will bring in apples to make apple cider.

Evaluation / Assessment:

- The student will write a paragraph using 2 to 3 sentences which express a complete thought.
- Student's participation in class
- Teacher observation

Source:

- The Seed Song, lyrics by Judy Saksie, illustrated by Adjoa Burrowes
- How a Seed Grows by Helene J. Jordan, illustrated by Doretta Krupinski
- From Seed to Plant by Gail Gibbons

Subject / Topic of Study: Science - Trees

Grade Level: 2

Time Considerations: prep-time 30 minutes
lesson time 4 days

Purpose / Objectives:

To identify a tree and what its uses are and identify and explain the function of the four main parts of a tree.

- S.2.12 Identifies and explains function of main parts of a plant. Names parts of plant and explains function of each (root, stem, leaf and flower).
- S.2.14 Identifies varieties of plants and their uses. Identifies trees, shrubs, herbs, flowers, fruits and vegetables. Recognizes that plants are used for beauty, food, clothing and shelter.
- LA.2.35 Uses examples from literature to create individual and group stories.
- LA.2.36 Uses correct spelling for frequently used sight vocabulary.
- LA.2.38 Prints legibly: correctly form letters and numbers; and correctly spaces words and sentences.
- LA.2.40 Writes a minimum of three sentences about a topic.
- LA.2.43 Applies correct principles of grammar.

Materials/Resources Needed:

- Living Classroom
- A Tree Is Nice by Janice Udry
- Chart paper
- Clipboard, pencil, paper
- Tree worksheets
- Tree-shaped booklets

Activities/Procedures:

Day One:

- On chart paper have a tree drawn with its roots, limbs, and leaves. Discuss with the students what trees do for us - why do we need trees?
- Read A Tree Is Nice by Janice Udry. On the chart paper (separate from the one with the tree drawn on it), list the ideas that were given in the story about what trees do for us. Let the students add their own ideas.



Day Two:

- Visit the Living Classroom. Go to an area with a variety of trees.
- Have each student choose a tree and complete the worksheet.

Day Three:

- On the chart paper with the picture of the tree, discuss the tree's four main parts, i.e., the roots, trunk, limbs, and leaves.
- Choose four students to act out the various parts of the tree. For example; the student who is the roots will say, "I get water and food from the ground; the student who is the trunk will say, "I support and protect the tree". Let each student have a turn being a part of the tree. Let them act it out in front of the class.
- Have each student complete a worksheet on parts of the tree.

Day Four:

- Distribute to each student a tree-shaped blank book.
- Have each student write their own story about a tree (fictional or nonfictional). Encourage them to include the parts of the tree and what a tree can be used for.

Evaluation / Assessment:

- Completed assignments.
- Teacher observation.

Extension / Integration Ideas:

- Read and discuss The Giving Tree by Shel Silverstein.
- Plant a tree.
- Talk about the growth rings of a tree.
- Design posters for Arbor Day.
- Write to the Arbor Day Foundation for information.

Evaluation / Assessment:

- The completed and correct worksheet

Extension / Integration Ideas:

- Provide several different types of apples for tasting. Have the children vote for their favorite type of apple. Graph the results.
- Read about Johnny Appleseed (Johnny Appleseed's birthday is September 26). Check out great ideas in the Apple vertical file. September is Apple Month schoolwide.

Subject / Topic of Study: Science / How Does an Apple Tree Grow?

Grade Level: 2

Time Considerations: 1 hour

Purpose / Objectives:

The student will observe apple trees, read about how they grow, and correctly sequence this growth.

- S.2.2 Use books and other media to obtain information related to science concepts.
- S.2.12 Identifies and explains function of main parts of a plant. Names parts of plant and explains function of each (root, stem, leaf and flowers).
- S.2.13 Observes and describes plant parts as they grow and change. Compares the roots, stems and leaves of various plants as they grow from seeds to mature plants.
- S.2.14 Identifies varieties of plants and their uses. Identifies trees, shrubs, herbs, flowers, fruits and vegetables. Recognizes that plants are used for beauty, food, clothing and shelter.

Materials / Resources Needed:

- Living Classroom - apple orchard
- Apple Tree by Barrie Watts
- Sets of 5 sequencing cards
- Apples worksheet

Activities / Procedures:

1. Read the book Apple Tree to the children. Discuss the different stages of the apple tree according to the season.
2. Visit the Living Classroom and tour the apple orchard. Let the children decide the growth stage the apple tree is in at the present time.
3. Divide the children into small groups. Give each group a set of sequence cards. Let them put their set of cards in the correct order.
4. Give each student an apple worksheet to complete individually.

What kind
of sequence
cards?
Examples are
needed.
Apples w:
needed

Subject / Topic of Study: Science / Water Plants

Grade Level: 2

Time Considerations: 1 week (1 hour day 1, 15 minutes days 2-5)

Purpose / Objectives:

The student will discover how water plants get the resources they need to survive.

S.2.10 Describes how plants use water, nutrients and light to produce their own food in a process called photosynthesis. Compares plants grown with all of these resources with plants deprived of these resources.

S.2.11 Compares variables that might affect the growth of plants. Identifies and tests how variables such as temperature, light, water and nutrients affect plant growth.

S.2.15 Identifies and describes habitats (desert, woodland, ponds, streams) of plants and animals and their characteristics (light, moisture, temperature).

LA.2.38 Prints legibly: correctly forms letters and numbers, and correctly spaces words and sentences.

LA.2.40 Writes a minimum of three sentences about a topic.

LA.2.43 Applies correct principles of grammar: writes in complete sentences, uses correct capital letters, uses correct punctuation, and applies correct rules of usage and expression.

Materials / Resources Needed:

- 3 wide-mouth glass jars, 1 lid
- Water
- Gravel
- Water plants (rooted)
- Dark construction paper
- Reflecting pond
- Rubbing alcohol
- Plant food
- Light
- Ruler
- Information sheet

Activities/Procedures:

1. Before the activity take the children to the reflecting pond and discuss what the water plants need to survive.
2. Label each jar 1, 2 and 3.
3. Put gravel in the bottom of each jar with water. Put under light and add food.
4. Do the same thing with a plant in jar #2 except add the rubbing alcohol (the pollution).
5. Do the same thing with a plant in jar #3 but cover completely with dark construction paper.
6. For a week, add food or rubbing alcohol every other day only to jar #2.
7. Have the students complete the information sheet.

Evaluation / Assessment:

- Have the students draw a picture of a healthy plant. Let them write several sentences about what a healthy water plant needs to survive.

Extension / Integration Ideas:

- The students can repeat this experiment using a different variable.

What Water Plants Need

Draw a picture of each plant before and after the experiment. Answer the questions on the back of this paper.

Before:

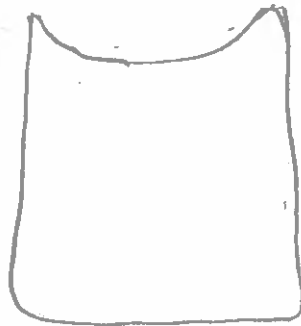
Jar 1



Height: _____

Color: _____

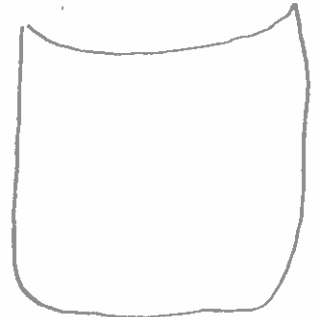
Jar 2



Height: _____

Color: _____

Jar 3

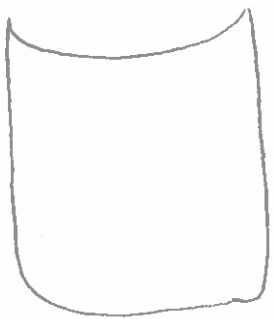


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After:

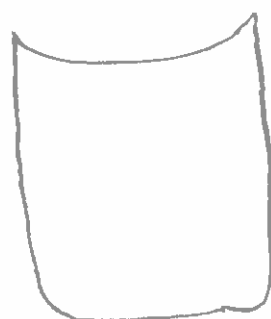
Jar 1



Height: _____

Color: _____

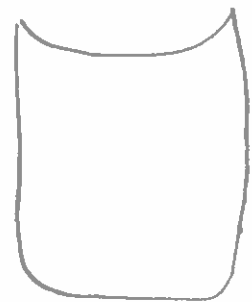
Jar 2



Height: _____

Color: _____

Jar 3



Height: _____

Color: _____

① Why did the plants die when one resource was taken away?

② Do plants die if they get too much of any one resource?

Subject / Topic of Study: Science: Weather

Grade Level: 2

Time Consideration: Prep time 30 minutes
Lesson time 5 days, 30 minutes each day

Purpose / Objectives:

- S.2.1 Asks questions, classifies objects based on similarities and differences, communicates with others, makes inferences and predictions, uses estimation and measurement, uses evidence to construct explanations, and makes sketches and diagrams to explain ideas.
- S.2.4 Actively engages in the learning process via hands-on/minds-on science activities and experiences. Uses appropriate tools to collect and analyze data and solve problems.
- M.2.32 Constructs and interprets simple bar graphs and pictographs with up to five columns .

Materials / Resources Needed:

- Weather station
- Coffee cans, Crisco cans or some other large aluminum can
- Straws •Plastic wrap •Index cards •Paper drinking cups
- Weather station worksheets

Activities / Procedures:

1. Students will visit the weather station.
2. Discussion will take place as to the identity and use of each weather device.
3. Students will be divided into four groups. Over a course of three days each group will observe and record data from the following weather devices; rain gauge, barometer, weather vane, and thermometer.
4. Using the same four groups, have each student in each group construct one of the following instruments; barometer, rain gauge, weather vane, or anemometer.
5. Upon completion of the weather devices, students will return to the weather station over a period of days to observe and record data using their self-made weather devices.

Evaluation / Assessment:

- Have each student graph their results. Discuss, as a class, the results.

Subject / Topic of Study: Science / Structure of Matter (Buoy, Oh Buoy!)

Grade Level: 2

Time Considerations: 1 hour or 2 (30 minute) lessons

Purpose / Objectives:

S.2.7. Recognizes and compares physical properties of objects.

S.2.8. Predicts changes in matter after appropriate demonstrations.

Materials / Resources Needed:

- Raw egg
- 2 drinking glasses
- Water
- 1 heaping tablespoon of salt
- Sequence sheet

Activities / Procedures:

Day One

1. Define buoyancy with students. Have students predict the outcome of a freshwater and saltwater experiment with raw eggs.
2. Read background information about buoyancy. Buoyancy is the power of a liquid to exert an upward force on an object placed in it. The force, is equal to the weight of fluid that is pushed aside. The egg sinks to the bottom of fresh water because the weight of the water that the egg pushes aside is less than the weight of the egg itself. However, salt water is heavier than fresh water. An equal amount of salt water produces a greater upward force and this keeps the egg floating. When you have a layer of fresh water above the salt water, the egg floats between the two, buoyant over the salt water.

Sequence
worksheet
needed.

Day Two

1. Experiment Procedures:

- Set an unbroken raw egg in a drinking glass full of fresh water. You will see that the egg sinks to the bottom.
- Remove the egg and add the heaping tablespoon of salt to the water. Stir to dissolve. Now place the egg back in the glass. This time it should float.
- Remove the egg from the glass. Pour out half of the salt water.
- Fill the second glass full of fresh water and pour it into the glass half filled with salt water, until it is filled. (It is important to pour slowly and gently so that the fresh water and salt water do not mix together.)
- As before, set the egg into the glass. The egg should float halfway down.

2. Have students complete worksheet.

Evaluation / Assessment:

- Student participation in classroom activities
- Completed worksheet

Extension / Integration Ideas:

- Have students record their conclusions by drawing the outcome of the experiment themselves.
- The students will read and discuss color sheets after the experiment.
- Experiment with other objects to see if they float or sink in fresh water and salt water.

Source:

Learn and Discover: Fun Science by David L. Drotar



A bird needs _____.



A monkey needs _____.



A bee needs _____.



A woodpecker needs _____.

snake needs _____.



A tree needs _____.

Subject / Topic of Study: Science / Food Chain / Interdependence of Life

Grade Level: 2

Time Consideration: Prep time 10-15 minutes
Lesson time 40 minutes

Purpose / Objectives:

- S.2.17 Identifies the many feeding relationships possible among various plants and animals. Illustrates food chains and food webs and predator-prey relationships.
- S.2.16 Matches various animals and plants to their habitat based on needs
- S.2.18 Recognizes how plants and animals interact and depend on one another. Illustrates the many ways plants and animals interact (pollination, shelter, and seed dispersal).

Materials / Resources Needed:

- The Great Kapok Tree by Lynne Cherry
- Index cards 3x5
- Interdependence worksheet

Activities / Procedures:

1. Visit the Sun Center at the reflecting pond in the Living Classroom. Read The Great Kapok Tree to the class.
2. Discuss with students how the animals depended on the forest for various needs, e.g., food and shelter.
3. Hand out to each student an index card on which an animal, insect, or plant is labeled. Give the students 5 minutes to pair or triple up with others that hold a card with something their animal, insect, or plant is dependent on. Example: A bee with a flower or a monkey with a tree, etc.
4. At the end of 5 minutes discuss the relationships.

Evaluation / Assessment:

- Return to classroom to complete Interdependence Worksheet.

Extension / Integration Ideas:

- Construct a food chain
- Lesson on Endangered Species
- Make Rain Forest books
- Venn Diagrams

Subject / Topic of Study: Science / Ecology: Interdependence of Life

Grade Level: 2

Time Considerations: 3 days or more
(This lesson should be taught in 2 or 3 lessons to be able to make comparisons of animal and bird locations.)

Purpose / Objectives:

S.2.16 Matches various animals and plants to their habitat based on needs.

Materials / Resources Needed:

- "Map It" worksheet

Activities / Procedures:

Day One

1. Gives students a copy of the "Map It" worksheet.
2. Take a hike to the Living Classroom. Follow the "Map It" map, starting at the beginning of the trail and stopping on the trail in front of the Pioneer Cabin.
3. Have students draw (small) figures on the map where the animals and birds they see appear.

Day Two

4. Ask students the following questions:
 - How many animals and birds can he or she find and mark on the map?
 - Can you name these animals and birds?
 - Do they appear in the same area on other days?
 - Where are their homes?
 - What do they eat?
 - Where do they find water?
5. Repeat #2 and #3

Evaluation / Assessment:

- The student's ability to identify at least 3 animals and birds with 90% accuracy.

Map It
worksheet
needed

Subject / Topic of Study: Science / Ecology: Interdependence of Life

Grade Level: 2

Time Considerations: 30 minutes

Purpose / Objectives:

S.2.18 Recognizes how plants and animals interact and depend on one another.
Illustrates the many ways plants and animals interact.

The student will demonstrate the interdependency of living things.

Materials / Resources Needed:

- Tape
- Picture/Word cards (included with lesson plans)

Activities / Procedures:

1. Tape cards on the bulletin board. Ask students to tell you where to draw the lines between pictures of things that interact.
2. Remove or cover up one card and ask students how the removal of that animal or plant affects the environment.

Evaluation / Assessment:

- Teacher observation
- Student participation

Extension / Integration Ideas:

- Introduce a problem (water pollution, insecticides that kill plants and grasses), and ask students how it will affect the web.

Sources:

Theme Book Series: Ecology (Grades 2-3), 1991 Frank Shaffer Publications, Inc.

Picture/
word cards
needed

Subject / Topic of Study: Science / Ecology: Interdependence of Life

Grade Level: 2

Time Considerations: 6 days (30 minute lessons)

Purpose / Objectives:

S.2.1 Asks questions, classifies objects based on similarities and differences, makes inferences and predictions. Uses evidence to construct explanations.

S.2.4 Uses appropriate tools to collect and analyze data and solve problems.

LA.2.38 Prints legibly:
•Correctly forms letters and numbers.
•Correctly spaces words and sentences.

LA.2.40 Writes a minimum of three sentences about a topic.

LA.2.43 Applies correct principles of grammar:
•Writes complete sentences
•Uses correct capital letters
•Uses correct punctuation
•Applies correct rules of usage and expression

LA.2.44 Communicates ideas by using the writing process:
•Prewriting
•Drafting
•Revising
•Editing
•Publishing

LA.2.45 Uses available technology to assist in writing.

Materials / Resources Needed:

- Ecology quiz (included with lesson plans)
- Research report (included with lesson plans)
- Media Center
- Internet

Research
report
needed

Ecology Quiz

Fold under the answers. Take the quiz. Now check your answers. Take the test home to share with your family!

1. How much water does a five-minute shower use?
 A. 10 gallons B. 25 gallons C. 35 gallons

2. About how much plastic packaging does each American throw away in a year?

A. 5 pounds B. 20 pounds C. 60 pounds

3. How much of the earth is covered by oceans?

A. $\frac{2}{3}$ B. $\frac{1}{2}$ C. $\frac{3}{4}$

4. How many times can you recycle the aluminum in aluminum cans?

A. once B. three times C. again and again

5. By turning the water off while you brush your teeth, how much water can you save?

A. 3 gallons B. 6 gallons C. 9 gallons

6. Which one of these will not decompose?

A. apple core B. foam cup C. banana peel

7. What is the best kind of bag to use when you go shopping?

A. brown paper B. white paper C. cloth

8. How much paper do most Americans use in a year?

A. over 500 pounds B. 50 pounds C. 200 pounds

9. Which causes the most air pollution?

A. fireplaces B. cars C. bicycles

10. To save water, grass should be cut

A. 2" to 3" high B. 1" high C. daily

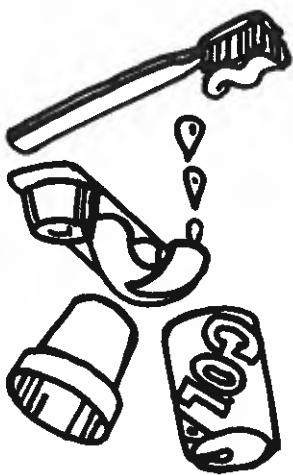
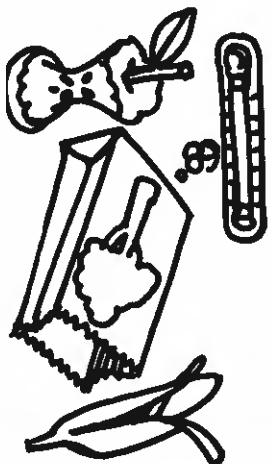
11. Recycling 150 pounds of paper saves

A. one tree B. a forest C. heat

12. On winter days, your heater should be set at
 A. 72 degrees B. 62 degrees C. 68 degrees

Fold under

Fold under



- Quiz Answers:
1. B, 25 gallons
 2. C, 60 pounds
 3. A, $\frac{2}{3}$
 4. C, again and again
 5. C, 9 gallons
 6. B, foam cup
 7. C, cloth
 8. A, over 500 pounds
 9. B, cars
 10. A, 2" to 3"
 11. A, one tree
 12. C, 68 degrees

Subject / Topic of Study: Science / Structure of Matter

Grade Level: 2

Time Considerations: 4-5 days (30-45 minute sessions)

Purpose / Objectives:

- S.2.1 Asks questions, classifies objects based on similarities and differences, communicates with others, makes inferences and predictions, uses estimation and measurement, uses evidence to construct explanations, and makes sketches and diagrams to explain ideas.
- S.2.8 Predict changes in states of matter such as when water is heated or frozen.
- S.2.9 Recognizes that all matter does not change the same way. Observes a variety of changes such as: a nail in water compared to plastic in water; a wooden block in the freezer compared with water in a freezer; slice of apple compared with slice of orange.

Materials / Resources Needed:

- Objects/Materials: chocolate, water, wood, plastic, soap, rubber ball, caramel, sugar, popsickle, banana, apple, grapes, nail, fork, magnet, paper, chalk
- Freezer
- Hot plates
- Metal bowl/pot
- Clipboard

Activities / Procedures:

Day One

1. Students fill in predicting/observing graph with states of matter and predict outcomes when frozen or heated. After completing this - review states of matter as an entire group. Put objects in the freezer.

Day Two

2. One by one observe objects/materials taken out from the freezer. Talk about the color, texture, state of matter, and other changes. Record this on a graph.

Day Three

3. One by one observe objects/materials when heated in a pot on hot plate. Talk about the changes in color, texture, consistency, and state of matter. Record these changes on graph.

add the worksheet "Observing/Predicting Graph" to the materials list.

Day Four

4. Visit the Living Classroom and find objects to freeze or heat. Students write these on the graph/clipboard. Predict results. Come back to classroom to freeze and heat objects. Record results of heated objects.
5. Two hours later, record results on objects in freezer. Review and discuss that matter does not change in the same way.

Evaluation / Assessment:

- Day 4 activities.

Extension / Integration Ideas:



- Take a graph home and do experiments with a parent. Bring back to share results with class.

Observing / Predicting Graph

Object/
Material Original
State of
Matter Physical
Characteristics Freezer
Prediction Freezer
Outcome Heated
Prediction Heated
Outcome

↓ ↓ ↓ ↓ ↓ ↓ ↓

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.



Subject / Topic of Study: Social Studies - Economics / Farm Life

Grade Level: 2

Time Considerations: 45 minutes for outdoor activity / introduction
45 minutes for indoor activity / conclusion
*This activity will need to be done during planting season

Purpose / Objectives:

SS2.5 The student will categorize the different resources used in a farm setting as either a natural, human, or capital resource.

M2.32 The student will construct a graph that compares the different amounts of resources used.

Materials / Resources Needed:

- Living Classroom - log cabin / garden area
- Tools for gardening (only tools early settlers might have used)
- Seeds for planting
- Paper
- Crayons
- Chart paper
- Tape
- 3x5 index cards
- Early Farm Life (1983) by Lisa Gunby
- Resources Bar graph

Activities / Procedures:

1. Share the book Early Farm Life with the children as an introduction to the activity.
2. Take the children to the log cabin / garden area of the Living Classroom. Provide tools and seeds so that children may do some planting. Make sure that each child is allowed an opportunity to do some work.
3. Lead the class in a discussion about the work done outside in the garden. Have the children describe the different types of resources that were used. Make a class list of these resources.
4. Assign each child several resources from the list to illustrate on 3x5 cards. Come back as a group and help the children categorize their resource as either a human, natural, or capital resource. Have them place each 3x5 card under the appropriate heading on a piece of chart paper.

needed:
Resources
Bar Graph

5. Give each child a copy of the Resources Bar graph to complete and answer the questions.

Evaluation / Assessment:

- Completed graph and questions

Extension / Integration Ideas:

- Read aloud Little House in the Big Woods by Laura Ingalls Wilder. Have the children keep a running list of human, natural, and capital resources used by the family in their reader response journals.
- Discuss ways farming might be different today. Compare and contrast different resources used.

Subject / Topic of Study: Social Studies - Geography

Grade Level: 2

Time Considerations: 3 days - 45 minutes a day

Purpose / Objectives:

- SS.2.7 Describes specified locations on a map using cardinal directions.
- SS.2.8 Explains the difference between natural and man-made resources.
- LA.2.8 Communicates effectively when using descriptive language, relating experiences, and retelling stories read, heard, or viewed.

Materials / Resources Needed:

- Map of Living Classroom
- Paper
- Pencil
- Compass

Activities / Procedures:

Day 1

1. Review map skills - how to read the legend - North, South, East, and West. Go over a map of the Living Classroom on the board with N, S, E, W, and legend symbols.

Day 2

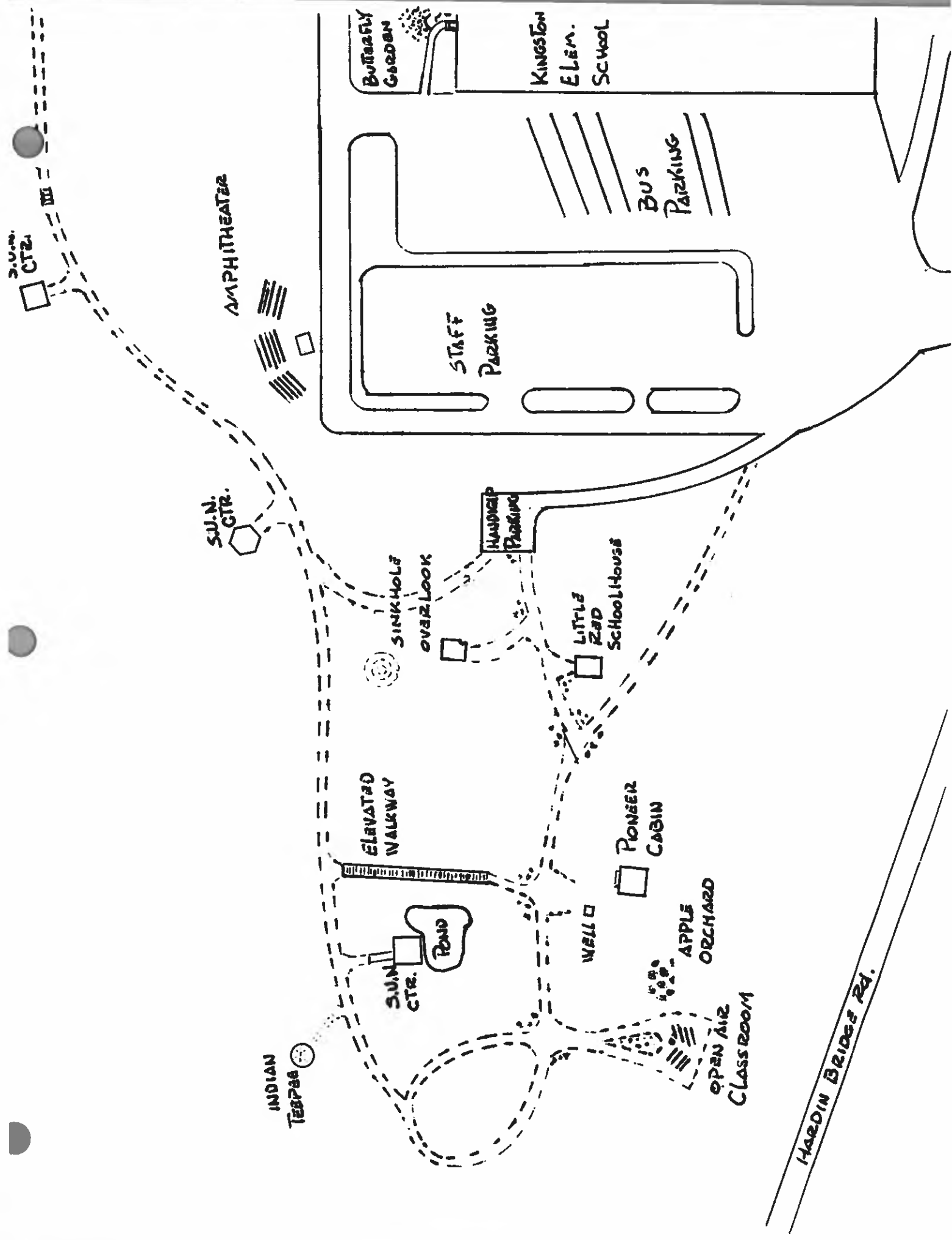
2. Break students into small groups before visiting the Living Classroom. Each group will need a map, clipboard, pencil, and a compass.
3. Students will visit five places on their map and write three describing words about each place.

Day 3

4. Teacher reads describing words of the places and students guess which place a group was describing. Determine how many groups used the same words.

Evaluation / Assessment:

- Class compilation of data about places in the Living Classroom.



Living Classroom Curriculum Plans

Subject / Topic of Study: Math - Problem Solving

Grade Level: 2nd

Time Considerations: 30 minutes

Purpose / Objectives: (OCC Correlation)

M2.3 M2.38 M2.1 The children will use addition and subtraction to solve one and two word problems by using a pictograph.

Materials / Resources Needed:

- Living Classroom – apple orchard, sun center #3
- Individual copies of worksheet “Apples Harvested”
- Clipboards, pencils

Activities / Procedures:

1. Lead the children to the Living Classroom and let them explore the orchard. Encourage them to estimate how many apples are on each tree and then how many apples are on all the trees.
2. Take the children to sun center #3. Make sure each child has a copy of the attached worksheet “Apples Harvested”.

Evaluation / Assessment:

- Completed worksheet

Extension / Integration Ideas:

- Share a story with the children after the activity such as Johnny Appleseed by Steven Kellogg.

Name _____

Use the graph to solve the problems.

	Apples Harvested
Sam	○ ○ ○ ○ ○ ○ ○ ○
Trey	○ ○ ○
Kara	○ ○ ○ ○ ○ ○
Sally	○ ○ ○ ○ ○
Greg	○ ○ ○ ○

○ = 10 apples

Count how many apples Sam picked.
Count how many apples Greg picked.
How many did they pick all together? _____

② Find how many apples Kara picked.
Find how many apples Trey picked.
How many more apples did Kara pick than Trey? _____

③ Which two people picked the same number of apples as Sam? _____

Activities / Procedures:

Day One

1. Pass out the ecology quiz to students.
2. Instruct students to fold under the answers on the dotted line.
3. Students take the quiz.

Day Two

4. Read and discuss each answer.
5. Assign a question for each student to research.

Day Three

6. Go to the Media Center to check out books for topics.

Day Four

7. Use the Internet to look up information on topics.

Day Five

8. Write report.

Day Six

9. Rewrite report for publishing.

Evaluation / Assessment:

- Completed report.

Source:

Theme Book Series: Ecology (Grades 2-3), 1991 Frank Shaffer Publications, Inc.

Subject / Topic of Study: Language Arts / Apples

Grade Level: 3

Time Considerations: 5 days (30 to 45 minutes)

Purpose / Objectives:

- LA.3.28 Identifies characters' traits.
- LA.3.46 Responds to literal, inferential, and evaluative questions about literature.
- LA.3.48 Identifies literary forms (fiction, non-fiction).
- LA.3.49 Discriminates between realism and fantasy.
- S.3.4 Actively engages in the learning process via hands-on science activities and experiences.

Materials / Resources Needed:

- The Apple Tree by Lynley Dodd
- White art paper
- Johnny Appleseed by Steven Kellogg
- Character tree activity sheet
- Apple

Activities / Procedures:

1. Read and discuss Johnny Appleseed by Steven Kellogg.
2. Teacher will read The Apple Tree by Lynley Dodd and discuss what apple trees look like in each of the four seasons.
3. Students will divide a sheet of white paper into 4 parts. They will label each part with a season and illustrate the appearance of the apple tree during that season.
4. Guide students in developing a character tree. Demonstrate how to select a character trait and complete the character tree activity sheet.
 - For example: on Johnny Appleseed by Steven Kellogg - helped pioneers, friendly to animals, etc.
5. Teacher will help students compile a list of items made from apples. Example: applesauce, apple pie, apple jelly, etc. Students will write a Haiku about apples.
 - Example: Apples are so great
They are ripe in the autumn
I love to eat them.
6. Take students to the apple orchard in the Living Classroom. Discuss the stage

that the trees are in during the visit. Have a child volunteer to take a bite out of an apple and let the apple stand for a few minutes. Discuss what happens to the apple (see attached "Quick Spoil" experiment).

7. Review story of Johnny Appleseed. Students will watch video "Johnny Appleseed" VT421. (52 minutes)

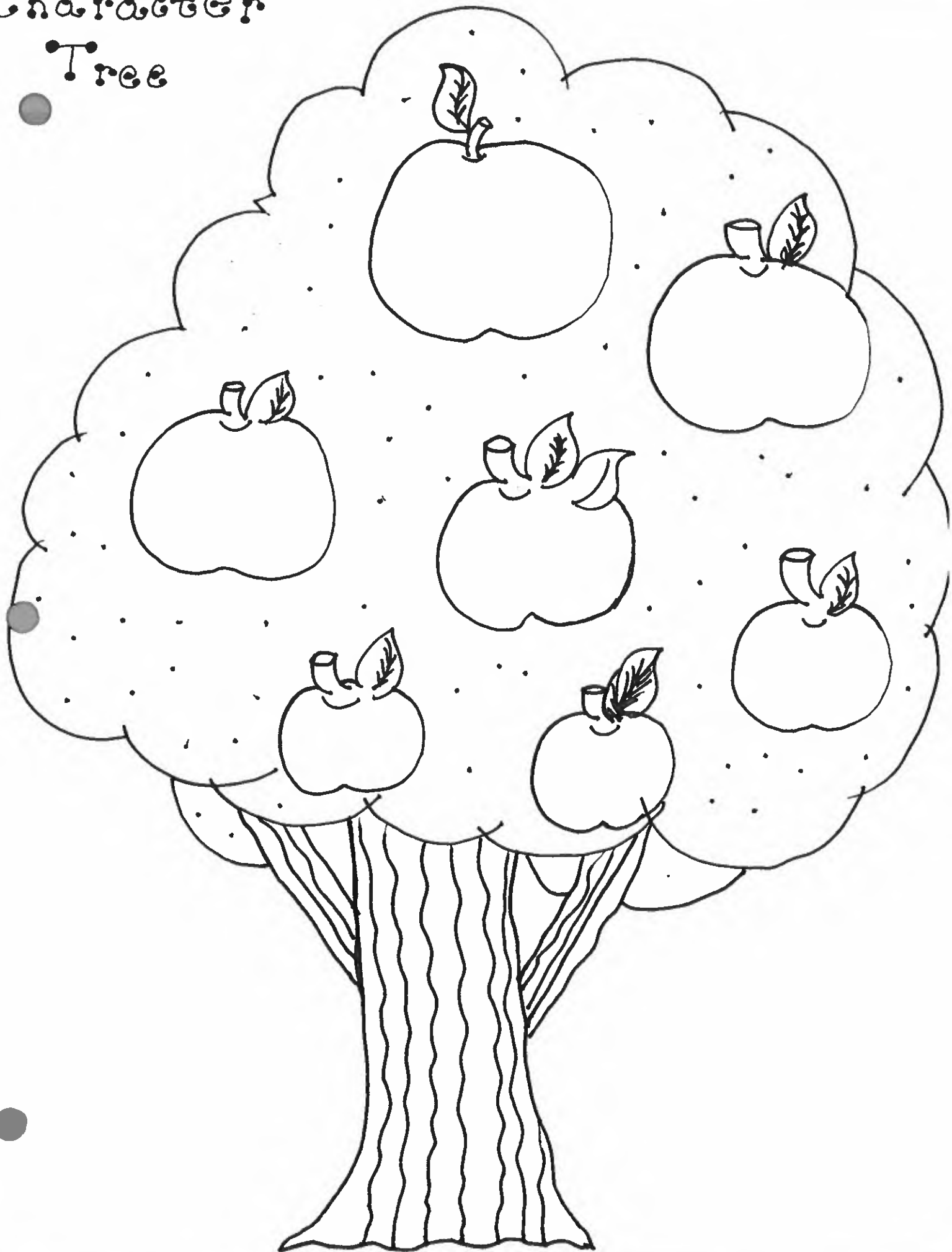
Evaluation / Assessment:

- Accelerated Reader Test
- Haiku

Extension / Integration Ideas:

- Make caramel apples.
- Make a mural of an apple orchard.

Character Tree



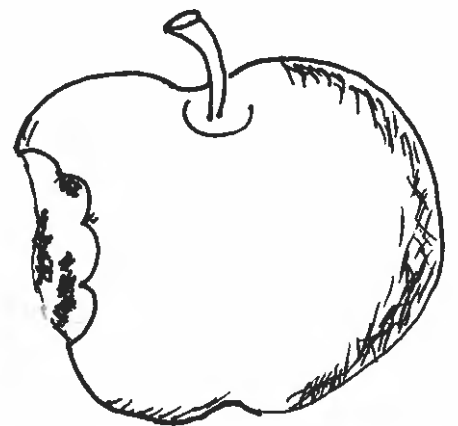
Quick Spoil

Day

1. Have a volunteer take a bite out of apple.
2. Let the apple stand for a few minutes. Discuss what happens.

Explanation

Fruits are protected by their skins or peels. When you took a bite out of the apple, you removed the skin that was protecting the inside. The inside of the apple was exposed to the air. An oxidation process began. Oxidation is a chemical reaction which causes the inside of an apple to react with oxygen and begin to decay.



Subject / Topic of Study: Science - Layers of the Forest
(Integrate with "Flames and Rebirth" from reading textbook.)

Grade Level: 3

Time Considerations: 45 minutes

Purpose / Objectives:

S.3.4 Actively engages in the learning process with activities and experiences.

Materials / Resources Needed:

- Living Classroom
- Clip boards
- Sketch paper
- Pencils
- "Flames and Rebirth" from Third grade reading textbook series HBJ

Activities / Procedures:

1. Using board, review from the story "Flames and Rebirth", the 5 main layers of the forest (canopy, understory, shrub layer, herb layer, forest floor), p. T239 in teacher's edition of reading series (HBJ).
2. Take students (with clipboard, paper and pencils) to the Living Classroom. Observe the layers of the forest and discuss observations. Have students sit or stand at a S.U.N. center and draw and label the 5 main layers. Students should write a sentence on the make up of each layer (e.g. The forest floor is covered with moss, leaves, and twigs.).

Evaluation / Assessment:

- Oral participation
- Labeled illustration with sentences

Extension / Integration Ideas:

- Make a diorama showing the 5 main forest layers.
- Take students to the Living Classroom. Observe and discuss the kinds of animal homes and food at each layer of the forest.

Subject / Topic of Study: Language Arts / Art

Grade Level: 3

Time Considerations: 2 days, 45 minutes each day

Purpose / Objectives:

FAD.3.8 Expresses thoughts, ideas, and feelings through structured improvisation.

LA.3.3 Follows multiple oral directions.

LA.3.8 Communicates effectively when using descriptive language.

LA.3.48 Identifies literary forms (poetry).

Materials / Resources Needed:

- Clipboard
- Paper
- Pencil
- Ten Flashing Fireflies by Philemon Sturges

Activities/Procedures:

Day One

1. Students walk with teacher along trail in Living Classroom. When teacher stops students need to find something and draw it. Then write a sentence to describe what they are looking at. Students are given a minute or so at each stop. This activity is repeated 5 times during the walk. Take students to one of the S.U.N. centers to sit and discuss their observations.

Day Two

2. Walk with class to reflecting pond. Students are to write a Haiku poem using descriptive words.
 - Haiku*: Japanese poetry with 3 lines. The first line has 5 syllables, the second line has 7 syllables, and the third line has 5 syllables.

Example: Beautiful blue bird
Singing your song in the breeze
Sing with me today.

3. Have students share poems orally while sitting at the S.U.N. Center at the reflecting pond.
4. Teacher will read orally Ten Flashing Fireflies by Philemon Sturges and guide students in recognizing descriptive words in story.

Evaluation / Assessment:

- Poem
- Descriptive sentences
- Oral Participation

Extension / Integration Ideas:

- Write a diamante poem
- Video: "Frogs Are Funny, Frogs Are Fat" in media center

Subject / Topic of Study: Language Arts - Nature Watch

Grade Level: 3

Time Considerations: 30 minutes

Purpose / Objectives:

FAVA.3.2 Produces art by drawing.

LA.3.8 Communicates effectively when using descriptive language.

LA.3.41 Writes in a variety of genres, including content area pieces.

Materials / Resources Needed:

- Living Classroom
- Clip boards
- Activity sheet (Nature Watch)
- Pencils

Activities / Procedures:

1. Introduce activity by reading Joanne Ryder's Step Into the Night or Mockingbird Morning.
2. Take students (with clipboard, activity sheets and pencils) on a walk through the Living Classroom. Have students observe nature for 10 minutes. Then have students write down observations with a partner.

Evaluation / Assessment:

- Completion of Nature Watch worksheet

Extension / Integration Ideas:

- *Homework:* Have students observe nature somewhere near their home and share observations with the class (e.g. a flower bed, a field, a yard, a pond).

Subject / Topic of Study: Language Arts / Science: Rocks

Grade Level: 3

Time Considerations: 30 - 45 minutes

Purpose / Objectives:

LA.3.41 Writes in a variety of genres (responds to literature).

LA.3.42 Applies correct principles of grammar, parts of speech, and usage and mechanics

LA.3.38 Writes legibly.

Materials / Resources Needed:

- Sylvester and the Magic Pebble by William Steig
- Clipboards
- Paper
- Pencil
- Pebble

Activities / Procedures:

1. Students will go to S.U.N. center #3 (reflecting pond) in the Living Classroom.
2. The teacher will read Sylvester and the Magic Pebble by William Steig out loud.
3. Show students a pebble and have them pretend that it's magic. They will write three wishes and share their wishes.

Evaluation / Assessment:

- Accelerated Reader Test: Sylvester and the Magic Pebble

Subject / Topic of Study: Social Studies / Change Over Time / Language Arts

Grade Level: 3

Time Consideration: 3 days (30-45 minutes each day)

Purpose / Objectives:

SS.3.23 The student will be able to describe local community in regard to origin, growth, and change over time.

LA.3.29 Draws conclusions, makes predictions, compares-contrasts, and makes generalizations.

Materials / Resources Needed:

- Venn Diagram worksheet
- Clipboard

Activities / Procedures:

1. Read to students from resources and discuss. (List appears under Sources)
2. Visit the pioneer schoolhouse in the Living Classroom. Students should take their clipboard and Venn Diagram. Sit in the pioneer schoolhouse and complete the diagram comparing the pioneer schoolhouse with their modern day school building.. Return to the regular classroom to review findings.
3. Students will use Venn Diagram to assist them in drawing both schoolhouses. Write a few sentences about each schoolhouse.

Evaluation / Assessment:

- Completed Diagram
- Completed Drawing

Extension / Integration Ideas:

- Field trip to New Echota
- Game of Marbles

Sources:

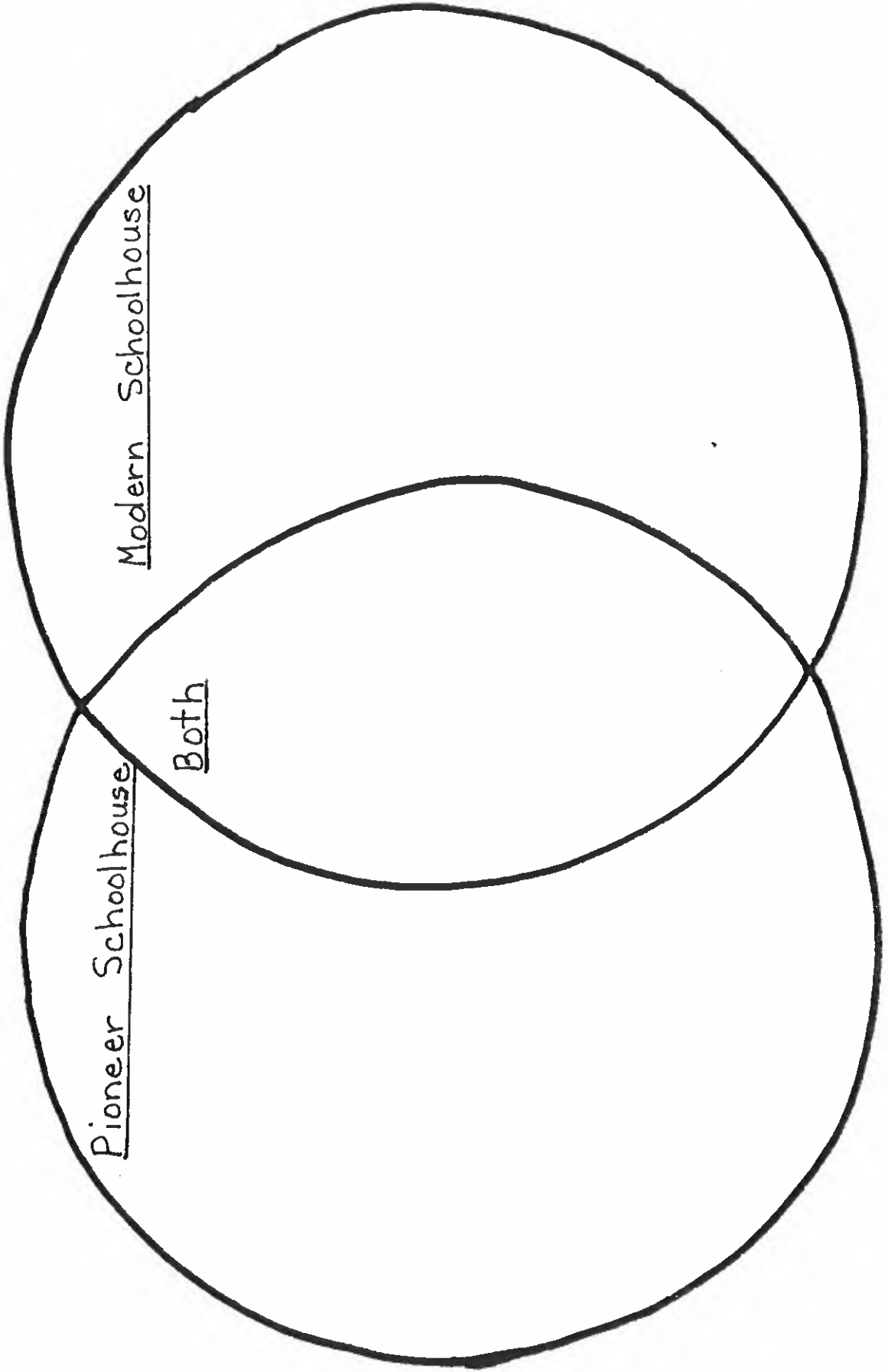
Early Settler Children by Bobbie Kalman (pp.40-41)

Colonial Life by Bobbie Kalman (pp.18-19)

Early Schools by Bobbie Kalman (pp.8-11, 14, 16, 20-22, 31-33, 46-48, 50-51)

A One Room School by Bobbie Kalman (p.5)

Venn Diagram



Subject / Topic of Study: Social Studies - maps

Grade Level: 3

Time Considerations: Two days (45 minutes each day)

Purpose / Objectives:

SS.3.14 The student will determine the type of map needed for a specific purpose.

Materials / Resources Needed:

- Pictorial map of the Living Classroom.
- Skeletal map #1 of the Living Classroom for each student
- Clip board for each student
- Skeletal map #2 of the Living Classroom for each student

Activities / Procedures:

Day One

1. Discuss purposes of a map and how to use map symbols.
2. Give each student a clipboard and a skeletal map #1 of the Living Classroom.
3. Explain to students that during their walk through the Living Classroom they will label the sites on their map. Proceed to the Living Classroom.

Day Two

4. Students will use their skeletal map #1 to create their own pictorial map of the Living Classroom on Skeletal map #2. Students will include map key in corner of map.

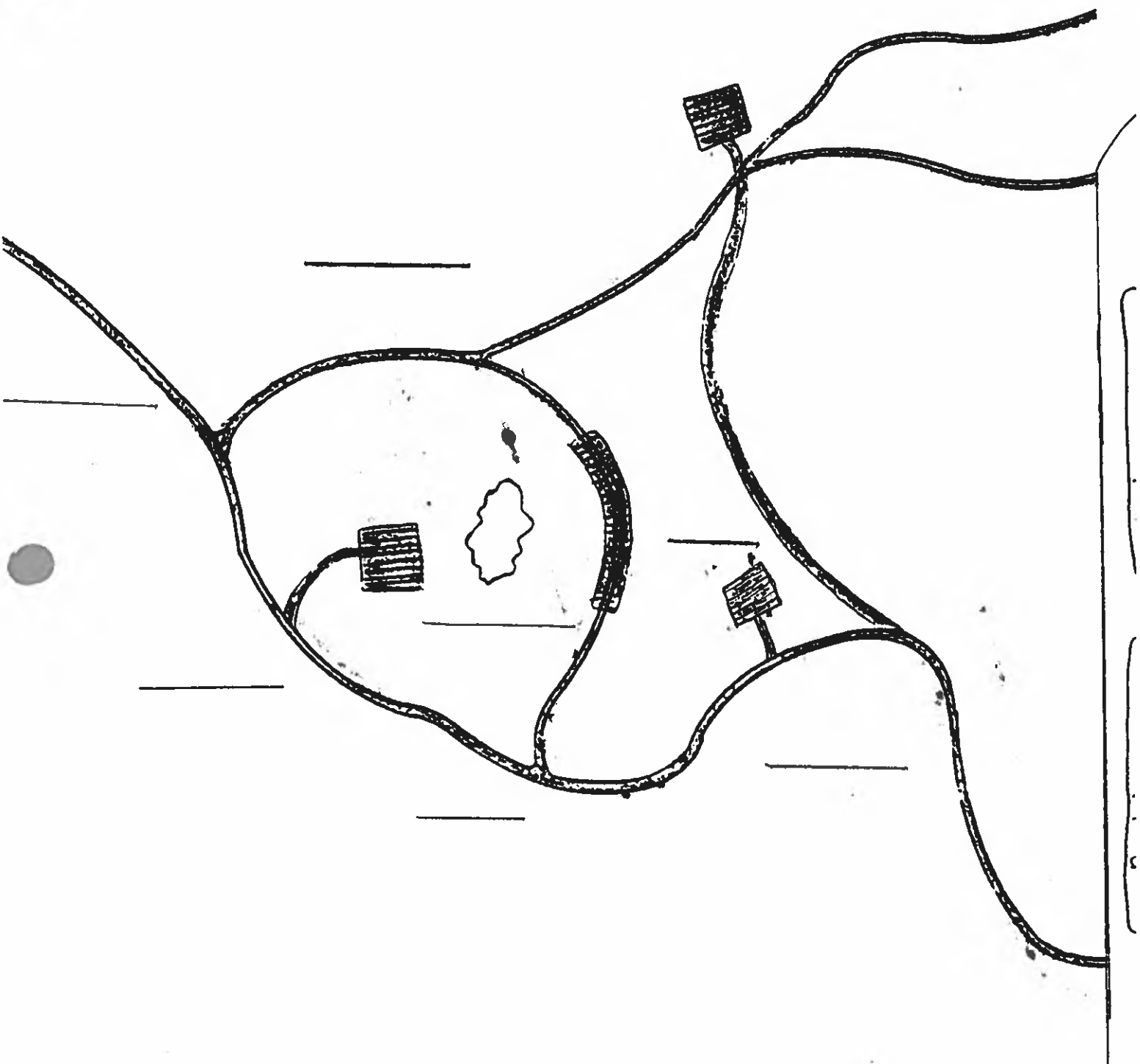
Evaluation / Assessment:

- Students' completed maps

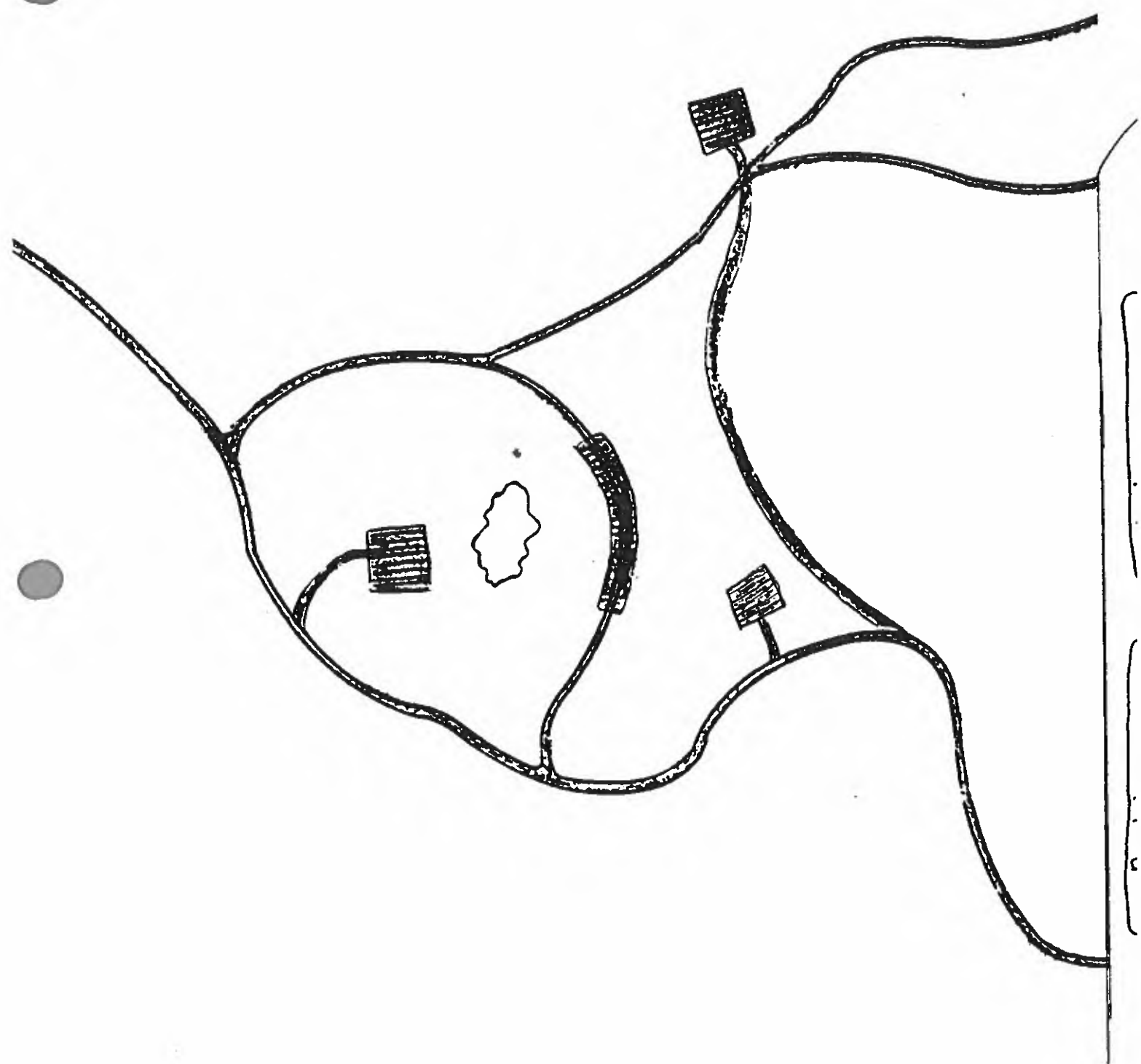
Extension / Integration Ideas:

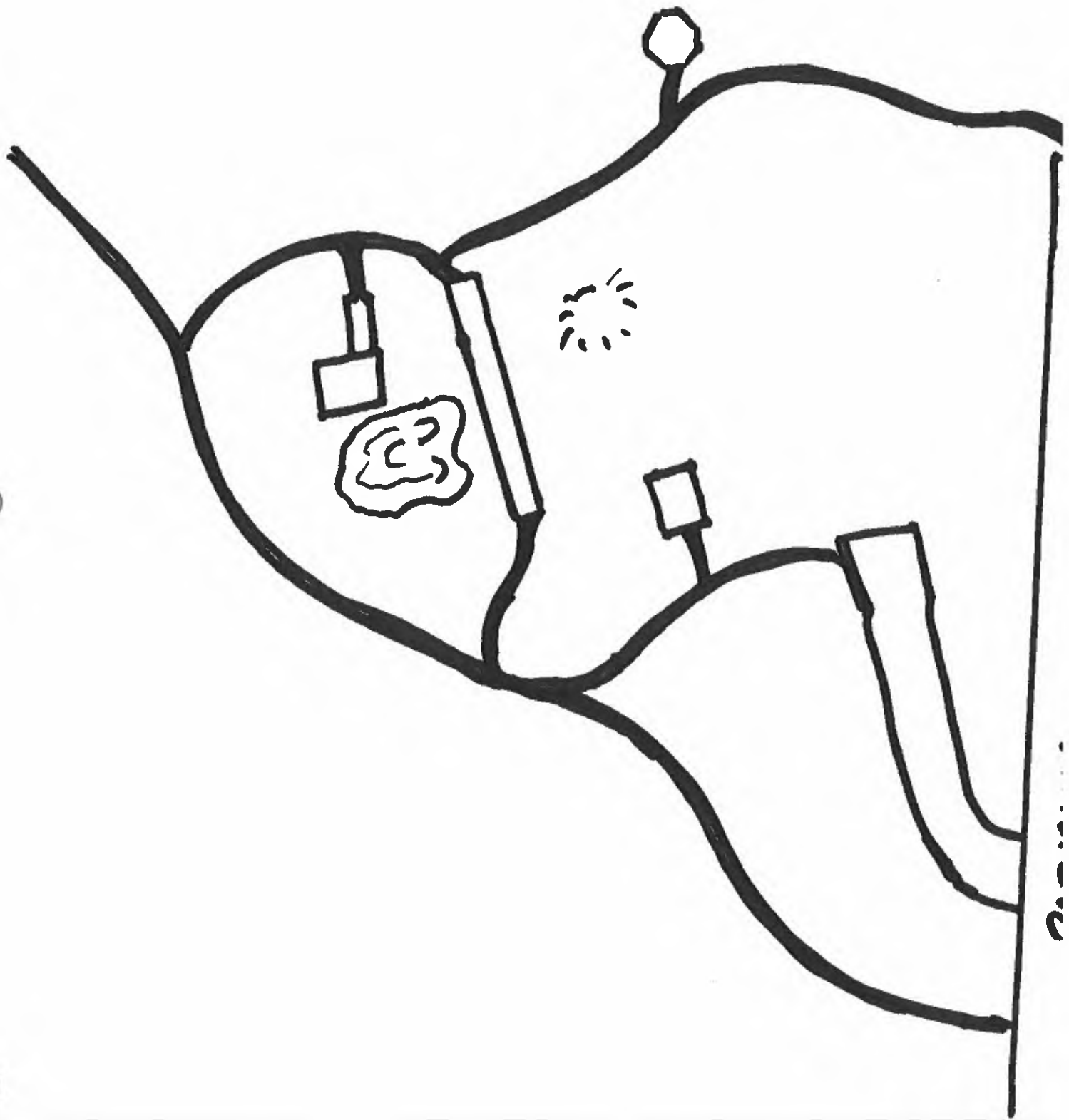
- Students will make a pictorial map of one of the following: their home, their street, their bedroom, or their classroom.

#1



outline by Max Hall





Maps

Call No.	Author	Title	Search #
151.2 Bra	Branley, Franklyn	North, south, east and west.	1
4004 VT	VT	Mystery map.	1
4183 VT	VT	Map skills: using different maps together (MAP	1
4205 VT	VT	Maps-know where you are going.	1
4504 VT	VT	Problem solving: using maps (MATH WORKS)	1
4631 VT	VT	Latitude and longitude.	1
526.8 Eps	Epstein, Beryl	First book of maps and globes.	1
6224 VT	VT	Maps: symbols and terms.	1
6225 VT	VT	Maps: where am I?	1
912 Arn	Arnold, Caroline	Maps and globes.	1
912 Bro	Broekel, Ray	Maps and globes.	1
912 Kno	Knowlton, John	Maps and globes.	1
912 W	Weiss, Harvey.	Maps	1
912.73 C	Clouse, Nancy L.	Puzzle maps U.S.A.	1
AV-SS		Introduction to map reading.	1
AV-SS		Map and globe skills.	1
AV-SS	SVE	Understanding maps and globes.	1
BB	BB	A trip to mini town.	1
BB	BB	Where's Henry?	1
BBK	BBK	A trip to mini town.	1
BBK	BBK	McBean's flying machine.	1
BBK	BBK	Where's Henry?	1
E C	Cobb, Annie	Detective Duckworth to the rescue.	1
F C	Cobb, Annie	Mouse's birthday party.	1
		Exploring our world with maps.	1
PRO 025.56 Zak	Zakalik, Leslie	Study skills socery.	1
PRO 372 Jon	Jones, Daisy M.	From actors to astronauts.	1
PRO 613.6 Rod	Roderman, Winifred Ho	Getting around cities and towns.	1
PRO 900 Flo	Flores, Anthony	The walls belong to kids: social studies.	1
PRO 900		Social studies through children's literature.	1
PRO 912 Bal	Balsely, Irol Whitmore	Where on earth? Using the atlas to improve ma	1
PRO 912 Hov	Hovinen, Elizabeth	Teaching map and globe skills.	1
REF 338.1 Agr		Agriculture and vegetation of the world.	1
REF 363.7 End		The endangered world.	1
REF 552 Roc		Rocks and minerals of the world.	1
REF 910 Phy		The physical world.	1
REF 912 How		How to read a map.	1
VF		Maps, outline.	1
VF		Maps, using.	1
VF		United States - regions.	1

#	Type	Criteria
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1	Keyword	maps
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Subject / Topic of Study: Science: Ground Temperature

Grade Level: 3

Time Consideration: 30 minutes

Purpose / Objectives:

S.3.4 The student will actively engage in the learning process via hands-on/minds-on science activities and experiences.

M.3.11 The student will measure using appropriate instrument.

Materials / Resources Needed:

- Two thermometers
- Trowel
- Piece of cardboard the size of one thermometer
- Living Classroom

Activities / Procedures:

1. Take materials and go to an area in the Living Classroom.
2. Dig a hole in the ground with the trowel.
3. Put a thermometer in the hole and cover it with the cardboard.
4. Put the other thermometer on top of the ground in the sun.
5. Wait about 5 minutes and read each thermometer. Have students find out what the difference is between the readings.

Explanation: Temperature underground was lower than on the one above ground. On a hot day, the rays from the sun warm objects above ground but do not reach below ground. Discuss basements.

** Can be tried on a cold day with reverse readings because it would be insulated by the soil from the cold air.*

Evaluation / Assessment:

- Student participation

Subject / Topic of Study: Science / Camouflage (Fall of the year)

Grade Level: 3

Time Considerations: 30 minutes

Purpose / Objectives:

S.3.4 Actively engages in the learning process via hand-on science activities and experiences.

Materials / Resources Needed:

- 1 sheet each of brown, green, red, white, and yellow paper
- Leaves that have fallen
- Living Classroom

Activities / Procedures:

1. Tear each sheet of paper in half so that you have 2 sets of paper in each color.
2. Go to Living Classroom.
3. Place one set of colored sheets in areas where colors closely match the colors of the fallen leaves.
4. Place other set of colored sheets where colors are very different from colors in the environment.
5. Go a short distance from both sets of colored sheets. Discuss what you see.
Explanation: Camouflage is the coloring some animals have that makes them difficult to see in their environment. In the experiment, you see that it is difficult to recognize for a distance the paper that blended in with colors of the environment.

Evaluation / Assessment:

- Class participation

Source:

Addison-Wesley Science.

Subject / Topic of Study: Science: Ants

Grade Level: 3

Time Consideration: 30 minutes

Purpose / Objectives:

S.3.4 The student will actively engage in the learning process via hands-on/minds-on science activities and experiences.

Materials / Resources Needed:

- 1 teaspoon sugar
- Tap water
- 2 cups
- Package of artificial sweetener
- 2 bottle caps
- Living Classroom

Activities / Procedures:

1. In one cup mix sugar and tap water (small amount).
2. In the other cup mix artificial sweetener with the same amount of tap water.
3. Fill a bottle cap with sugar water and another bottle cap with artificial sweetener mixture. (Label each cap as to which mixture it contains)
4. Take caps of mixture to the Living Classroom and place in an area where ants are seen.
5. Observe which sweetener the ants prefer.

Explanation: Ants know the difference between the two. They went to the real sugar because it contains the natural compounds that they eat. Artificial sweeteners contain chemical compounds developed in laboratories.

Evaluation / Assessment:

- Student participation

Subject / Topic of Study: Science - Animal Tracks

Grade Level: 3

Time Consideration: 2 days - 30 minutes each day

Purpose / Objectives:

S.3.12 The students will recognize and describe basic life processes such as gathering food.

Materials / Resources Needed:

- Several large baking trays or cardboard boxes with 1" sides
- Sand, dirt, or flour
- Cookies, peanut butter on crackers, or other food you think animals would like
- Living Classroom

Activities / Procedures:

1. Fill the boxes or trays with sand, dirt, or flour and smooth it out. (If using sand or dirt, make it wet enough for a hand print to show)
2. Put the food in the middle of the box.
3. Place the boxes in various locations in the Living Classroom overnight.
4. The next day, check to see if the food is gone and if there are any tracks. Tracks may be in the box or around it. Try to identify the tracks of the animals.

Evaluation / Assessment:

- Student participation

Extension / Integration Ideas:

- Draw the animal tracks found.
- Integrate with "Crinkleroot's Book of Animal Tracking" in Harcourt Brace Sea of Wonder.

Subject / Topic of Study: Science: Seasons of the Year

Grade Level: 3

Time Consideration: 30 minute period during each of the four seasons
30 minute period at end of school year

Purpose / Objectives:

S.3.4 The student will actively engage in the learning process via hand-on/
minds-on science activities and experiences.

LA.3.39 The student will write a short paragraph about a topic.

Materials / Resources Needed:

- Clipboard for each student
- Paper
- Pencil
- Camera
- Film
- Living Classroom

Activities / Procedures:

1. For 30 minutes during each season of the year, the students will sit at the reflecting pond making notes and sketches of what they observe. Teacher will take photographs of the area.
2. After the last observation, students will discuss the things observed during each season. These results can be charted as to similarities and differences found during each season.
3. Each student will choose their favorite season at the reflection pond and write a paragraph telling why it was their favorite.

Evaluation / Assessment:

- Student paragraph
- Participation

Extension / Integration Ideas:

- Design a bulletin board using photographs, drawings, and paragraphs.

Subject / Topic of Study: Science - How Seeds Travel

Grade Level: 3

Time Consideration: 45 minutes

Purpose / Objectives:

S.3.12 The student recognizes and describes basic life processes.

Materials / Resources Needed:

- Sock big enough to go over a child's shoe
- Piece of paper for each student
- Egg carton
- Magnifying glass
- Living Classroom

Activities / Procedures:

1. Have students go to a Sun Center in the Living Classroom and put a sock over their shoe.
2. Students walk for about 5 minutes off the trail.
3. Take the sock off and shake it over a piece of paper to collect anything that falls off.
4. Pick out all the seeds on the paper and any that are left on the sock.
5. Sort the seeds by putting matching seeds together in the same cups of an egg carton.
6. Look at each type of seed under the magnifying glass.
7. Discuss the following:
 - Why do some stick to the sock?
 - Did many seeds fall?
 - What are some ways seeds travel other than attaching to things?
(seeds with wings, seeds the wind scatters, pop-out seeds, seeds carried by water).
8. Discuss the importance of seeds traveling.

Evaluation / Assessment:

- Student participation

Extension / Integration Ideas:

- Drop a seed in front of a blowing fan and see how far it travels. That is how far the seed would travel in the wind. Which seeds travel farthest?
- Put the seeds in 2 inches of soil. Sprinkle soil over them. Put them near a window, keep moist, and see what grows.

Source: Nature in Your Backyard by Susan S. Lang pp. 30-31.

Subject / Topic of Study: Science - Leaves

Grade Level: 3 - 5

Time Consideration: One class period

Purpose / Objectives:

- The student will successfully find and identify 10 different native trees of Georgia.
- The student will study and examine each tree leaf according to size, shape, fruit, and flower.
- The student will work in small cooperative learning groups.

Materials / Resources Needed:

- Clipboards
- Leaf identification sheet
- Pencil or pen
- 12" ruler
- "Native Trees of Georgia" booklet
- Plastic bag

Activities / Procedures:

1. Divide the class into small groups of 3 or 4 students. Make sure that groups have all the materials needed for the activity. Explain to the students that as they go through the nature trail in the Living Classroom their group will need to collect 10 different leaves. (Leaves must be complete - no broken or chipped leaves, leaves cannot be the same shape but different sizes, look for the trees fruit or flower).
2. Each group will collect their leaves as they enjoy their walk along the nature trail. The group's leaves will be placed in the plastic bag for protection. Once all of the groups have collected 10 samples, the class will gather in one of the Sun Centers.
3. Each group, using the "Native Georgia Trees" booklet, pencil, clipboard, and leaf identification sheet will research and identify the different trees they have just seen on the trail.
4. After each group has identified their tree leaves, the group will have an opportunity to present their leaves to the class.

Evaluation / Assessment:

- Group presentation of leaves.
- Leaf Identification Sheets

Subject / Topic of Study: Science / Life cycle of a frog

Grade Level: 3

Time Considerations: 5 days (30 minutes each day)

Purpose / Objectives:

S.3.15 Recognizes and describes the life cycle of a frog. Illustrates the life cycle of a frog.

LA.3.8 Communicates effectively when using descriptive language, relating experiences, and retelling stories, read heard, or viewed.

LA.3.41 Writes in a variety of genres to include imaginative stories..

Materials/Resources Needed:

- Tadpole to Frog by Wendy Pfeffer worksheets #24, 25
- Frogs by Gail Gibbons
- Frogs and Toads and Tadpoles, Too by Allan Fowler
- Froggy Goes to School by Jonathan London
- Toad by Ruth Brown
- Worksheets:
 - Web worksheet
 - Comparing frogs and toads worksheet
 - Story starter worksheet
 - Graph a frog worksheet
- Frog booklet

Activities/Procedures:

Day One

1. Teacher will read orally From Tadpole to Frog by Wendy Pfeffer. Students will make a diorama of the life cycle of a frog (worksheets #24, 25).

Day Two

2. Read orally Frogs by Gail Gibbons. Students will complete the web worksheet on facts about frogs using descriptive words.

Day Three

3. Teacher will read orally Toad by Ruth Brown and Frogs and Toads and Tadpoles, Too by Allan Fowler. Students will complete worksheet comparing frogs and toads.

Day Four

4. Visit the reflecting pond in the Living Classroom to observe the frog in its habitat. After the observation period, students will sit at reflecting pond SUN center while teacher reads Froggy Goes to School by Jonathan London.

Day Five

5. Students will view "Frog and Toad Together" (VT427)

Evaluation / Assessment:

- Comparison chart
- Student participation

Extension / Integration Ideas:

- Story starter worksheet, frog booklet, graph a frog worksheet

Source:

Sea of Wonder, Harcourt Brace, pp. 47-57. "A day when frogs wear shoes"



W.F.

Subject / Topic of Study: Science / Language Arts: Butterflies

Grade Level: 3

Time Considerations: Two to three days - 30 minutes each day

Purpose / Objectives:

LA.3.2 Students will listen and respond to a literary form.

S.3.4 Students will actively engage in the learning process via minds-on science activities and experiences. Students will observe and record data.

Materials / Resources Needed:

1. Where Butterflies Grow by Joanne Ryder (This book can be found in the Living Classroom resource room).
2. Bibliography - Kingston Elementary
3. Clipboards - pencil - activity sheet
4. Use of butterfly garden

Activities / Procedures:

1. Introduce butterflies using an overhead projector or the chalkboard. Explain to the class that they will be copying step-by-step illustrations to help them guess the topic for the weeks activities.
 - Draw an oval in the middle of the page.
 - Add one more oval in front of the first oval and one in back. These are the three body parts. Label them head, thorax, and abdomen.
 - Draw two eyes and two antennae on the head. The antennae may be feather-shaped or have knobbed ends.
 - Draw three pairs of jointed legs and two pairs of wings attached to the thorax. Enthusiasm will mount as the class guesses "bug", "bee", "insect", and finally "butterfly".
2. Read Where Butterflies Grow to the class and discuss.
3. Pass out a clipboard with activity sheet to each student. Walk to butterfly garden.
4. *Activity 1: Using our Senses*
 - Tell students to stand quietly for one minute and listen to sounds at and around the garden.
 - Ask students to write down three sounds they heard.
 - Repeat exercise for sight and smell.

5. *Activity 2: How to attract butterflies*
- Students will stroll through the butterfly garden observing what attracts butterflies.
 - Have students write five ways they think butterflies are attracted to the garden. (Example: brightly colored flowers, warm sunny spot, plants with fragrance, places to land)
 - Discuss observations.

Evaluation / Assessment:

- Oral participation.
- Teacher will guide students in completing an acrostic using the letters in butterfly to show what they have learned.

Extension / Integration Ideas:

- Framed paragraph.
- Write a story using sheet with picture of butterflies as story starter.
- Video - 624VT "Magic School Bus Butterfly and Bug Beast"..
- Have books available in the classroom on butterflies for silent reading.

Sources: Frank Schaffer's Teaching Club (FS-960401)

Subject / Topic of Study: Insects - Science / Language Arts

Grade Level: 3

Time Considerations: 10 days - 30-45 minutes daily

Purpose / Objectives:

LA.3.2 Listens and responds to a variety of literary forms.

LA.3.4 Recalls, interprets, and summarizes information presented orally.

LA.3.25 Recognizes explicit main idea and details.

LA.3.55 Uses available technology as source of information.

S.3.1 Asks questions, communicates with others, and constructs model to explain idea.

S.3.15 Recognizes and describes the life cycle of a butterfly.

FAVA.3.1 Creates sculptures by construction and modeling.

Materials / Resources Needed:

- Classroom set of books: Backyard Insects by Millicent Selsam / Ronald Goor.
- Insect information book
- Clipboard/Activity sheet - observation chart
- Why Mosquitoes Buzz in People's Ears by Verna Aardema
- Grouchy Ladybug by Eric Carle
- Honey Bees by Sharon Kahkonen
- Very Hungry Caterpillar by Eric Carle
- Activity sheets: "Mosquitoes up close" and "Butterfly Life Cycle Viewer"
- Video: #509VT "Magic School Bus Gets Ants in Pants"

Activities / Procedures:

Day One

1. Teacher will introduce unit with guided reading from classroom set of books Backyard Insects by Millicent Selsam and Ronald Goor.
2. Pass out insect information book. Go over directions, color and organize book.

Day Two

3. Take students (with clipboard and observation sheet) to Living Classroom for a discovery walk. Stop at two different areas during walk and have students look of insects (look under rocks or leaves if necessary).

4. Then have students complete observation chart on 2 insects. Students will then share findings with a partner.

Day Three

5. Teacher will read orally Why Mosquitoes Buzz in People's Ears by Verna Aardema. (Accelerated Reader Title)
6. Students will complete activity sheet "Mosquitoes Up Close".
7. Students will continue to work on insect information book.

Day Four

8. Teacher will read orally Two Bad Ants by Chris Van Allsburg. (Accelerated Reader Title)
9. Students will do activity sheet on main idea (The Amazing Ant).

Day Five

10. Complete insect information book.
11. Show video #509VT "Magic School Bus Gets Ants in the Pants" (25 min.)

Day Six

12. Teacher will read orally Grouchy Ladybug by Eric Carle.
13. Students will complete activity sheet on details "The Ladybug"

Day Seven

14. Teacher will read orally Honey Bees by Sharon Kahkonen.
15. Students will watch video #511VT "Magic School Bus in a Beehive" (25 min.)

Day Eight

16. Take students to a S.U.N. center in the Living Classroom.
17. Invite Mrs. Bentley (Pre-K teacher) to demonstrate equipment used in working with a beehive. Give students a sample of honeycomb to taste.

Day Nine

18. Teacher will read orally The Very Hungry Caterpillar by Eric Carle.
19. Discuss the life cycle of a butterfly.
20. Cut out, color, and put together butterfly life cycle viewer activity sheet.

Day Ten

21. Review facts and characteristics about insects.

22. Take students on nature walk on trail at Living Classroom. Have students make a list of all the insects they see. Share observations with the class.
23. When students return to the room, they will construct a model of an insect using modeling clay. (Refer to directions sheet "Instant Insects".)

Evaluation / Assessment:

- Oral participation
- Observation chart and worksheets
- Insect information book

Extension / Integration Ideas:

- Video tapes: "Katy and the Katerpillar Kids" #588VT (75 min.)
"Grubby's Romance" #431VT (30 min.)
- Story starter sheet with ladybug.
- Activity sheet "Honeybee puzzle"
- Have student make fingerprint insects by using their finger prints made from an ink pad and then adding correct body part details with a marker. Projects may be displayed with topic "We're Going Buggy".

Subject / Topic of Study: Science: Kinds of Soil

Grade Level: 3

Time Considerations: 4 days (30 to 45 minutes each day)

Purpose / Objectives:

S.3.20 The student will compare various soils such as sand soil and red clay.

Materials / Resources Needed:

- Addison-Wesley Science (textbook)
- Windows on Science Volume 2 (Surface Features), Laser Disc
- Paper towels • Cups • Clipboards • Worksheet
- Bean Seed • Plastic Spoons

Activities / Procedures:

1. Read and discuss pp. 209-217 in Addison-Wesley Science book (Where soil comes from and Types of Topsoil) Optional Activity - make an illustration and label layers of soil (p. 212).
2. Review previous day's lesson by using Windows on Science Volume 2 (Surface Features) Lesson 13 pp. 86-89. Read and discuss pp. 218-221 in Addison-Wesley Science (The Importance of Soil). Reinforce lesson using Windows on Science Lesson 14 pp. 90-93.
3. Give each student a clipboard with experiment worksheet " What Is In Soil?", a paper towel, and a plastic spoon. Proceed to the Living Classroom. Students will gather soil samples and follow instructions on the experiment sheet.
4. Divide the class into cooperative groups. Give each group 3 cups and a plastic spoon. Take groups to the Living Classroom. Each group will collect a cup of soil from the side of the Reflection Pond, the side of the the hill leaving the parking lot (red clay), and from the tepee site. Have each group bury one bean seed in each cup. Go by the well site and water the seeds. Return to the classroom and place the cups in a sunny area. Each group will number the cups in order according to their prediction of the bean growth.

Evaluation / Assessment:

- Student participation
- Experiment worksheet

Extension / Integration Ideas:

- In the cooperative groups, students will compile a list of ways that soil is important to them.
- Chapter 9 checkup in Science Textbook (pp. 224-225).

Name _____

Soil experimen

What Is In Soil?

Hypothesis: *What do you think is in soil?*

Materials: *What do you need?*

soil, paper towel, pencil

Procedure: *What do you do?*

1. Spread the soil on the paper towel.
2. Look for different things in the soil.
3. Put a ✓ on the chart beside each thing you find.

Observations: *What did you observe?*


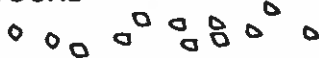




A. What kinds of things did you find in your soil sample?

B. What kinds of things did your classmates find in their soil samples?

Conclusion: *What did you learn?*

What do you know about what is in soil?



Soil Sorting Chart	
In my soil sample I found:	
very small bits of dirt 	
tiny rocks 	
twigs 	
leaves 	
critters 	
other (trash, etc.) 	

Subject / Topic of Study: Science / Rotting tree trunk

Grade Level: 3

Time Considerations: 45 minutes

Purpose / Objectives:

S.3.4 Actively engages in learning process via hands-on science activities.

Materials / Resources Needed:

- Living Classroom
- Rotting tree
- Plastic gloves
- Trowel
- Tweezers
- Jar
- Magnifying lens

Activities / Procedures:

1. Go to Living Classroom and find a rotting tree or tree trunk.
2. Teacher will put on plastic gloves and use trowel to move and uncover materials on the tree.
3. Use tweezers to collect items you want to inspect further and put in jar.
4. Have students look for signs of rotting wood.
5. Students can use magnifying lens to look for fungi and insects.
6. Have students examine the wood to see if ferns or moss are growing on it. Ask students what types of insects are in the wood.
7. When students return to the classroom have them draw a diagram of a rotting tree trunk and label any creatures and other items found on the tree.

Explanation: Dead trees are recycled by nature. Beetle larvae eat through some of provides a good growing place for ferns, fungi, and moss. Many creatures might be eating the rotting wood (centipedes, carpenter ants, termites, bark beetles). These creatures help turn the rotting tree into soil that will soon be able to nourish a new tree.

Evaluation / Assessment:

- Diagram
- Oral participation

Subject / Topic of Study: Science / Language Arts

Grade Level: 4

Time Considerations: 2 one hour periods

Purpose / Objectives:

LA.4.43 Communicates ideas by using the writing process:

- Prewriting
- Drafting
- Revising
- Editing
- Publishing

LA.4.59 Uses various sources (e.g., periodicals, audiovisuals, software, encyclopedias) for information.

LA.4.61 Develops a simple outline from a short selection.

Materials / Resources Needed:

- Nets - including a long-handle net
- A large bowl
- Some small containers
- Magnifying glasses or individual lenses
- Notebooks
- Insect guide book
- Copy of the Reflecting Pond safety rules

Activities / Procedures:

Day One

1. Sweep the net through the water at the Reflecting Pond in the Living Classroom to catch surface insects. Empty the contents into the bowl and examine your catch. If necessary, move the animals to the containers to look at them more closely. Take notes about each animal (number of legs, size, color, body shape, etc.) Return all of the animals to the water. In the classroom, use the guide book to identify the animals. Using any reference material available, including multi-media, list the facts about one of the animals identified.

Day Two

2. Using the list of facts, make an outline with at least three subtopics. From the outline, write a rough draft, edit, revise, and write final draft.

Evaluation / Assessment:

- Teacher evaluation
- Finished product

Extension / Integration Ideas:

- Go through the same observing, identification, and reporting method by finding more animals on pond weed, under lily leaves, or on vegetation near the edge of the pond and under stones.
- Construct and label a sketch along with a food chain illustration.
- Assess insect's ecological importance.

Subject / Topic of Study: Science / Language Arts

Grade Level: 4

Time Considerations: 2 one hour periods

Purpose / Objectives:

LA.4.43 Communicates ideas by using the writing process:

- Prewriting
- Drafting
- Revising
- Editing
- Publishing

LA.4.59 Uses various sources (e.g., periodicals, audiovisuals, software, encyclopedias) for information.

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- Insect guide book
- Copy of the Reflecting Pond safety rules

Activities / Procedures:

Day One

1. Sweep the net through the water at the Reflecting Pond in the Living Classroom catch surface insects. Empty the contents into the bowl and examine your catch. If necessary, move the animals to the containers to look at them more closely. Take notes about each animal (number of legs, size, color, body shape, etc.) Return all of the animals to the water. In the classroom, use the guide book to identify the animals. Using any reference material available, including multi-media, list the facts about one of the animals identified.

This lesson is the exact replica of the previous one.

Day Two

2. Using the list of facts, make an outline with at least three subtopics. From the outline, write a rough draft, edit, revise, and write final draft.

Evaluation / Assessment:

- Teacher evaluation
- Finished product

Extension / Integration Ideas:

- Go through the same observing, identification, and reporting method by finding more animals on pond weed, under lily leaves, or on vegetation near the edge of the pond and under stones.
- Construct and label a sketch along with a food chain illustration.
- Assess insect's ecological importance.

Subject / Topic of Study: Language Arts - Writing

Grade Level: 4

Time Considerations: One class period

Purpose / Objectives:

LA4.39 Writes selections (compositions) of three or more paragraphs about a topic.

LA4.40 Writes about self-selected topics

LA4.41 Writes a variety of genres to produce paragraphs and compositions:

- Personal narratives
- Imaginative stories
- Responses to literature
- Content area pieces
- Correspondence

Materials / Resources Needed:

- Clipboard
- Pencil

Activities / Procedures:

1. Pair off students. One will choose an object in the Living Classroom to write a description of and the other student will try to identify the item by its description.
2. Have the students switch and repeat the process.

Evaluation / Assessment:

- Teacher observation
- Determination of whether the object can be identified by the physical description.

Subject / Topic of Study: Language Arts / Science / Environment

Grade Level: 4

Time Considerations: Extended Lesson Plan (5 days)

Purpose / Objectives:

LA.4.5 Uses oral language for different purposes: to inform, to persuade, and to entertain.

Materials / Resources Needed:

- Ecology and the Environment Theme Book Series (KES Media Center PRO500)
- Costumes and props for the environment skits

Activities / Procedures:

1. Divide the class into groups of five or six students. Have each group use page 11 to plan a skit about the environment. Give students time in class to plan, research, write, prepare costumes and props, and rehearse. Meet with each group to monitor its progress and to help as needed.
2. Schedule one or two performances a day so each group gets an attentive audience.

Evaluation / Assessment:

- Performance of environmental skits

Subject / Topic of Study: Language Arts/ Math/ Science

Grade Level: 4

Time Considerations: 20 minutes (extended)

Purpose / Objectives:

LA 4.24 Recognizes EXPLICIT main ideas.

LA 4.28 Draws conclusions, make predictions.

M 4.13 Uses customary and metric units to measure length.

S 4.4 Uses appropriate tools to collect and analyze data.

Materials / Resources Needed:

- Mushroom in the Rain by Mirra Ginsburg
- Centimeter or inch ruler
- Paper
- Pencil

Activities / Procedures:

1. Read aloud Mushroom in the Rain by Ginsburg. Before the end of the story have students predict why all of the animals were able to fit under the mushroom.
2. Discuss the book and the ending that "mushrooms grow in the rain."
3. Conduct an experiment to see if mushrooms really grow in the rain.
4. Walk the nature trail looking for mushrooms. Measure and record the location and height and width of various mushrooms.
5. After a rainy period, again go out and make and record measurements.
6. Repeat step 5.
7. Discuss findings.

Evaluation / Assessment:

- Evaluate collected data
- Teacher observation

Subject / Topic of Study: Social Studies / Language Arts

Grade Level: 4

Time Considerations: Four class periods

Purpose / Objectives:

- SS.4.12 Compares and contrasts early colonial settlements (especially use of natural resources).
- SS.4.29 Develops skills for historical, geographical, and cultural analysis to make generalizations.
- LA.4.46 Responds to literal, inferential, and evaluative questions in literature
- LA.4.51 Recognizes cultural diversity in literature
- LA.4.49 Identifies literary forms

Materials / Resources Needed:

- Book Set: Log Cabin Home - Adventures in Frontier America by Catherine E. Chambers
- Clipboards

Activities / Procedures:

Day One

1. Take a walk through the Living Classroom quietly listening and looking. Students sit at the reflection pool and spend 2 minutes of think time imagining how this area looked 100 years ago.
2. Have students, in turn, give one or two of their ideas. Walk to the old homestead area and have students take note of the natural resources used to establish a homestead.

Day Two

3. In the classroom, (Living Classroom if scheduling and weather permit), read together Log Cabin Home. Develop and chart a vocabulary list while reading.

Day Three

4. Review vocabulary list and make any revisions. In pairs, have the students use bulletin board paper and Log Cabin Home to create a time line.

Day Four

5. Library time - students research early colonial settlements in New England and the Midwest. Using a three-ringed Venn diagram, have students compare and contrast settlements in the South, New England, and the Midwest.

Evaluation / Assessment:

- Write a composition (at least 3 paragraphs) describing each settlement area, including the natural resources used.

Extension / Integration Ideas:

- Map skills - geographic location, weather, topography, etc. of the three areas
- Construct an early settlement from natural materials
- Poetry - Write a cinquain describing the Living Classroom

Subject / Topic of Study: Language Arts / Indian Life

Grade Level: 4

Time Considerations: 50 minutes

Purpose / Objectives:

SS 4.8 Describe the impact of climate and physical environment on the lifestyles of American Indians.

LA 4.2 Listens and responds to a variety of literature.

LA 4.58 Uses research process.

LA 4.59 Uses various sources for information.

Materials / Resources Needed:

- Tepee in the Living Classroom
- Indian folklore and mythology

Activities / Procedures:

1. Take students out to the tepee in the Living Classroom and sit inside.
2. Teacher reads aloud about Indian folk tales or mythology.
3. Discuss the symbols of nature that are presented in the folk tale.

Extension / Integration Ideas:

- Have students do research to discover which type of Indians used the tepee and what other type homes were used. Present information to class. Have students describe how the climate affected the Indians' choice of homes.

Sources:

The Legend of the Bluebonnet, The Legend of the Indian Paintbrush by Tomie De Paola

Arrow to the Sun by Gerald McDermott

Buffalo Woman by Paul Goble

The Mud Pony by Caron Lee Cohen

Subject / Topic of Study: Language Arts/Colonization

Grade Level: 4

Time Considerations: 30 minutes

Purpose / Objectives:

SS 4.18 Describes lifestyles in the colonies in the 18th Century.

LA 4.43 Communicates ideas by using the writing process.

Materials / Resources Needed:

- Paper
- Pencil
- Old Schoolhouse or Frontier Home

Activities / Procedures:

1. Take students out to Old Schoolhouse or Frontier Home.
2. Examine objects from Colonial times such as a horn book, a spinning wheel, butter churn, etc.
3. Have students write a fun, imaginative story telling what they do all day as that object.
4. Share stories aloud.

Evaluation / Assessment:

- Teacher observation

Subject / Topic of Study: Science / Language Arts

Grade Level: 4 / 5

Time Considerations: (4) 40 minute periods

Purpose / Objectives:

Describes characteristics of a wetland:

LA.4.11 Determines meaning of word based on oral usage.

LA4.30 Distinguishes between fact and opinion.

Understands their importance:

S.4.4 Actively engages in learning process via hand-on/minds-on science materials.

S.4.23 Describe relationships in communities.

S.4.24 Identifies how matter and energy do, or do not cycle.

S.4.25 Discusses causes and possible solutions for pollution.

Materials / Resources Needed:

All materials are used to make and/or discuss the "Wetland Container":

- Large container (pillow case, large box)
- Sponge: absorbs excess water caused by runoff, retains moisture
- Small pillow: a resting place for migratory birds
- Soap: helps cleanse the environment (as wetlands do)
- Egg beater: mixes nutrients and oxygen into water
- Sieve or strainer: strains silt, debris, etc. from water
- Coffee filter: filters smaller impurities
- Antacid tablets: neutralized toxic substance
- Small box of cereal: provides nutrient-rich foods
- Small doll cradle: protects and feeds young wildlife

Activities / Procedures:

Day One

1. Use a KWL chart (K - what we know, W- what we want to know, L - what we learned) to begin describing a wetland. Go into the Living Classroom for observation and note taking. Divide class into 4 person research groups to come up with a working definition of a wetland and its characteristics.

Day Two

2. Add to KWL list. Bring out "Wetland Container", have a representative from each group to take an object out, then each group decide how the object represents what a wetland is or does. Give students time to discuss and build on each other's ideas. After 10-12 minutes have each group report their findings to the entire class. List ways in which wetlands are important to humans and other life.

Day Three

3. Create a visual representation of a life cycle of a wetland. Display with KWL chart and discuss.

Day Four

4. Write a story from the viewpoint of a plant or animal of the wetland. "A day in the life of"

Evaluation / Assessment:

- Select an animal or plant and describe how wetlands are important to them.
- Define: sponge effect, filter effect, nutrient control, natural nursery, absorption, runoff, neutralize (Definitions are given under sources)

Extension / Integration Ideas:

- Research salt water wetlands (Coastal and Inland)
- Research "Why do humans convert wetlands into other uses?"

Definitions:

sponge effect: absorbs runoff

filter effect: takes out silt, toxins, waste, etc.

nutrient control: absorbs nutrients from fertilizers and other sources that cause contamination downstream

natural nursery: provides protection and nourishment for newborn wildlife

absorption: soaking up and holding moisture

runoff: water that drains or flows off the surface of the land

neutralize: to make chemically neutral, being neither acid or base

Subject / Topic of Study: Science / Language Arts

Grade Level: 4 / 5

Time Considerations: (4) 40 minute periods

Purpose / Objectives:

Describes characteristics of a wetland:

LA.4.11 Determines meaning of word based on oral usage.

LA4.30 Distinguishes between fact and opinion.

Understands their importance:

S.4.4 Actively engages in learning process via hand-on/minds-on science materials.

S.4.23 Describe relationships in communities.

S.4.24 Identifies how matter and energy do, or do not cycle.

S.4.25 Discusses causes and possible solutions for pollution.

Materials / Resources Needed:

All materials are used to make and/or discuss the "Wetland Container":

- Large container (pillow case, large box)
- Sponge: absorbs excess water caused by runoff, retains moisture
- Small pillow: a resting place for migratory birds
- Soap: helps cleanse the environment (as wetlands do)
- Egg beater: mixes nutrients and oxygen into water
- Sieve or strainer: strains silt, debris, etc. from water
- Coffee filter: filters smaller impurities
- Antacid tablets: neutralized toxic substance
- Small box of cereal: provides nutrient-rich foods
- Small doll cradle: protects and feeds young wildlife

Activities / Procedures:

Day One

1. Use a KWL chart (K - what we know, W- what we want to know, L - what we learned) to begin describing a wetland. Go into the Living Classroom for observation and note taking. Divide class into 4 person research groups to come up with a working definition of a wetland and its characteristics.

Day Two

2. Add to KWL list. Bring out "Wetland Container", have a representative from each group to take an object out, then each group decide how the object represents what a wetland is or does. Give students time to discuss and build on each other's ideas. After 10-12 minutes have each group report their findings to the entire class. List ways in which wetlands are important to humans and other life.

Day Three

3. Create a visual representation of a life cycle of a wetland. Display with KWL chart and discuss.

Day Four

4. Write a story from the viewpoint of a plant or animal of the wetland. "A day in the life of"

Evaluation / Assessment:

- Select an animal or plant and describe how wetlands are important to them.
- Define: sponge effect, filter effect, nutrient control, natural nursery, absorption, runoff, neutralize (Definitions are given under sources)

Extension / Integration Ideas:

- Research salt water wetlands (Coastal and Inland)
- Research "Why do humans convert wetlands into other uses?"

Definitions:

sponge effect: absorbs runoff

filter effect: takes out silt, toxins, waste, etc.

nutrient control: absorbs nutrients from fertilizers and other sources that cause contamination downstream

natural nursery: provides protection and nourishment for newborn wildlife

absorption: soaking up and holding moisture

runoff: water that drains or flows off the surface of the land

neutralize: to make chemically neutral, being neither acid or base

Subject / Topic of Study: Language Arts: Fact / Opinion

Grade Level: 4

Time Consideration: 1 class period

Purpose / Objectives:

LA. 4.28 Draws conclusions, makes predictions, compares/contrasts, and makes generalizations.

LA .4.30 Distinguishes between fact and opinion.

LA.4.35 Uses examples from literature to create individual and group stories.

LA.4.50 Distinguishes between fact and opinion - literature.

LA.4.51 Recognizes cultural diversity represented in literature.

LA.4.4 Recalls, interprets, and summarizes information presented orally.

Materials / Resources Needed:

- If You Lived In Colonial Times by McGovern
- Index cards
- Chart paper
- Pencils
- Resources on colonial life ex: books, encyclopedias, Internet

Activities / Procedures:

1. Teacher will read sections of If You Lived in Colonial Times to the class. Allow the students to discuss life in colonial times. Give them the opportunity to brainstorm ideas about aspects of life then versus life now.
2. Hand out index cards with topics on them (e.g., medicine, shelter, food, etc.).
3. Students will break into groups and create a skit to go with the topic given.
4. Students in the audience will comment which actions they believe to be fact or opinions and if the actions / beliefs were true to that time period.
5. After all the groups have finished their drama presentation for the class they return to small groups.
6. Students create a Venn Diagram to compare aspects of colonial life to present day.

Evaluation / Assessment:

- Checklist of main points
- Teacher observation
- Skits

Extension / Integration Ideas:

- Students could generate their own questions about any era and then research.

Subject / Topic of Study: Language Arts: Idioms

Grade Level: 4

Time Consideration: 30 minutes

Purpose / Objectives:

LA.4.10 Determines literal and figurative meaning of words.

LA.4.28 Draws conclusions, makes predictions, compares/contrasts, and makes generalizations.

Materials / Resources Needed:

- Clipboards
- Pencils
- Paper
- The Flamingos are Tickled Pink - A book of Idioms by Chip Louitt and H.R. Russell

Activities / Procedures:

1. While walking through the Living Classroom, or sitting in the reflecting pond Sun Center, students think of nature-related idioms such as "slept like a log".
2. After a teacher specified time limit, share answers. Discuss literal and figurative meanings. Read selections from The Flamingos are Tickled Pink.

Evaluation / Assessment:

- Teacher observation

Extension / Integration Ideas:

- Invent new idioms and start a class list.
- Illustrate literal and figurative meanings of idioms.
- Choose a class favorite to illustrate on Bulletin Board paper for a wall mural.
- Using a thesaurus, rewrite idioms using synonyms.

Subject / Topic of Study: Language Arts/ Math/ Science

Grade Level: 4

Time Considerations: 20 minutes (extended)

Purpose / Objectives:

LA 4.24 Recognizes EXPLICIT main ideas.

LA 4. 28 Draws conclusions, make predictions.

M 4. 13 Uses customary and metric units to measure length.

S 4.4 Uses appropriate tools to collect and analyze data.

Materials / Resources Needed:

- Mushroom in the Rain by Mirra Ginsburg
- Centimeter or inch ruler
- Paper
- Pencil

Activities / Procedures:

1. Read aloud Mushroom in the Rain by Ginsburg. Before the end of the story have students predict why all of the animals were able to fit under the mushroom.
2. Discuss the book and the ending that "mushrooms grow in the rain."
3. Conduct an experiment to see if mushrooms really grow in the rain.
4. Walk the nature trail looking for mushrooms. Measure and record the location and height and width of various mushrooms.
5. After a rainy period, again go out and make and record measurements.
6. Repeat step 5.
7. Discuss findings.

Evaluation / Assessment:

- Evaluate collected data
- Teacher observation

Subject / Topic of Study: Math / Measurement

Grade Level: 4

Time Considerations: 60 minutes

Purpose / Objectives:

M.4.13 Uses customary and metric units to measure length.

Materials / Resources Needed:

- Rulers
- Paper
- Clipboards
- Index cards
- Pencils

Activities / Procedures:

1. After teaching measurement, send your students on a measuring scavenger hunt.
2. Ahead of time, the teacher should go to the Publix room and measure various items to the nearest $\frac{1}{2}$ inch.
3. Make a list of the measurements on index cards.
4. Divide the class into groups and take them with their rulers to find items that match the measurement on the index card.

Evaluation / Assessment:

- Completion of measurement list

Extension / Integration Ideas:

- This activity could be made more complex by having students find area, volume, or circumference.

Subject / Topic of Study: Math Measurement

Grade Level: 4

Time Considerations: 50 minutes

Purpose / Objectives:

M.4.12 Determines through concrete experiences perimeter, area and volume.

M.4.13 Uses customary and metric units to measure length.

Materials / Resources Needed:

- Clip boards
- Pencils
- Yard sticks
- Meter sticks
- Scavenger hunt worksheet
- Extra adult volunteers to supervise

Activities / Procedures:

1. Review procedure for finding perimeter, area and volume.
2. Divide the class into 4 groups. Take groups out to the Living Classroom with supplies.
3. Each group will go on a "scavenger hunt" to find the various measurements listed on the scavenger hunt worksheet.
4. At the end of the 50 minute period, the group with the most correct measurements wins.

Evaluation / Assessment:

- Teacher observation
- Student participation

Extension / Integration Ideas:

- Allow students to use calculators to figure perimeter, area, volume, etc.

Measurement Scavenger Hunt

- 1) Find the **perimeter** of the Octagon shaped S.U.N. Center in **centimeters**.

Octagon S.U.N. Center Perimeter = _____

- 2) Find the **area** of the sink-hole S.U.N. Center in **square feet**.

Sink-hole S.U.N. Center Area = _____

- 3) Find the **volume** of the rectangular base of the well house in **cubic feet**.

Well House Volume = _____

- 4) Find the **length** of the wooden boardwalk in **yards**.

Board Walk Length = _____

Subject / Topic of Study: Physical Science / Math

Grade Level: 4

Time Considerations: One hour

Purpose / Objectives:

S.4.21 Investigates the relationship of light, color, and heat absorption.

M.4.13 Uses customary and metric units to measure temperature.

M.4.25 Collects, reads, interprets, and compares data from graphs.

Materials / Resources Needed:

- 2 white Styrofoam cups or glass jars
- Black tempera paint
- 2 thermometers
- Water
- Sunshine
- Graph sheet

Activities / Procedures:

1. Take 2 Styrofoam cups. Paint the outside of one cup black and leave the other white.
2. Pour equal amounts of tap water into both cups.
3. Put a thermometer in each cup. Take the temperature in each cup and record on graph sheet.
4. Put both cups outside in the sun. In 30 minutes check temperature again. Record on graph.
5. Repeat at different time intervals and record.
6. Discuss the relationship of color to the absorption of heat.

Evaluation / Assessment:

- Teacher observation

Extension / Integration Ideas:

- Have students construct their own graphs to visualize temperature change.

Subject / Topic of Study: Ecology / Math

Grade Level: 4

Time Considerations: 45 minutes

Purpose / Objectives:

M.4.13 Uses customary and metric units to measure temperature.

M.4.26 Organizes data in charts.

S.4.1 Makes predictions, uses measurements, formulates simple hypotheses.

S.4.23 Describes relationships in living communities.

Materials / Resources Needed:

- 3 thermometers
- 3 sheets of paper, folded in half to make a tent
- A watch
- Living Classroom

Activities / Procedures:

1. Have students formulate a hypothesis for the following question: "Do plants influence the temperature of the environment?"
2. Choose 3 locations where temperatures can be read during the day (e.g. Living Classroom, blacktop, playground).
3. Determine 3 times for temperature readings, such as 10:00 a.m., 12:00 p.m., 2:00 p.m.
4. At predetermined times, go to each location and place a thermometer under a paper tent on the surface of the ground. (The tent protects the thermometer from the sun's heat.)
5. Wait 5 minutes. Record the temperature on a data chart.
6. Discuss the results from this experiment. Discuss the greenhouse effect and the effect on human population.

Evaluation / Assessment:

- Teacher observation

Subject / Topic of Study: Math / Science: Temperature of Air, Soil, and Water

Grade Level: 4

Time Considerations: 45-60 minutes for several days

Purpose / Objectives:

- S.4.27 Investigates how the sun's rays striking the Earth causes the seasons. Explores how the tilt of the Earth changes the angle of the sun's rays and causes the seasons.
- S.4.29 Uses weather instruments to collect data and measure factors (such as temperature, humidity, air pressure, wind speed and direction).
- S.4.31 Differentiates between weather and climate and identifies Earth's climate zones.
- S.4.32 Discusses the effects humans have on weather and climate and vice versa. Describes the climatic effects of removal of tropical rain forest; burning of fossil fuels; seeding of clouds; use of fluorocarbons and emissions from internal combustion engines.
- M.4.7 Uses ordered pairs of numbers to locate points on a grid or map and determine the ordered pair for a given point.
- M.4.8 Identifies and distinguishes among point, ray, line, line segment, and angle.

Materials / Resources Needed:

- Several accurate thermometers
- Paper
- Pencils
- Clipboards
- Living Classroom reflection pond and garden areas

Activities / Procedures:

These experiments can be integrated into a unit about weather and temperature. Students can record and graph temperatures over the period of several days, or in 45 minutes. Students will learn through observation that air, land and water gain and lose temperature at different rates, and vary depending on location.

Experiment #1

1. Measure the temperature of the water in a sunny spot and then in a shaded spot. Record temperatures on paper.
2. Repeat this procedure for soil - push thermometer down a few inches into the soil.. Soil in a sunny spot should be significantly higher in temperature than the

soil in the shady spot.

3. Repeat in the air. Air in sunny areas should be a bit warmer than in the shady areas.
4. Conclusion - Water does not dramatically change temperature as a result of the rays of the sun - it maintains a more uniform and constant temperature. Air changes slightly as a result of solar warming; it is effected and doesn't remain as uniform or constant. Soil changes greatly as a result of the sun; it fluctuates and doesn't remain uniform or constant.

•Variation: measure water, land and air early in the morning and then the same spot late in the afternoon.

Experiment #2

1. Graph the temperature change in the pond over the course of several days or weeks. Make sure to measure the temperature at the same time of day and in the same location.
2. Repeat the same procedure with a thermometer in the soil at the same depth, time, and place. Students should graph these results also. Students may graph on the same graph, using different colors, or on a separate sheet.
3. *Conclusion:* Student graphs should show that depending on the time of year, the pond responds to temperature change much more slowly. Example: in the spring air the temperature may for several days go from a high temperature of 55 to 75, while the pond may only increase from 55 to 65 during the same time period. The temperature of the land will fluctuate more on an equivalency with the air temperature, but will probably start colder in early spring and go quickly to warmer temperatures in the late spring (and vice versa in autumn or winter).

Evaluation / Assessment:

- Teacher and student interpretation of the resulting temperature graphs

Extension / Integration Ideas:

Questions for further discussion:

- How do the temperature changes effect the air masses, wind and water currents over land versus over water?
- What would be best to insulate a home?
- How does deforestation hasten temperature extremes?

Subject / Topic of Study: Math / Graphs

Grade Level: 4

Time Considerations: Two 50 minute periods

Purpose / Objectives:

M 4.26 Organizes data in charts and tables and constructs bar graphs or pictographs.

Materials / Resources Needed:

- Paper
- Pencils
- Clipboards
- Posters
- Markers

Activities / Procedures:

Day 1

1. Explain the use and construction of bar and pictographs
2. Divide the class into groups to take out to Living Classroom
3. Give each group a predetermined list of objects to look for. For example- pine cones, squirrels, frogs, nests, etc.
4. Have the class walk the trail and count the number of items they see from their list.

Day 2

5. In the classroom, have groups construct their own bar or pictograph to visualize their findings.
6. Have groups present graphs to the class.

Evaluation / Assessment:

- Evaluation of group graphs.

Subject / Topic of Study: Tree rings / Math

Grade Level: 4

Time Considerations: 30-45 minutes

Purpose / Objectives:

- M.4.11 Selects appropriate customary and metric units of measure.
- M.4.13 Uses customary and metric units to measure length, capacity/volume (use liquid and dry units), weight/mass, temperature, and time (including time to the minute, elapsed time, time before and after hour).
- M.4.15 Estimates and measures using appropriate instruments, length, capacity / volume, weight/mass, money, time, and temperature (including measuring to nearest half inch and nearest centimeter).
- M.4.20 Selects the appropriate operation(s) for a given word problem.
- M. 4.21 Solves simple problems (including those involving addition, subtraction, multiplication, and division of whole numbers and money).
- M.4.22 Solves one-, two-, or three-step word problems related to all appropriate fourth grade objectives including those presented orally and in writing; those in charts, tables, and graphs; and those with extraneous or insufficient information.
- M.4.23 Employs problem-solving strategies (e.g., make a chart, graph or table; make an organized list; guess and check; make a simple problem; look for a pattern; draw a picture; or work backwards).
- M.4.25 Collects, reads, interprets, and compares data from charts, tables, and graphs (pictographs, bar graphs, and circle graphs) using a variety of scales and estimation.
- M.4.26 Organizes data in charts and tables, and constructs bar graphs or pictographs using appropriate scales of one, two, three, four, five, or ten.
- M.4.28 Uses the properties of addition and multiplication (commutative, associative, distributive, and identity elements).
- M. 4.31 Adds and subtracts two- and three-digit whole numbers using vertical and horizontal presentations with and without regrouping with the horizontal rewritten vertically.

Materials / Resources Needed:

- Cut cross-sections of tree trunks. Trunks should be dated to help determine year when the tree was cut.
- Pencils
- Crayons
- Paper

Activities / Procedures:

1. Teacher will explain how tree growth rings form. A tree will have a light ring (early wood, summer growth) and a smaller, dark ring (late wood, winter growth). The age can be determined by counting the rings. Each set of light and dark rings represents one year of growth.
2. Divide students up into groups of 4-6 students. Each group will be given a cross-section to examine.
3. Each student will place their sheet of paper onto the tree cross-section and press down with the side of the crayon and create a rubbing.
4. Students will note the date the tree was cut onto their paper to assist in their calculations.
5. Students will use their rubbings to mark and count their tree rings so as not to destroy their actual tree trunk cross-sections.
6. Students may calculate several dates and types of information from their tree ring rubbings utilizing a variety of mathematics skills. For example: date the tree, determine year the tree was "born", mark the tree ring that grew the year you were born, etc.

Evaluation / Assessment:

- Student rubbings will be evaluated for the accuracy of marking of dates and tree age.
- Teacher will check addition, subtraction, etc. for accuracy.

Extension / Integration Ideas:

- This could also integrate historical events and events students in social studies (e.g., WW II, assassinations, Civil War, etc.).
- Science can be integrated by discussing the effects of weather on the growth of the tree rings.

Subject / Topic of Study: Averages

Grade Level: 4 / 5

Time Considerations: 1 class period

Purpose / Objectives:

M 4.1 Round two-, three-, or four-digit numbers to the nearest ten, hundred, or thousand.

Materials / Resources Needed:

- Stopwatch
- Paper
- Pencil

Activities / Procedures:

1. Class will be divided into groups of four or five. Each person in the group will walk the nature trail at a steady pace. The teacher will record the time of each student in the group. As each member of the group finishes, the times will be given to the groups. After the group has all of the times of each person in their group together, the group will calculate the average time it took their group to walk the trail.
2. After the group calculates their average time, the group leader will turn it in to the teacher who will then display the average on the overhead. After each group has turned their times in, each student in the class must calculate the total average for the class.

Evaluation / Assessment:

- Group calculations of their average walking time turned in.
- Each student's calculation of the total average walking time for the class turned in. (Both will checked for accuracy.)

Extension / Integration Ideas:

- Determine median speed

Subject / Topic of Study: U.S. Map Activity #1

Grade Level: 4/5

Time Considerations: 45 minutes

Purpose / Objectives:

The purpose of this activity is to allow students to display knowledge of states, capitals, directions and other map skills using a hands-on approach with the outdoor classroom map of the United States.

Materials / Resources Needed:

- Living Classroom map of the United States
- 5 classroom atlases
- State, capital, and major city flash cards.

Activities / Procedures:

1. Divide the class into 5 cooperative groups. Each group will compete with other groups to see which team can locate various map locations within a 2 minute period. Correct location will be determined when the students place the flash cards on the correct city, capital, or state.

Evaluation / Assessment:

- Teacher will visually monitor student progress and assess student knowledge as the year progresses.
- Play map skills game in classroom to determine student progression of map skills.

Subject / Topic of Study: Social Studies / Language Arts

Grade Level: 4

Time Considerations: Four class periods

Purpose / Objectives:

- SS.4.12 Compares and contrasts early colonial settlements (especially use of natural resources).
- SS.4.29 Develops skills for historical, geographical, and cultural analysis to make generalizations.
- LA.4.46 Responds to literal, inferential, and evaluative questions in literature
- LA.4.51 Recognizes cultural diversity in literature
- LA.4.49 Identifies literary forms

Materials / Resources Needed:

- Book Set: Log Cabin Home - Adventures in Frontier America by Catherine E. Chambers
- Clipboards

Activities / Procedures:

Day One

1. Take a walk through the Living Classroom quietly listening and looking. Students sit at the reflection pool and spend 2 minutes of think time imagining how this area looked 100 years ago.
2. Have students, in turn, give one or two of their ideas. Walk to the old homestead area and have students take note of the natural resources used to establish a homestead.

Day Two

3. In the classroom, (Living Classroom if scheduling and weather permit), read together Log Cabin Home. Develop and chart a vocabulary list while reading.

Day Three

4. Review vocabulary list and make any revisions. In pairs, have the students use bulletin board paper and Log Cabin Home to create a time line.

Day Four

5. Library time - students research early colonial settlements in New England and the Midwest. Using a three-ringed Venn diagram, have students compare and contrast settlements in the South, New England, and the Midwest.

Evaluation / Assessment:

- Write a composition (at least 3 paragraphs) describing each settlement area, including the natural resources used.

Extension / Integration Ideas:

- Map skills - geographic location, weather, topography, etc. of the three areas
- Construct an early settlement from natural materials
- Poetry - Write a cinquain describing the Living Classroom

Subject / Topic of Study: Language Arts/Colonization

Grade Level: 4

Time Considerations: 30 minutes

Purpose / Objectives:

SS 4.18 Describes lifestyles in the colonies in the 18th Century.

LA 4.43 Communicates ideas by using the writing process.

Materials / Resources Needed:

- Paper
- Pencil
- Old Schoolhouse or Frontier Home

Activities / Procedures:

1. Take students out to Old Schoolhouse or Frontier Home.
2. Examine objects from Colonial times such as a horn book, a spinning wheel, butter churn, etc.
3. Have students write a fun, imaginative story telling what they do all day as that object.
4. Share stories aloud.

Evaluation / Assessment:

- Teacher observation

Subject / Topic of Study: Social Studies / Colonial America

Grade Level: 4

Time Considerations: 2 (45 minute periods)

Purpose / Objectives:

SS.4.18 Describe lifestyles in the colonies in the 18th century.

Materials / Resources Needed:

- Ripe cherries, blueberries, blackberries or strawberries
- Small jars with lid
- Spoons
- Paper towels
- Paper cups
- Paper
- Feather quills

Activities / Procedures:

Day One

1. Make berry ink (to do a writing activity in the school house) by doing the following:
 - Remove stems and leaves from the berries.
 - Press the berries to a pulp with the back of a spoon.
 - When the berries are crushed, add a little water. The more water you add, the lighter the color of the ink.
 - Stir the mixture well.
 - Place a sheet of paper towel over a paper cup.
 - Slowly pour the berry mixture through the towel.
 - Let all the liquid drain through the towel. Remove the towel and throw it away.
 - Pour the strained ink back into the jar.

Day Two

2. Take the students out to the old school house.
3. Allow students to use feather quills and the ink they made to write as they did in colonial times. Emphasize that good penmanship was thought extremely important in Colonial America.

Evaluation / Assessment:

- Teacher observation
- Student participation

Subject / Topic of Study: Social Studies / Math

Grade Level: 4

Time Considerations: 1 or 2 - 30 minute periods

Purpose / Objectives:

SS.4.26 Explains the social and economic impacts of technology.

M.4.14 Determines and estimates amounts of money up to \$20 and adds and subtracts money using decimal notation without and with regrouping.

M.4.18 Compares whole numbers and decimals.

Materials / Resources Needed:

- Treasury of Literature Manual: On the Banks of Plum Creek by Laura Ingalls Wilder.
- Price list from colonial times
- Writer's journal p. 78 Emerald Forest, Harcourt Brace Reading Series

Activities / Procedures:

1. Read the story from On the Banks of Plum Creek in the reading series
2. Make a list of supplies Ma and Pa may have bought at the general store
3. Make a list of supplies your parents and you buy at the grocery store now
4. Use the price list to write down prices from colonial times. Then estimate how much you think that same item would cost now.
5. Go to the Publix Classroom and price the items on your list for today's prices.
6. Compare how the items are alike and different. Discuss the difference in cost.

Evaluation / Assessment:

- Evaluation of completed lists

Extension / Integration Ideas:

- Make a general store in your classroom and compare what it looks like to the Publix Classroom.
- Take a field trip to the courthouse and view old newspapers and grocery ads to compare prices.

Subject / Topic of Study: Science / Water

Grade Level: 4

Time Considerations: 1 - 1½ hours

Purpose / Objectives:

S 4.28 Demonstrates and describes the water cycle and the role of evaporation, precipitation, and condensation.

Materials / Resources Needed:

- Large chart paper
- Markers
- Prepared "Water on Earth" chart- from The Cousteau Almanac, 1981- as given in Project Wild Aquatic Guide
- Clipboards
- Notebooks

Activities / Procedures:

1. Begin with a brainstorming session. Each student is to write down all the things they can associate with water. After 3 minutes have students, in turn, give their answers-no duplicate answers- and record on chart paper. Decide what categories are represented. Color code the categories by circling each word according to their category.
2. Walk through the Living Classroom starting at the butterfly garden for the purpose of taking note of how and where water is used (Students may record in notebooks or keep a mental list). Remind students of the well on the old homestead site, and the reason for, and the purpose of the sinkhole.

Review facts: Earth is called the water planet, between 2/3 and 3/4 of it's surface is water, the Earth's water consists of flowing rivers, ponds, lakes, oceans, ice caps, in the air and in ground water.

3. Ask students if they think water is limited or limitless. Explain scientists believe that all the water that we have now is all we will ever have. Then hold up the "Water on Earth" chart:

Oceans	97.2% of total
All ice caps/glaciers	2.0
Ground water	0.62
Freshwater lakes	0.009
Inland seas/salt lakes	0.008
Atmosphere	0.001
<u>All rivers</u>	<u>0.0001</u>
Total	99.8381%

Evaluation / Assessment:

- Students will write a position paper on the Earth's water situation using facts they've learned Through discussions and personal notes.
- Students write assessment questions for each other, then evaluate each other's responses.

Extension / Integration Ideas:

- Include vocabulary: Freshwater, saltwater, ground water, aquifer, sink hole, precipitation, evaporation, condensation, transpiration, percolation.
- Include skill sheets (attached)
- Give out "Water Information" sheet and have students keep a water usage journal for one week.
- Ask students to calculate the estimated amounts of fresh water available for human use:

Ground water	0.62%
Freshwater lakes	0.009
Rivers	<u>0.0001</u>
	0.6291%
including ice caps and glaciers	<u>2.0</u>
	2.6291%

- Back in the classroom, discuss: other things that depend on water (Fresh and saltwater), reduction of existing fresh water by contamination and pollution, fresh water that is not readily available.

Demonstration:

1. Fill a 20 gallon fish tank (represents all the Earth's water)
2. Choose a student to fill a one-gallon container from the tank (represents freshwater on Earth)
3. Choose a student to pour 2 cups of water from the one-gallon container (represents ice caps)
4. From the 2 cups, have a student take put 1½ tsp. of water (represents ground water)
5. From this 1½ tsp, have a student put one drop of water into an empty baby jar or another small clear container (represents usable water)

Subject / Topic of Study: Science and Movement: Soil and Ground Water

Grade Level: 4

Time Considerations: 45-60 minutes

Purpose / Objectives:

- S.4.1 Asks questions, makes inferences and predictions, uses estimation and measurement, uses evidence to construct explanations, makes sketches and diagrams to explain ideas, organizes data into tables and charts for interpretation, reads and interprets various types of graphs, formulates some hypotheses, identifies and controls a limited number of variables, and designs a simple experiment.
- S.4.4 Actively engages in the learning process via hands-on/minds on science activities and experiences. Uses appropriate tools to collect and analyze data and solve problems.
- S.4.25 Discusses causes and possible solutions for pollution. Identifies types of pollution, such as air pollution, water pollution and noise pollution, and discusses how overpopulation contributes to pollution. Formulates ideas for solutions to existing pollution problems.
- S.4.28 Demonstrates and describes the water cycle and the role of evaporation, precipitation and condensation. Examines the process of change as it relates to water in the atmosphere.
- S.4.32 Discusses the effects humans have on weather and climate and vice versa. Describes the climatic effects of removal of tropical rain forest; burning of fossil fuels; seeding of clouds; use of fluorocarbons and emissions from internal combustion engines.

Materials / Resources Needed:

- 10-12 Coffee cans or plastic gallon milk jugs (half with small "pinholes" in the bottom)
- water
- food coloring or paint filled water
- various types of soil around the Living Classroom

Activities / Procedures:

1. Divide students into groups. Give each group a coffee can or jug with small holes in the bottom. Assign the groups different soil types with which to fill their container:
Group #1 Rocks and pebbles
Group #2 Sandy soil
Group #3 Rich forest floor soil
Group #4 Clay from near the wetlands
Group #5 Leaves and compost
2. Each type of soil allows water to drain through it, and can filter out impurities. Ask students to guess which type of soils move water the fastest and slowest (or rank them). Ask students which soils will filter out impurities (food color or paint filled water) best or quickest. (These could represent chemicals polluting our rainwater.)
3. Place jugs of soil over empty jugs that do not have holes in them. First pour equal amounts of water into each soil sample at the same time. Note which soils drains the water fastest and which absorbs and retains the most water.
4. Empty water out and repeat the procedure using the water with the food coloring or paint. Judge which soil filters out impurities most effectively by noting the color of the water in the bottom jugs.
5. Ask students to decide which soil drained the best/worst, filtered the best/worst, etc.
6. Make students aware of how wetlands generally have poorly draining soils, how compost and mulch can retain moisture to help plants, and how gravel and rocks are used to construct sumps and road beds where water drainage is important. Also inform students how soils cannot filter out all of our chemical pollutants in the environment. These chemicals can get into rivers and wells.

Evaluation / Assessment:

- Teacher observation
- Written testing after completion of unit
- Student participation

Extension / Integration Ideas:

Discuss with students the following questions:

- Which type of soil would be best to dig a well in?
- Which soil would be best to put a drain into?

Subject / Topic of Study: Science: Water Cycle / Pollution

Grade Level: 4

Time Consideration: 1 week

Purpose / Objectives:

- S.4.18 Demonstrates how light travels and can be separated into a visible spectrum. Produces a rainbow using a prism, water, or oil (refraction).
- S.4.25 Discusses causes and possible solutions for pollution. Identifies types of pollution, such as air pollution, water pollution and noise pollution, and discusses how overpopulation contributes to pollution. Formulates ideas for solutions to existing pollution problems.
- S.4.28 Demonstrates and describes the water cycle and the role of evaporation, precipitation, and condensation. Examines the process of change as it relates to water in the atmosphere.

Materials / Resources Needed:

- | | |
|--------------|---------------|
| •Clipboards | •Paper |
| •Notebooks | •Spray bottle |
| •Glass | •Buckets |
| •Wesson Oil | •Feathers |
| •Garden hose | •Pencils |
| •Computers | •Encyclopedia |
| •Almanac | |

Activities / Procedures:

1. Students will bring clipboards and Science logs to the Wetlands Site in the Living Classroom and make general observations about the state of that water.
2. Students will discuss the water cycle and what factors affect it.
3. Teacher will spray water from the bottle to show a prism and pour water into the glass.
4. Students will discuss causes of a rainbow and the colors that are displayed.
5. Students will take 2 samples of water and place into 2 buckets.
6. Teacher will place 2 objects into each bucket - a group of feathers glued together and a piece of garden hose with holes in it.

7. The teacher will slowly introduce Wesson oil into 1 bucket and students will predict the effect that the oil will have.
8. Students will carry the buckets to class and observe them over the period of a week. They will record their observations in a Science Log.
9. Students can work in groups to develop probable solutions to water pollutants.
10. Students can discuss and research other countries with impure water supplies.

Evaluation / Assessment:

- Science log observations
- Teacher observations

Extension / Integration Ideas:

- Students can research recent oil spills, acid rain, and other pollution events.

Subject / Topic of Study: Math / Science: Temperature of Air, Soil, and Water

Grade Level: 4

Time Considerations: 45-60 minutes for several days

Purpose / Objectives:

- S.4.27 Investigates how the sun's rays striking the Earth causes the seasons. Explores how the tilt of the Earth changes the angle of the sun's rays and causes the seasons.
- S.4.29 Uses weather instruments to collect data and measure factors (such as temperature, humidity, air pressure, wind speed and direction).
- S.4.31 Differentiates between weather and climate and identifies Earth's climate zones.
- S.4.32 Discusses the effects humans have on weather and climate and vice versa. Describes the climatic effects of removal of tropical rain forest; burning of fossil fuels; seeding of clouds; use of fluorocarbons and emissions from internal combustion engines.
- M.4.7 Uses ordered pairs of numbers to locate points on a grid or map and determine the ordered pair for a given point.
- M.4.8 Identifies and distinguishes among point, ray, line, line segment, and angle.

Materials / Resources Needed:

- Several accurate thermometers
- Pencils
- Living Classroom reflection pond and garden areas
- Paper
- Clipboards

Activities / Procedures:

These experiments can be integrated into a unit about weather and temperature. Students can record and graph temperatures over the period of several days, or in 45 minutes. Students will learn through observation that air, land and water gain and lose temperature at different rates, and vary depending on location.

Experiment #1

1. Measure the temperature of the water in a sunny spot and then in a shaded spot. Record temperatures on paper.
2. Repeat this procedure for soil - push thermometer down a few inches into the soil.. Soil in a sunny spot should be significantly higher in temperature than the

soil in the shady spot.

3. Repeat in the air. Air in sunny areas should be a bit warmer than in the shady areas.
4. Conclusion - Water does not dramatically change temperature as a result of the rays of the sun - it maintains a more uniform and constant temperature. Air changes slightly as a result of solar warming; it is effected and doesn't remain as uniform or constant. Soil changes greatly as a result of the sun; it fluctuates and doesn't remain uniform or constant.

•Variation: measure water, land and air early in the morning and then the same spot late in the afternoon.

Experiment #2

1. Graph the temperature change in the pond over the course of several days or weeks. Make sure to measure the temperature at the same time of day and in the same location.
2. Repeat the same procedure with a thermometer in the soil at the same depth, time, and place. Students should graph these results also. Students may graph on the same graph, using different colors, or on a separate sheet.
3. *Conclusion:* Student graphs should show that depending on the time of year, the pond responds to temperature change much more slowly. Example: in the spring air the temperature may for several days go from a high temperature of 55 to 75, while the pond may only increase from 55 to 65 during the same time period. The temperature of the land will fluctuate more on an equivalency with the air temperature, but will probably start colder in early spring and go quickly to warmer temperatures in the late spring (and vice versa in autumn or winter).

Evaluation / Assessment:

- Teacher and student interpretation of the resulting temperature graphs

Extension / Integration Ideas:

Questions for further discussion:

- How do the temperature changes effect the air masses, wind and water currents over land versus over water?
- What would be best to insulate a home?
- How does deforestation hasten temperature extremes?

Subject / Topic of Study: Science / Water

Grade Level: 4 / 5

Time Considerations: 50 minutes

Purpose / Objectives:

S.4.4 Actively engages in the learning process via hands-on activities. Uses appropriate tools to collect and analyze data.

Materials / Resources Needed:

- Small container
- Magnifying glasses
- Pencils
- Microscopes
- Paper

Activities / Procedures:

1. Using small containers have students collect water samples from a variety of sources including the well, reflecting pond, tap water, etc.
2. Have students label each container with the name of the source.
3. Ask students to use microscopes or magnifying glass to observe these water samples for the presence of living organisms.
4. Have student sketch their observations with a description comparing the types of organisms they observe.
5. Discuss observations of organisms.

Evaluation / Assessment:

- Teacher observation
- Participation in discussions

Extension / Integration Ideas:

- Assign groups of students the different organisms to research in the library or on computer and report to the class.

Subject / Topic of Study: Science

Grade Level: 4

Time Considerations: 30 minutes, 4-5 days

Purpose / Objectives:

S.4.1 Asks questions, makes inferences and predictions, uses estimation and measurement, organizes data into charts.

S.4.28 Demonstrates and describes the role of evaporation. Examines the process of change as it relates to water in the atmosphere.

Materials / Resources Needed:

- Poem "Mirrors" (tape to attach cut yarn)
- Yarn
- Puddle chart
- A puddle
- Scissors

Activities / Procedures:

1. Read poem and discuss puddles.
2. Take students into the Living Classroom after a recent rain. Have students choose class puddles.
3. Outline the perimeter of the puddle and label it. Measure the perimeter with a piece of yarn and cut.
4. Hang the piece of yarn on the puddle graph.
5. Make predictions of what will happen to the puddle when measured on day 2.
6. Repeat the same procedure for the next few days and record information.
7. Each day record information in journal.

Evaluation / Assessment:

- Teacher observation

Source:

Mirrors

*Puddles in the street
Are mirrors at my feet
Shiny mirrors
Showing
Sky
And clouds
And trees
Still mirrors
Showing
Shimmering
Leaves.*

-Anonymous

Subject / Topic of Study: Solar System

Grade Level: 4

Time Considerations: 2 (50-minute) class periods

Purpose / Objectives:

S.4.35. Illustrates the relative size and distance of planets in our solar system.
Constructs a scale model of the sun and its nine planets.

M.4.13. Uses customary and metric units to measure length.

Materials / Resources Needed:

- Poster Board
- Pencils
- Markers
- Compass
- Scissors

Activities / Procedures:

Day One

1. Teacher should draw the outline of each of the nine planets, and the sun to scale (see attached chart). You may wish to double the diameter so that Pluto is not quite so small to work with.
2. Divide the class into 10 groups and have each group color and cut one of the planets or sun.

Day Two

3. After planets are completed, set the models up outside. Let the distance from the Earth to the sun be a convenient distance (e.g. a meter, or larger if you really want to emphasize the vastness of the solar system). See attached chart for scaled distances.

One easy way to do the distances would be to mark out the distances on yarn and roll it into a ball. Then it could be unrolled as students move into position. Or, you may want students to actually measure distances.

Evaluation / Assessment:

- Teacher observation

Extension / Integration Ideas:

- Have students construct models from clay instead of poster board.
- You might include an asteroid belt, meteors, etc., as time permits.

Object	Diameter
Mercury	.5 cm
Venus	1.2 cm
Earth	1.3 cm
Mars	.7 cm
Jupiter	14.2 cm
Saturn	11.5 cm
Uranus	4.7 cm
Neptune	4.8 cm
Pluto	.2 cm
Sun	139.2 cm

Planet	Distance
Mercury	.4
Venus	.7
Earth	1.0
Mars	1.5
Jupiter	5.2
Saturn	9.5
Uranus	19.2
Neptune	30.0
Pluto	39.4

Subject / Topic of Study: Science: Weather / Climate

Grade Level: 4

Time Consideration: 1 week - 45 minutes per day

Purpose / Objectives:

- S.4.27 Investigates how the sun's rays striking the Earth causes the seasons. Explores how the tilt of the Earth changes the angle of the sun's rays and causes the seasons.
- S.4.29 Uses weather instruments to collect data and measure factors (such as temperature, humidity, air pressure, wind speed, and direction).
- S.4.30 Interprets simple weather maps and charts and makes forecasts. Identifies pressure systems, fronts, and other features from maps and charts; uses this information to develop forecast.
- S.4.31 Differentiates between weather and climate and identifies Earth's climate zones.
- S.4.32 Discusses the effects humans have on weather and climate and vice versa. Describes the climatic effects of removal of tropical rain forest; burning of fossil fuels; seeding of clouds; use of fluorocarbons and emissions from internal combustion engines.
- S.4.21 Investigates the relationship of light, color, and heat absorption. Makes comparisons of heat absorption based on color of objects (such as clothing or construction paper).

Materials / Resources Needed:

- Newspapers
- Science logs
- Weather station
- Pencils
- Tennis ball
- Black paint
- Overhead lamp
- Thermometer

Activities / Procedures:

1. Teacher will pass out newspaper sections on weather and discuss them with students.
2. Students will identify the current season and usual conditions and temperatures for it.
3. Students will generate theories about causes of seasons and weather (teacher guided), and come to a conclusion.
4. Students will go to the Weather Station and use the following instruments to collect data: barometer, thermometer, and wind direction.
5. Students will discuss the effect people have on the weather and climate and vice versa.
6. *Teacher will set up experiment:*
 - Paint tennis ball black and place on a stand with light directly hitting one spot.
 - Students will predict "hot spots" in science logs.
 - Students will measure temperature on the tennis ball sections daily and record findings.
7. Students will report daily current conditions and predict the next day's condition in science logs.
8. After one week students will create their own weather page of the newspaper.

Evaluation / Assessment:

- Science logs
- Student project
- Teacher observation

Extension / Integration Ideas:

- Students could use blue or green paint and hypothesize about temperatures on the tennis ball (representing land, water).

Subject / Topic of Study: Soil Erosion / Science

Grade Level: 4

Time Considerations: 45- 60 minutes

Purpose / Objectives:

- S 4.25 Discusses causes and possible solutions for pollution. Identifies types of pollution, such as air pollution, water pollution, and noise pollution, and discusses how overpopulation contributes to pollution. Formulates ideas for solutions to existing pollution problems.
- S 4.28 Demonstrates and describes the water cycle and the role of evaporation, precipitation and condensation. Examines the process of change as it relates to water in the atmosphere.
- S 4.32 Discuss the effects humans have on weather and climate and vice versa. Describes the climatic effects of removal of tropical rain forest; burning of fossil fuels; seeding of clouds; use of fluorocarbons and emissions from internal combustion engines.
- S 4.1 Asks question, makes inferences and predictions, uses estimation and measurement, uses evidence to construct explanation, makes sketches and diagrams to explain ideas, organizes data into tables and charts for interpretation, reads and interprets various types of graphs, formulates simple hypotheses, identifies and controls a limited number of variables, and designs a simple experiment.
- S 4.4 Actively engages in the learning process via hands-on/minds-on science activities and experiences. Uses appropriate tools to collect and analyze data and solve problems.

Materials / Resources Needed:

- 6-8 aluminum disposable baking tins or roasting tins
- leaves and pine needles
- water in watering can or hose
- soil
- grass or sod
- shovels or garden trowel

Activities / Procedures:

1. Describe soil erosion to students. Unprotected soil erodes much more easily than soil that is protected or has plants growing in it. Cutting forests and killing plants increase erosion, which silts up out streams and lakes. Farm fields erode heavily when crops are not growing to hold soil in place.
2. Take aluminum tins, push small pinholes into one end of half the tins. fill tins with holes using soil from living classroom. Mound soil up into a hill, leaving holes uncovered. Leave one pan with bare soil, place leaves and pine needles on the soil

of another pan, place rocks and gravel on a third pan of soil. For last pan of soil, scalp up some grass, or place some sod onto the soil.

3. Place tins of soil over the empty tins that have no holes punched into them. Ask students to predict which soil will erode the most and the least.
4. Pour roughly equal amounts of water from the hose or watering can into each soil "hill" to simulate rainfall. Notice the run-off in the bottom tins. The bare soil should drain the quickest, and produce the most eroded soil particles in the bottom tin. The sod (or possible the leaves and pine needles) should produce the least erosion and run off.
5. Ask students if they predicted correctly.

**Water may be varied to simulate a soft shower, or a hard rain storm, which will also speed the rate of erosion, as will varying the slope of the soil hills.*

Evaluation / Assessment:

- Teacher will observe the erosion experiments of the students.
- Teacher will determine if students have predicted the outcomes correctly.

Extension / Integration Ideas:

Propose the following questions to students:

- What type of land forms will erode most quickly?
- How can we prevent erosion in our schools and homes?
- How can you see the signs of erosion after it has occurred?

Subject / Topic of Study: Science / Weather

Grade Level: 4

Time Considerations: Extended

Purpose / Objectives:

S.4.28 Demonstrates and describes the water cycle and the role of evaporation.

M.4.13 Uses customary and metric units to measure length.

M.4.26 Organizes data in charts and tables, and constructs bar graphs

Materials / Resources Needed:

- 2 identical glasses of water
- food coloring

Activities / Procedures:

1. Fill two identical glasses with the same amount of water and add food coloring.
2. Mark the top level of the water in each glass, being sure they are equal.
3. Place one glass in a sunny location and the other in a shady location.
4. Check the glasses every couple of days and mark the water levels, measure difference.
5. Graph the information gathered.

Evaluation / Assessment:

- Evaluation of graphs

Subject / Topic of Study: Science / Art - Reflections

Grade Level: 4th

Time Considerations: 45-60 minutes

Purpose / Objectives:

- S.4.18 Demonstrates how light travels and can be separated into a visible spectrum. Produces a rainbow using a prism, water or oil (refraction).
- S.4.19 Investigates the characteristics of light, its movement and its action with objects. Demonstrates how to use mirrors to control direction of light (reflection). Manipulates mirrors to demonstrate and measure directions of light beams, angle of incidence and angle of reflection. Observes the refractive behavior of light using lenses (concave and convex), microscopes and telescopes. Distinguishes between transparent, translucent, and opaque.
- S.4.20 Predicts changes in shadow length and direction in relation to light source and motion (constructions a sundial or shadow stick).

Materials / Resources Needed:

- Paper
- Pencils
- Reflecting pond S.U.N. Center

Activities / Procedures:

1. The teacher will discuss the concept of reflections and the way that light is reflected (regular, specular, diffuse, spread reflections) from and onto certain types of surfaces.
2. Teacher will discuss the manner that a polished surface, such as a mirror or water, will reflect light rays to create a specular reflection (reflection of light rays simply means that some of them bounce back off of an object - a mirror bounces back nearly all of the light rays, water bounces back most light rays, and a sheet of black construction paper bounces back almost none of the light rays).
3. Students will view the reflections in the pond and notice how the reflections are dimmer than the actual objects around the pond. This is because some of the light rays are trapped by the pond and do not reflect back to the viewer.
4. Students will also notice that the reflected images appear "upside down" in the pond.

5. Ask students to draw the objects and their reflections in the pond. Remind students that the reflections are not as precise and bright as the actual objects, and they are also "upside down".

Evaluation / Assessment:

- Teacher will examine student artwork, suggest improvement or additions and compliment accurate portrayal of the reflections.

Extension / Integration Ideas:

- Draw mirror images - reflections from mirrors.
- Draw self-portraits using water of mirror to reflect images.
- Discuss refraction as it relates to water and reflections.

Subject / Topic of Study: Physical Science / Math

Grade Level: 4

Time Considerations: One hour

Purpose / Objectives:

S.4.21 Investigates the relationship of light, color, and heat absorption.

M.4.13 Uses customary and metric units to measure temperature.

M.4.25 Collects, reads, interprets, and compares data from graphs.

Materials / Resources Needed:

- 2 white Styrofoam cups or glass jars
- Black tempera paint
- 2 thermometers
- Water
- Sunshine
- Graph sheet

Activities / Procedures:

1. Take 2 Styrofoam cups. Paint the outside of one cup black and leave the other white.
2. Pour equal amounts of tap water into both cups.
3. Put a thermometer in each cup. Take the temperature in each cup and record on graph sheet.
4. Put both cups outside in the sun. In 30 minutes check temperature again. Record on graph.
5. Repeat at different time intervals and record.
6. Discuss the relationship of color to the absorption of heat.

Evaluation / Assessment:

- Teacher observation

Extension / Integration Ideas:

- Have students construct their own graphs to visualize temperature change.

Subject / Topic of Study: Physical Science - Shadows

Grade Level: 4

Time Considerations: All day

Purpose / Objectives:

S.4.20 Predicts changes in shadow length and direction in relation to light source and motion (constructs a sundial or shadow stick).

Materials / Resources Needed:

- Paper plates
- Small round dowels
- Watches
- Compass

Activities / Procedures:

1. Insert a small round dowel in the middle of a white paper plate.
2. Give one to each child.
3. Place the sundials you have just made outside in the morning at 9:00. Have each child mark the position of the shadow at the edge of his plate and label the hour.
4. Repeat every hour until the end of the school day.
5. Use the sundials the following day to tell the time throughout the day.

Evaluation / Assessment:

- Teacher observation

Extension / Integration Ideas:

- Have students answer the question, "How many times would the shadow pass the plate each week? Each month? "

Subject / Topic of Study: Shadows / Science

Grade Level: 4

Time Considerations: 1 day

Purpose / Objectives:

LA 4.2 Listens and responds to a variety of literary forms.

S 4.20 Predicts changes in shadow length and direction in relation to light source and motion (constructs a sundial or shadow stick)

S 4.1 Construct a table or chart to interpret the differences of their findings.

Materials / Resources Needed:

- "Hide- and -Seek Shadow" poem by Margaret Hillert
- Sidewalk chalk (3 different colors)
- Journals

Activities / Procedures:

1. Read poem "Hide- and -Seek Shadow"

I walked with my shadow,
I ran with my shadow,
I danced with my shadow,
I did.
Then a cloud came over
And the sun went under
And my shadow stopped playing
And hid.

2. Pair students. Have partner trace around feet so you will know where to stand for the next two tracings.
3. Trace around the perimeter of the shadow and write name inside foot.
4. Return to the classroom and brainstorm predictions in pairs. Have whole group discussion and record responses.
5. Write about predictions in journals.
6. Several hours later trace shadow a second time using a different color of chalk.
7. Record in journal what happened to your shadow. Predict what will happen the third time.

8. Several hours later trace shadow a third time using a different color of chalk.
9. Pose questions for small group or whole group discussion:
 - What happened to the third shadow?
 - Compare your shadow with your partner's.
 - Is there anything similar or different?
 - Do you see a pattern?
 - Why do you think the shadows were different in length and shape at different times?
10. Construct a chart of students findings after each drawing.

Evaluation / Assessment:

- Teacher observation
- Journals

Extension / Integration Ideas:

Recommended literature:

- What Makes a Shadow? by Clyde Robert Bulla
- Me and My Shadow by Arthur Dorros
- My Shadow by Susan Winter
- Bear Shadow by Frank Asch
- My Shadow by Ted Rand

Source:

On the Sunny Side by Donna Gleason and Cynthia Watters

Subject / Topic of Study: Science and Social Sciences: Shadow Directions

Grade Level: 4

Time Considerations: 15-30 minutes

Purpose / Objectives:

SS.4.7 Distinguishes between political and physical maps.

S.4.1 Asks questions, makes inferences and predictions, uses estimation and measurement, uses evidence to construct explanations, makes sketches and diagrams to explain ideas, organizes data into tables and charts for interpretation, reads and interprets various types of graphs, formulates some hypotheses, identifies and controls a limited number of variables, and designs a simple experiment.

S.4.5 Demonstrates how a compass can be used to find direction. Shows how magnetism is used to create a compass and how compasses tell direction.

S.4.20 Predicts changes in shadow length and direction in relation to light source and motion (constructs a sundial or shadow stick).

S.4.37 Uses models to relate the movement of the Earth and tilt of the axis to the seasons. Observes through a model the angle of sunlight as it relates to seasonal changes.

Materials / Resources Needed:

- Sticks (preferably straight)
- Pencils
- Paper
- Clip boards

Activities / Procedures:

Background information

In the days before compasses were readily available to assist in map-making and map-reading, early pioneers relied on the sun to help them with their predictions. A pioneer would drive a straight stick into the ground as nearly straight up and down as he could (not at an angle). The shadow the stick cast could be used to roughly determine the direction. For example, at 9:00 a.m., the sun is in the east and so the shadow would point west. At 3:00 p.m., the sun is in the west, so the shadow cast would point to the east. In the spring and summer months, the sun is south of the equator, so the shadows are tilted a bit, pointing northwest at 9:00a.m., north at 12:00 noon and northeast at 3:00 p.m. In the autumn and winter, the sun is more nearly straight above Georgia, so the shadow will be more nearly east and west.

Settlers would use the sun and shadows to help them draw maps along trails, roads, creeks, rivers, etc. They could accurately draw twists and turns by using the sun to help them determine the direction and degrees of the turns and bends. Pioneers could also read maps using the sun. In modern times, hikers and hunters will place a compass onto their maps to help them with directions in the wilderness. In olden times, settlers and pioneers could use a stick and the sun for roughly the same purpose. This method is less accurate in the late fall and early winter from about 10:30 a.m. to 1:30 p.m., as the sun is nearly overhead, and will not cast a very distinctive shadow. This was the time most pioneers in the wilderness took a lunch break.

- Have students use this process to determine directions of objects in Living Classroom, and relation to each other (e.g. Sun Center 3 is northwest of the Apple Orchard, etc.)

Evaluation / Assessment:

- Orally quiz students by placing a stick in the ground and asking them to determine direction. Explain how it changes as the sun moves from east to west in the sky.

Extension / Integration Ideas:

- Have students draw their own maps of the trails in the Living Classroom, using the sun to determine directions.

Subject / Topic of Study: Sound / Indian Tribes

Grade Level: 4

Time Consideration: 1 week - 45 minutes each day

Purpose / Objectives:

- S.4.12 Describes sources of sounds and how sounds move through different kinds of matter. Compares how different sounds move through air, water, rock, and similar materials
- S.4.13 Defines sound and identifies its properties. Observes that sound is produced by vibrations.
- S.4.14 Discovers that sound varies in pitch, intensity, and quality. Produces sounds that vary as to high, low or loud, soft, and produces sounds that differ in tone.
- S.4.15 Investigates the relationship between attributes of waves and qualities of sound. Connects attributes of waves (wavelength and frequency) to attributes of sound (pitch, intensity).
- S.4.16 Describes how we hear sounds. Describes how the outer, middle, and inner ear transmit vibrations to the brain.
- S.4.17 Recognizes technological devices that produce sound (loudspeakers, bullhorns) or help humans hear better (hearing aid, stethoscope).

Materials / Resources Needed:

- Indians of the West by Rae Baines
- Computer
- Encyclopedia
- Chart paper
- Drums
- Indian Village

Activities / Procedures:

1. Teacher will read about several examples of Northwest Indians.
2. Students will select a tribe to research. Divide the class into five groups (5 tribes).
3. Students will choose a way to present information to the class without words.
4. Using only sound and action, students will convey information to other class members.

5. After groups present then students will list reasons sound was important to tribes.
6. Teacher will introduce how sound is produced, variety in pitch, intensity, and quality. Students will have the opportunity to hit drums of various size and shape and compare.
7. Students will place hands over, behind, and beside ears to capture sound.
8. Teacher will display example of outer, middle, and inner ear on board.
9. Students will list familiar noises/sounds and classify as pleasant or non pleasant.
10. Teacher will list devices which produce sound or help humans hear (student's suggestions).
11. As a wrap up, students will go to the Indian Village / Pioneer Homestead in the Living Classroom and discuss the difference between hearing and listening.

Evaluation / Assessment:

- Rubric about presentation
- Student lists
- Teacher observation

Extension / Integration Ideas:

- Students can create tribal drama and create costumes to accompany, then present it out in the Living Classroom.

Subject / Topic of Study: Physical Science - Sound

Grade Level: 4

Time Considerations: 50 minutes

Purpose / Objectives:

S.4.13 Observes that sound is produced by vibrations

Materials / Resources Needed:

- Long, thin tree branch that is very flexible
- Fishing line tied to the end of the branch
- Light fishing bobber
- A marble

Activities / Procedures:

1. Review that sound is produced by vibrations.
2. Take the class out to the reflecting pond in the Living Classroom.
3. Fasten the bobber to the line that is on the flexible branch. Throw bobber into the water as far as possible. Hold in hand.
4. Drop the marble into the pond. See the circles of waves go out on the surface of the water. They are like sound waves that go out when sounds are made.
5. The waves move the bobber up and down; the bobber moves the line, and the line moves the tip of the branch and you feel the wave movement through your hand. The water waves are like air waves and the bobber is like your eardrum. The line is like the three bones that carry the sound to the inner ear.
6. Let each child hold the branch to feel the sound vibrations.

Evaluation / Assessment:

- Teacher observation

Extension / Integration Ideas:

- Read Magic School Bus in the Haunted Museum by Joanna Cole.

Subject / Topic of Study: Physical Science - Sounds

Grade Level: 4

Time Considerations: 50 minutes

Purpose / Objectives:

S.4.12 Describes sources of sounds and how sounds move through different kinds of matter. Compares how different sounds move through air, water, rock, etc.

Materials / Resources Needed:

•Pencils

Activities / Procedures:

1. Divide students into pairs and take them to the Living Classroom.
2. Have one student put their ear up to a tree while the other partner taps the opposite side with a pencil. Listen for the sound that is made.
3. Repeat procedure using a rock.
4. Repeat procedure using a hollow tree.
5. Back in the classroom fill a balloon with water and listen through the balloon.
6. Discuss what object allowed the sound to travel the best? the worst?.

Evaluation / Assessment:

•Teacher observation

Extension / Integration Ideas:

•Read Magic School Bus in the Haunted Museum by Joanna Cole.

Subject / Topic of Study: Trees / Science

Grade Level: 4

Time Considerations: 30 - 45 minutes

Purpose / Objectives:

- S 4.1 Asks questions, makes inferences and predictions, uses estimation and measurement, uses evidence to construct explanations, makes sketches and diagrams to explain ideas, organizes data into tables and charts for interpretation, reads and interprets various types of graphs, formulates simple hypotheses, identifies and controls a limited number of variables, and designs a simple experiment.
- S 4.2 Uses encyclopedias, science reference magazines, books and other media to obtain information related to science concepts.
- S 4.4 Actively engages in the learning process via hands-on/minds-on science activities and experiences. Uses appropriate tools to collect and analyze data and solve problems.
- S 4.23 Describes relationships in living communities, changes that occur, and the impact of these changes. constructs a model or diagram of a food chain/food web. Describes the impact of an interruption in the chain.

Materials / Resources Needed:

- Trees in the Living Classroom
- Clipboards
- Writing instruments

Activities / Procedures:

1. Teacher will discuss the various types of trees and the types of places in the forest that they grow best. Also, teacher will discuss the different tree profile that will result from the same type of tree growing in different locations of the forest.
2. Students will proceed to the Pioneer Homestead Area and notice how the small pine trees are growing in an area that was recently a cleared "meadow." Pines are known as "Pioneer Trees" and will grow in clearings where there is ample sun and little ground-cover.
3. Next, students will notice the few large, mature pines in this area that have a large tree-profile, with large thick branches that spread from a thick trunk. Students will follow the trail eastward in to the mature pine forest. Students will notice the tall thin tree-profile. These trees compete for sun so they grow tall and thin with small branches to reach the sun. Lower shade branches eventually die and fall to the forest floor. The forest floor is covered with acidic pine needles, which inhibit

other plants and trees from growing in this shady area.

4. Students should walk westward to the trail into the hardwood forest area. The large hard-woods have a high, spreading canopy. These trees are soaking up as much sunshine as possible. Younger hardwoods' tree-profile is more like the pine forest, they are tall and thin. These trees place most of their energy into upward growth to meet the sunlight. When they reach this height, they will spread out. The forest floor is covered with a rich compost of organic leaf-mold and humus. This soil supports more small trees and undergrowth than the mature pine forest. Hardwood trees at the edges of clearings have a more spread out tree-profile, as they are able to develop more sun-catching lower branches. Eventually, as the larger hardwood trees get old and die they will fall to the forest floor, creating more sunny clearings for smaller trees to grow in the healthy sunlight.

Evaluation / Assessment:

- Students should be able to view several trees in nature or in drawings or photographs and tell by the tree-profile and size which type of forest and at which location the particular tree may have grown.

Extension / Integration Ideas:

Questions for further discussion:

- How do hardwoods take over an older pine forest?
- How do young pines take over an older hardwood forest?
- How do humans change the forest when they cut trees for lumber?
- How does the presence or absence of water affect the types of trees in the forest?

Subject / Topic of Study: Science / Art - Leaf Tracings

Grade Level: 4 / 5

Time Consideration: 30 minutes Living Classroom, 30 minutes classroom

Purpose / Objectives:

FAVA.4.4 Creates artworks using direct observation, lines, shapes and space, spatial concepts, balance, and contrast.

Materials / Resources Needed:

- Construction paper (Fall colors)
- Black glue
- Scissors
- Plastic baggies

Activities / Procedures:

1. Take students out on the nature trails in the Living Classroom. Have students collect 5 - 8 various leaves of different sizes and from different species of trees. Students will place the leaves in the plastic baggies.
2. In the classroom, students will trace their leaves on different Fall colored sheets of construction paper.
3. Students will cut out their different colored leaves and arrange them on a large sheet of construction paper.
4. Students will glue their leaves down and delineate them with black glue and draw details such as leaf veins with the black glue.

Evaluation / Assessment:

- Finished leaf projects

Subject / Topic of Study: Life Science - Ecosystems

Grade Level: 4

Time Considerations: 50 minutes

Purpose / Objectives:

S.4.23 Describes relationships in living communities.

Materials / Resources Needed:

- Attached worksheet
- Clip boards
- Pencils

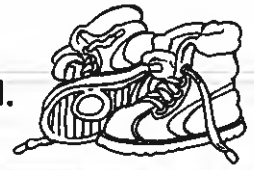
Activities / Procedures:

1. Review elements of an environment and ecosystem.
2. Take the class for a walk on the nature trail.
3. Give pairs of students each a copy of the "Scavenger Hunt" worksheet.
4. Have students skim the page to get an idea of what they will be looking and listening for.
5. After the walk, compare and discuss the student's findings.

Evaluation / Assessment:

- Teacher observation
- Student recording sheets

Environment Scavenger Hunt



Use this page with a partner while walking through your school neighborhood. In each box, draw and/or describe your answer as clearly as possible.

<p>The largest living thing</p>	<p>The smallest living thing</p>	
<p>A nonliving thing that was never alive</p>	<p>An animal (not a person)</p>	<p>Ten different things that are these colors (five should be living and five should be nonliving):</p> <p>Red</p> <p>Pink</p> <p>Orange</p> <p>Yellow</p> <p>Green</p> <p>Blue</p> <p>Purple</p> <p>Brown</p> <p>Black</p> <p>White</p>
<p>A nonliving thing that was once alive</p>	<p>Four sounds (two from living things; two from nonliving things)</p> <p>1.</p> <p>2.</p> <p>3.</p> <p>4.</p>	
	<p>Something you wish were not in this environment (not a person)</p>	<p>Something you're glad is in this environment (not a person)</p>

Subject / Topic of Study: Life science

Grade Level: 4

Time Considerations: 4-50 minute periods

Purpose / Objectives:

S.4.23 Describes relationships in living communities, changes that occur, and the impact of these changes. Constructs a model or diagram.

Materials / Resources Needed:

- Clipboards
- Paper
- Pencil
- Poster board
- Markers

Activities / Procedures:

Day 1

1. Give background information on web of live and food chains. Addison-Wesley pp. 70-75.

Day 2

2. Have class quietly walk the nature trail looking and listening for signs of wildlife or plant life. Have them write or illustrate what they see.

Day 3

3. Back in the classroom divide into teams and have students identify the inter-relationships between nature they have found. Have them construct a model of a food web identifying as many plants and animals found on the nature trail as possible.

Day 4

4. Have groups present webs to class. After presentation reemphasize that plant life is at the source of all food chains.

Evaluation / Assessment:

- Evaluation of completed food chain posters

Extension / Integration Ideas:

- Make food chain models

Subject / Topic of Study: Life Science/Food Chain

Grade Level: 4

Time Considerations: 30 minutes

Purpose / Objectives:

S 4.23 Describes relationships in living communities, changes that occur, describes the impact of an interruption in the chain.

Materials / Resources Needed:

- Small plastic sandwich bag
- Index cards
- Pencils
- Popcorn

Activities / Procedures:

1. Set a large outdoor area to be an "eating area"
2. Designate another area to be a cemetery for "dead animals"
3. Choose 2 students to be eagles and six to be snakes. The rest of the students will be mice. Provide each mouse with a small plastic bag to represent its stomach.
4. Give each animal a name tag.
5. Spread popcorn on the ground inside the eating area.
6. Allow the mice to run around the eating area for 2 minutes and "eat" popcorn by placing it in bags.
7. After 2 minutes, signal the snakes to chase the mice to "eat" them. A mouse is eaten when it is tagged by the snake. It must give the bag of popcorn to the snake and go to the cemetery.
8. After 2 minutes, the eagles may go in and chase the snakes and remaining mice to "eat" them. All tagged snakes and mice must go to cemetery.
9. After 2 minutes, stop and count how many eagles got food, how many snakes and mice still have food, and how many have died.
10. Following the game, invite students to discuss how the simulation compares to a real food chain.

Evaluation / Assessment:

- Teacher observation

Subject / Topic of Study: Life science

Grade Level: 4

Time Considerations: 4-50 minute periods

Purpose / Objectives:

S.4.23 Describes relationships in living communities, changes that occur, and the impact of these changes. Constructs a model or diagram.

Materials / Resources Needed:

Clipboards, paper, pencil, poster board, markers

Activities / Procedures:

Day 1 - Give background information on web of life and food chains. Addison-Wesley pgs. 70-75.

Day 2 - Have class quietly walk the nature trail looking and listening for signs of wildlife or plant life. Have them jot down as they see.

Day 3 - Back in the classroom divide into teams and have students identify the inter-relationships between nature they have found. Have them construct a model of a food web identifying as many plants and animals found on the nature trail as possible.

Day 4 - Have groups present webs to class. After presentation reemphasize that plant life is at the source of all food chains.

Evaluation / Assessment:

Evaluation of completed food chain posters.

Extension / Integration Ideas:

Make food chain models.

Subject / Topic of Study: Life Science

Grade Level: 4

Time Considerations: 50 minutes

Purpose / Objectives:

S.4.23 Describes relationships in living communities, changes that occur, and the impact of these changes. Constructs a model or diagram of a food chain/food web. Describes the impact of an interruption in the chain.

Materials / Resources Needed:

- Index cards with string connected to hang around neck
- Pencils
- A large ball of yarn

Activities / Procedures:

1. Take group to the reflecting pond S.U.N. center.
2. Draw or label an index card with a plant or animal located in that area.
3. Form a circle. Use yarn to show how each plant and animal is connected in a food web.
4. Discuss which plant/animal has the most things connected to it. What would happen if one thing in the chain was destroyed?

Evaluation / Assessment:

- Teacher observation of understanding of interdependence of plants/animals.

Source:

- Project Learning Tree Environmental Education Activity Guide: Pre K - 8, pp.148-150.

Subject / Topic of Study: Science / Ecology

Grade Level: 4

Time Considerations: 6 class periods

Purpose / Objectives:

S.4.23 Describes relationships in living communities, changes that occur and the impact of these changes. Constructs a model or diagram of a food chain/food web. Describe the impact of an interruption in the chain.

LA.4.55 Determines appropriate resource to answer specific questions.

Materials / Resources Needed:

- Pencils
- Paper
- Reference materials
- Copy of "Take Action" worksheet
- Living Classroom and school campus as resources

Activities / Procedures:

1. Divide class into 4 groups, give each group one of the 4 ecology plans from the "Take Action" worksheet.
2. Each group is to complete their action plan. (These groups are cooperative groups and will decide among themselves how they will complete the project and how their division of labor will be carried out.)

Evaluation / Assessment:

- Teacher observation
- Complete project

Extension / Integration Ideas:

- Invite and schedule other classes to view the completed projects.
- Assign "Keeping the Balance" and "Animals on the Go" worksheets

Source:

Mailbox Intermediate, Education Center, Inc., April/May, 1998, pp. 39-41.

Subject / Topic of Study: Science/Ecology

Grade Level: K-5

Time Considerations: 45 minutes

Purpose / Objectives:

- Discusses causes and possible solutions for pollution.
- Listens to a variety of literary forms, including stories and poems.

Materials / Resources Needed:

- Lester and Clyde by James H. Reece

Activities / Procedures:

1. The class will visit the S.U.N. Center at the Reflecting Pond.
2. Read the book Lester and Clyde.
3. Discuss the difference between Clyde and Lester's home and the pond Lester visited.
4. Discuss how pollution had changed the pond.

Evaluation / Assessment:

- Student participation in discussion of pollution.

Extension / Integration Ideas:

- Students could act out the story of Lester and Clyde.
 - Create a rap or song - "Pollution Solution"
-

Subject / Topic of Study: Ecology / Earth Day

Grade Level: 4

Time Considerations: 45 minutes

Purpose / Objectives:

- S.4.25 Discusses causes and possible solutions for pollution. Identifies types of pollution, such as air pollution, water pollution and noise pollution, and discusses how overpopulation contributes to pollution. Formulates ideas for solutions to existing pollution problems.
- S.4.26 Discusses the importance of recycling and identifies examples of recycled products. Identifies and collects examples of materials that can be recycled and those that cannot. Shows examples of products and materials that are biodegradable and those that are non biodegradable.

Materials / Resources Needed:

- Earth Day by Linda Lowery

Activities / Procedures:

1. Visit the S.U.N. Center at the Reflecting Pond.
2. Share the book Earth Day.
3. Discuss ways Kingston Elementary students can make every day Earth Day.
4. Upon returning to the classroom, students may illustrate posters to promote involvement in Earth Day activities..

Evaluation / Assessment:

- Student participation in discussion
- Illustrated posters promoting conservation/recycling

Extension / Integration Ideas:

- Have students search for signs of pollution in the Living Classroom and brainstorm possible causes.
- Establish recycling bins for school trash.

Subject / Topic of Study: Composting with Worms / Science

Grade Level: 4

Time Considerations: Several weeks or months

Purpose / Objectives:

- S 4.1 Asks questions, makes inferences and predictions, uses estimation and measurement, uses evidence to construct explanations, makes sketches and diagrams to explain ideas, organizes data into tables and charts for interpretation, reads and interprets various types of graphs, formulates simple hypotheses, identifies and controls a limited number of variables and designs a simple experiment.
- S 4.4 Actively engages in the learning process via hands-on/minds-on science activities and experiences. Uses appropriate tools to collect and analyze data and solve problems.
- S 4.23 Describes relationships in living communities, changes that occur, and the impact of these changes. Constructs a model or diagram of a food chain/food web. Describes the impact of an interruption in the chain.
- S 4.25 Discusses causes and possible solutions for pollution. Identifies types of pollution, such as air pollution, water pollution and noise pollution, and discusses how overpopulation contributes to pollution. Formulates ideas for solutions to existing pollution problems.
- S 4.26 Discusses the importance of recycling and identifies examples of recycled products. Identifies and collects examples of materials that can be reused or recycled and those that cannot. Shows examples of products and materials that are biodegradable and those that are non biodegradable.

Materials / Resources Needed:

- Large glass container-fish bowl or aquarium
- Worms
- Garden trowels
- Leaves
- Yard waste
- Soil
- Shovels
- Organic scraps
- Newspaper

Activities / Procedures:

1. Teacher will explain to students how bacteria and fungus (too small to see) live in the soil and break down organic waste into humus, which helps enrich the soil and hold moisture. Worms will also break down waste. This experiment will allow students to see how organic waste is slowly turned into humus by bacteria, fungus and worms.

2. Students will fill their glass container with 1 or 2 inches of soil from the forest floor. Next they will dig worms from the Living Classroom, or purchase some worms from a bait store. Students will put worms into soil. Next, they will add organic waste over a period of days or throughout the school year. Food scraps (not meat, cheese, or animal matter), yard waste, leaves, grass clippings, newspaper, paper towels, etc. may all be composted.
3. Students should moisten compost regularly and turn the compost to allow oxygen to penetrate the lower levels.
4. Students will notice that the organic material breaks down into rich black humus over a period of several weeks. Students should also notice that the total volume of humus is less than the volume of organic wastes, because the worms and bacteria and fungus use some of the mass of the organic wastes to live (i.e. they eat it).
5. At the end of the experiment, the humus can be spread out in the Living Classroom, or the gardens. Also, students should notice that the worms have reproduced in their favorable environment and now there are a lot more than were present at the beginning of the experiment.

Evaluation / Assessment:

- Teacher observation
- Periodic quizzing and discussion concerning what is occurring in the compost area

Extension / Integration Ideas:

- How could you make a worm farm?
- Could the class raise and sell worms to bait stores or the local fishermen as a fund raiser?

Subject / Topic of Study: Environmental Science / Math Skills

Grade Level: 4

Time Considerations: Extended Classroom Project

Purpose / Objectives:

S.4.26 Discusses the importance of recycling and identifies examples of recycled products. Identifies and collects examples of materials that can be reused or recycled and those that cannot. Shows examples of products and materials that are biodegradable and those that are non biodegradable.

M.4.3 Uses estimation strategies such as front-end rounding, and compatible numbers to predict computation results and to predict measurements.

Materials / Resources Needed:

- Chart paper
- Items for recycling
- Boxes for recyclable items
- Recycling Paper by Judith London

Activities / Procedures:

1. Discuss the importance of recycling. Share information from Recycling Paper.
2. Create a chart with realistic values given for recycled items. Have students work in groups of four to write recycling center math problems. Set guidelines for students about the type and number of problems you want.
3. Set up boxes for recyclable items in your classrooms.
4. When a box is full, have everyone estimate how many items are in the box, (or how much the box weighs, if you will be paid by the pound). Then have a volunteer count or weigh the items and compare estimates with the actual answer.

Evaluation / Assessment:

- Teacher observation
- Student's list of math problems

Extension / Integration Ideas:

- Visit the Publix Classroom to identify recyclable items.
-

Subject / Topic of Study: Ecology / Math

Grade Level: 4

Time Considerations: 45 minutes

Purpose / Objectives:

M.4.13 Uses customary and metric units to measure temperature.

M.4.26 Organizes data in charts.

S.4.1 Makes predictions, uses measurements, formulates simple hypotheses.

S.4.23 Describes relationships in living communities.

Materials / Resources Needed:

- 3 thermometers
- 3 sheets of paper, folded in half to make a tent
- A watch
- Living Classroom

Activities / Procedures:

1. Have students formulate a hypothesis for the following question: "Do plants influence the temperature of the environment?"
2. Choose 3 locations where temperatures can be read during the day (e.g. Living Classroom, blacktop, playground).
3. Determine 3 times for temperature readings, such as 10:00 a.m., 12:00 p.m., 2:00 p.m.
4. At predetermined times, go to each location and place a thermometer under a paper tent on the surface of the ground. (The tent protects the thermometer from the sun's heat.)
5. Wait 5 minutes. Record the temperature on a data chart.
6. Discuss the results from this experiment. Discuss the greenhouse effect and the effect on human population.

Evaluation / Assessment:

- Teacher observation
-

Subject / Topic of Study: Natural pigments- Art / Social Sciences

Grade Level: 4th

Time Considerations: 45-90 minutes

Purpose / Objectives:

- FAVA.4.1 Creates art works using the following properties of colors (e.g., hue, intensity, and value.)
- FAVA.4.4 Creates artwork using direct observation, lines (descriptive, directional, and expressive), shapes and space (positive and negative), spatial concepts (overlapping, placement, size, color, and detail, balance (symmetrical and asymmetrical), and contrast.
- FAVA.4.8 Demonstrates proper care and safe use of materials and tools.
- FAVA.4.9 Researches and applies regional history sources as ideas for original works of art.
- FAVA.4.16 Develops criteria for sorting artwork into categories of landscapes, cityscapes, still life, seascapes, and portraits.
- FAVA.4.20 Matches a description of a culture with an artwork representative of the same culture.
- SS.4.8 Describes the impact of climate and physical environment on the lifestyles of American Indians: Plains, Eastern Woodlands, Southwestern, and Pacific Northwest.
- SS.4.12 Compares and contrasts early colonial settlements in the New England, Middle Atlantic and Southern Colonies: climate, physical features, settlers' country of origin, settlers' motivations, forms of government, and use of natural resources.

Materials / Resources Needed:

- Natural pigments and dyes: green leaves, berries, different colored soils and clays, colored leaves, grasses, mosses, tree barks, nuts, or anything else in nature
 - Water
 - Paper
 - Sticks (or paint brushes)
 - Cups or jars for mixing
-

Activities / Procedures:

1. Explain how early settlers didn't have fancy dyes to color their yarns and threads. Many settlers used natural pigments to dye their yarn and thread with which they made their sheets and blankets and clothing.
2. Early settlers used crushed berries, nut hulls, clay and soil, leaves, grass and moss, tree bark and different plant roots to make their dye. In most cases, these natural dyes would fade and lighten over time and repeated washing of the fabric.
 - *Green* - crushed grass, green leaves, or moss with a bit of color
 - *Purple, blue, red* - crushed berries of various colors
 - *Brown, yellow, ocher, orange, black, gray* - soils and clay mixed with a bit of water
 - *Orange, yellow, reds, purples* - crushed autumn leaves or leaves from colored plants and a little water
 - *Orange, pink, red, yellow, purple, etc.* - crushed flower petals and water
 - *Black* - charcoal from bits of burned wood
 - *Dark brown* - tree bark rubbed onto paper with water, nut hulls and bark boiled in water and allowed to cool (tea leaves or coffee grounds)
3. Students will "paint" a picture using some natural pigments for the colors. Most of these pigments need to be mixed with a little bit of water, but some (like berry juice) need no water added.
4. Ask students to forage about the Living Classroom to obtain some of these natural pigments. Soils and clay should be mixed with enough water to have a soupy consistency. Students may share and mix their natural paints. Paint brushes may be used or students may gather sticks to use as paint brushes. Ask students to use their natural paints to paint a scene of nature that they observe in the Living Classroom.

Evaluation / Assessment:

- Teacher will examine student artwork to determine if a number of different natural "paints" have been utilized.

Extension / Integration Ideas:

- Students could dye cloth. Usually pigments were added to boiling water and yarn, thread, or cloth was soaked and boiled with this dye for as long as needed to retain the desired color.

Subject / Topic of Study: Natural pigments- Art / Social Sciences

Grade Level: 4th

Time Considerations: 45-90 minutes

Purpose / Objectives:

- FAVA.4.1 Creates art works using the following properties of colors (e.g., hue, intensity, and value.)
- FAVA.4.4 Creates artwork using direct observation, lines (descriptive, directional, and expressive), shapes and space (positive and negative), spatial concepts (overlapping, placement, size, color, and detail, balance (symmetrical and asymmetrical), and contrast.
- FAVA.4.8 Demonstrates proper care and safe use of materials and tools.
- FAVA.4.9 Researches and applies regional history sources as ideas for original works of art.
- FAVA.4.16 Develops criteria for sorting artwork into categories of landscapes, cityscapes, still life, seascapes, and portraits.
- FAVA.4.20 Matches a description of a culture with an artwork representative of the same culture.
- SS.4.8 Describes the impact of climate and physical environment on the lifestyles of American Indians: Plains, Eastern Woodlands, Southwestern, and Pacific Northwest.
- SS.4.12 Compares and contrasts early colonial settlements in the New England, Middle Atlantic and Southern Colonies: climate, physical features, settlers' country of origin, settlers' motivations, forms of government, and use of natural resources.

Materials / Resources Needed:

- Natural pigments and dyes: green leaves, berries, different colored soils and clays, colored leaves, grasses, mosses, tree barks, nuts, or anything else in nature
 - Water
 - Paper
 - Sticks (or paint brushes)
 - Cups or jars for mixing
-

Activities / Procedures:

1. Explain how early settlers didn't have fancy dyes to color their yarns and threads. Many settlers used natural pigments to dye their yarn and thread with which they made their sheets and blankets and clothing.
2. Early settlers used crushed berries, nut hulls, clay and soil, leaves, grass and moss, tree bark and different plant roots to make their dye. In most cases, these natural dyes would fade and lighten over time and repeated washing of the fabric.
 - *Green* - crushed grass, green leaves, or moss with a bit of color
 - *Purple, blue, red* - crushed berries of various colors
 - *Brown, yellow, ocher, orange, black, gray* - soils and clay mixed with a bit of water
 - *Orange, yellow, reds, purples* - crushed autumn leaves or leaves from colored plants and a little water
 - *Orange, pink, red, yellow, purple, etc.* - crushed flower petals and water
 - *Black* - charcoal from bits of burned wood
 - *Dark brown* - tree bark rubbed onto paper with water, nut hulls and bark boiled in water and allowed to cool (tea leaves or coffee grounds)
3. Students will "paint" a picture using some natural pigments for the colors. Most of these pigments need to be mixed with a little bit of water, but some (like berry juice) need no water added.
4. Ask students to forage about the Living Classroom to obtain some of these natural pigments. Soils and clay should be mixed with enough water to have a soupy consistency. Students may share and mix their natural paints. Paint brushes may be used or students may gather sticks to use as paint brushes. Ask students to use their natural paints to paint a scene of nature that they observe in the Living Classroom.

Evaluation / Assessment:

- Teacher will examine student artwork to determine if a number of different natural "paints" have been utilized.

Extension / Integration Ideas:

- Students could dye cloth. Usually pigments were added to boiling water and yarn, thread, or cloth was soaked and boiled with this dye for as long as needed to retain the desired color.

Subject / Topic of Study: Science / Art - Reflections

Grade Level: 4th

Time Considerations: 45-60 minutes

Purpose / Objectives:

- S.4.18 Demonstrates how light travels and can be separated into a visible spectrum. Produces a rainbow using a prism, water or oil (refraction).
- S.4.19 Investigates the characteristics of light, its movement and its action with objects. Demonstrates how to use mirrors to control direction of light (reflection). Manipulates mirrors to demonstrate and measure directions of light beams, angle of incidence and angle of reflection. Observes the refractive behavior of light using lenses (concave and convex), microscopes and telescopes. Distinguishes between transparent, translucent, and opaque.
- S.4.20 Predicts changes in shadow length and direction in relation to light source and motion (constructions a sundial or shadow stick).

Materials / Resources Needed:

- Paper
- Pencils
- Reflecting pond S.U.N. Center

Activities / Procedures:

1. The teacher will discuss the concept of reflections and the way that light is reflected (regular, specular, diffuse, spread reflections) from and onto certain types of surfaces.
2. Teacher will discuss the manner that a polished surface, such as a mirror or water, will reflect light rays to create a specular reflection (reflection of light rays simply means that some of them bounce back off of an object - a mirror bounces back nearly all of the light rays, water bounces back most light rays, and a sheet of black construction paper bounces back almost none of the light rays).
3. Students will view the reflections in the pond and notice how the reflections are dimmer than the actual objects around the pond. This is because some of the light rays are trapped by the pond and do not reflect back to the viewer.
4. Students will also notice that the reflected images appear "upside down" in the pond.

5. Ask students to draw the objects and their reflections in the pond. Remind students that the reflections are not as precise and bright as the actual objects, and they are also "upside down".

Evaluation / Assessment:

- Teacher will examine student artwork, suggest improvement or additions and compliment accurate portrayal of the reflections.

Extension / Integration Ideas:

- Draw mirror images - reflections from mirrors.
- Draw self-portraits using water of mirror to reflect images.
- Discuss refraction as it relates to water and reflections.

Subject / Topic of Study: Science / Art - Leaf Tracings

Grade Level: 4 / 5

Time Consideration: 30 minutes Living Classroom, 30 minutes classroom

Purpose / Objectives:

FAVA.4.4 Creates artworks using direct observation, lines, shapes and space, spatial concepts, balance, and contrast.

Materials / Resources Needed:

- Construction paper (Fall colors)
- Black glue
- Scissors
- Plastic baggies

Activities / Procedures:

1. Take students out on the nature trails in the Living Classroom. Have students collect 5 - 8 various leaves of different sizes and from different species of trees. Students will place the leaves in the plastic baggies.
2. In the classroom, students will trace their leaves on different Fall colored sheets of construction paper.
3. Students will cut out their different colored leaves and arrange them on a large sheet of construction paper.
4. Students will glue their leaves down and delineate them with black glue and draw details such as leaf veins with the black glue.

Evaluation / Assessment:

- Finished leaf projects
-

Subject / Topic of Study: Health: Endocrine/Immune System,
Communicable/Noncommunicable Diseases

Grade Level: 5

Time Considerations: one week - 1 class period per day

Purpose / Objectives:

Students will be divided into small "family" groups of 4-6 persons. Each group will receive an index card with instructions about someone in the family getting symptoms of an illness or disease common to the early settlers. Each "family" has to decide what to do to save the life of their family member(s). If they cannot, the family member "dies". The group with the healthiest/most members wins.

- H.5.7 Recognize diseases/illnesses (e.g. diabetes, growth hormone abnormalities, and hepatitis) that affect the endocrine/immune system and discuss methods of prevention.
- H.5.8 Describe the difference between communicable and noncommunicable diseases.
- H.5.9 Identify some of the ways to prevent the spread of communicable diseases (e.g. inoculation and quarantine).
- H.5.10 Recognize the basic concept of how our immune system works.

Materials / Resources Needed:

- Living Classroom Homestead
- Student Writing Center (or similar software)
- Early Settler Activity Guide by Elizabeth Stenson
- Early Health and Medicine by Bobbie Kalman
- 5th grade science/health textbook
- access to the internet (optional)
- Clipboards
- Computer lab
- Index cards
- Pencils
- Paper

Activities / Procedures:

1. Read about and discuss in class the endocrine/immune system and communicable/noncommunicable diseases.
2. Read about and discuss common illnesses during pioneering days and the common treatments used during that time. (Medical instruments were not sterilized.)
Discuss common treatments such as:
 - Phlebotomy: bleeding or bloodletting
 - Plasters: paste-like mixtures applied to the chest or back for cold or pain
 - Poultices: were used for cuts, bites, wounds, and boils. They made from bread and milk with other things such as onions, potatoes, linseed oil, and herbs
 - Early surgery: amputation, cauterization (of veins or arteries)
 - Blistering: burning of the skin to drive away an illness
 - Natural Medicines: herbs and other remedies passed down from other Settlers, Indians and others. (See pp. 10-13, Early Health and Medicine)
3. Discuss nutrition and the affect on the human body (scurvy- vitamin D deficiency, rickets-calcium deficiency), etc.
4. Discuss childhood illnesses (measles, chicken pox, scarlet fever, whooping cough, polio, diphtheria, toxins and development of antitoxins, tuberculosis).
5. Discuss epidemics (e.g. cholera, small pox (cow pox))
6. After subject has been introduced, studied, and discussed for several days, teacher and students will go to the homestead. Divide the students into small "family" groups of 4-6 persons. Each group will receive an index card with instructions about someone in the family getting symptoms of an illness or disease common to the early settlers. Each "family" has to decide what to do to save the life of their family member(s). If they cannot, the family member "dies". The group with the healthiest/most members wins.

Evaluation / Assessment:

- Student participation, teacher observation, a Rubric's model (or a similar checklist type of evaluation)

Extension / Integration Ideas:

- Students might enjoy researching some of the diseases and helping make the index cards for the activity at the end of the week.

Source:

- Information concerning common treatments during pioneering comes from Early Health and Medicine by Bobbie Kalman.

Subject / Topic of Study: Archeological Dig

Grade Level: 5

Time Considerations: 1 hour-several periods

Purpose / Objectives:

- SS.5.7 Explains the economic and social changes that came about in the late 19th century as a result of the growth and expansion: industry/business (small business to monopolies), transportation (hubs centers), migration (farms to cities), and immigration.
- SS.5.9 Explains how the following groups lived and worked in the American West during the late 19th century: miners and prospectors, frontier settlers (ranchers and farmers) and railroad workers.
- SS.5.10 Describes changes impacting American Indian tribes in the American West during the last half of the 19th century: encroachment of American Indian lands by non-American Indians, relocations to reservations, and government policies.

Materials / Resources Needed:

- Digging tools, paper and pencil
- "Artifacts" placed in corresponding archeological areas.
 - Pit #1:* primitive Indians: shards of broken pinch pots, small spearheads, rock pounding tools, burned wood ash
 - Pit #2:* Cherokee Indians: shards of coil-built bowls and cups, arrowheads, pieces of woven baskets, bone needles, burned wood ash, beads, stone axes, leather bags
 - Pit #3:* early pioneers: shards of thrown earthen-wave pots and dishes, bullets simple natural cloth, metal axe heads, buttons, metal buckles, crude paper, wooden bucket, leather shoes
 - Pit #4:* Turn-of-century settlers: shards of wheel thrown decorated china, bullet casings, patterned fine cloth, bricks, zippers, eyeglasses, tin cans, glass containers, old newspaper bits, metal pails, tooled leather articles, etc.
 - Pit #5:* modern people: pieces of broken plastic dishes, screen-printed cloth, aluminum cans, floppy discs, calculators, velcro closures, vinyl sneakers, plastic containers, magazine articles, etc.

Activities / Procedures:

1. Teacher will discuss the various ways archeologists can examine artifacts to determine the technological advancement of a group of people.
2. Students will be broken into groups that will each explore an archeological dig site in the Living Classroom.

3. Students will display artifacts and examine their artifacts to determine the technological advancement of the people who lived in each area.

Evaluation / Assessment:

•Students should be able to generalize a time period and level of technological development from the artifacts found at the archeological dig site.

Extension / Integration Ideas:

- What do the things that people throw away tell about them?
- How does our trash get covered up and protected by the soil?
- A pottery or weaving lesson where students duplicate ancient and modern pottery and weaving techniques.

Subject / Topic of Study: Scarcity of Resources

Grade Level: 5

Time Considerations: 1-2 class periods

Purpose / Objectives:

SS.5.5 Identifies three basic questions asked by any society regarding production from scarce natural and human resources:

- Who decides what will be produced?
- What factors of production will be used and how?
- How will the results of production be distributed?

LA.5.8 Summarizes and/or records orally presented information.

LA.5.31 Draws conclusions, makes predictions, compares/contrasts, and makes generalizations.

LA.5.51 Experiences traditional and contemporary literature through a variety of media.

Materials / Resources Needed:

- Early Farm Life by Lise Gunby
- Early Stores and Markets by Bobbie Kalam
- Index cards
- Chart paper
- Markers
- Pencils

Activities / Procedures:

1. Teacher reads facts about farming (p. 72) in Early Farm Life and shares the pictures in the book with the students.
2. Students determine what basic resources pioneers had and needed. List the needs on the board (e.g. clothes, food, animals, etc.).
3. Students will create a flow chart to show how resources can be used for different purposes.
4. Students break into groups and choose 2 resources (e.g. corn and cattle) that they will use to barter at the country store.
5. As a group, students will place their resources on index cards and exchange. (Students can draw or cut out pictures from magazines to represent their resources.)

6. Students will list as many purposes as possible for their new resources. (Some resources will run out, which shows the scarcity of some items).

7. Determine who gets the most out of his or her exchange.

Evaluation / Assessment:

- Discussion
- Teacher observation
- Flow charts

Extension / Integration Ideas:

- Students can assign monetary value to resources and determine how much they need and how much they receive for something.
- Students can group themselves as a family and determine resources necessary for sustaining 1 year of frontier life.
- Compare and contrast early markets to stores of today.
- Visit the Publix Classroom.

Subject / Topic of Study: Language Arts - Motion, Energy and Pioneer Occupations

Grade Level: 5

Time Considerations: 2 Class Periods

Purpose / Objectives:

- LA.5.6 Adjusts manner and style of speaking to suit audience and situation.
- LA.5.10 Responds to literal, inferential, and evaluative questions on orally presented material.
- LA.5.11 Increases vocabulary to reflect a growing range of interests and knowledge.
- LA.5.12 Communicates effectively when using descriptive language, relating experiences, and retelling stories read, heard, or viewed.
- LA.5.13 Uses increasingly complex sentence structures in oral communication.
- LA.5.14 Determines the literal and figurative meanings of words.
- LA.5.15 Uses grade/age appropriate standard American English when communicating orally.

Materials / Resources Needed:

- Indian Village and Pioneer Homestead
- Chart paper
- Pencils
- Paper
- Books - *Early Settler Life Series*:
 - Early Artisans by Bobbie Kalman
 - Early Loggers and the Sawmill by Bobbie Kalman
 - Early Stores and Markets by Bobbie Kalman
 - Early Travel by Bobbie Kalman
 - Early Village Life by Bobbie Kalman

Activities / Procedures:

1. Teacher will put the following words up on a chart: potential energy, kinetic energy, gravity, speed, acceleration, length, depth, height, and motion.
2. Students will orally define and give examples of each word. If any words are not defined, they can look in a dictionary.
3. Students will divide into groups and look at the following books and list early settler occupations:
 - Early Artisans by Bobbie Kalman
 - Early Loggers and the Sawmill by Bobbie Kalman
 - Early Stores and Markets by Bobbie Kalman
 - Early Travel by Bobbie Kalman
 - Early Village Life by Bobbie Kalman
4. Students will regroup and report occupation.
5. Students will discuss how words we defined can relate to different occupations.
6. Each student will write one sentence using occupation and correlating science words. We will use all occupations and words, and teacher will combine sentences in paragraph form on chart paper.
7. Students will go to Indian Village and Pioneer Homestead and use the same skills as pioneers (e.g. gathering, building, etc.)

Evaluation / Assessment:

- Student discussion
- Sentences
- Teacher observation

Extension / Integration Ideas:

- A guest with an occupation similar to that of pioneers visits your class (e.g. farmer, carpenter, etc.)
- Students can build smaller models with blocks, Lincoln Logs, index cards, or Legos.

Subject / Topic of Study: Language Arts

Grade Level: 5

Time Considerations: 1 class period

Purpose / Objectives:

LA.5.48 Use descriptive words and phrases

Materials / Resources Needed:

- Pencil
- Paper

Activities / Procedures:

1. With the Publix Classroom in mind, students should think of their favorite scent, but they should not say it out loud.
2. Students will write a descriptive paragraph about their favorite scent. (Do not name the scent in the paragraph.)
3. Have students exchange paragraphs with a classmate. Each student tries to guess the scent from the paragraph given them.
**Note: scents can be foods (peaches, bacon cooking, bread baking, etc.) or non-food products (baby powder, flowers, air freshener, furniture polish, pine scent, etc.). Make a few suggestions, if students are stumped.*

Evaluation / Assessment:

- Teacher observation
- Finished paragraph about a favorite scent

Extension / Integration Ideas:

- Describe your least favorite scent in the Publix Classroom.
- Write a short narrative about losing your sense of smell for 24 hours.

Subject / Topic of Study: Language Arts (Creative Writing)

Grade Level: 5

Time Considerations: 1 class period

Purpose / Objectives:

LA.5.31 Draws conclusions, makes predictions, compares/contrasts, and makes generalizations.

LA.5.38 Uses examples from literature to create individual and group stories.

LA.5.42 Writes a selection of 3 or more paragraphs about a subject.

LA.5.48 Uses descriptive words and phrases.

LA.5.49 Uses various organizational strategies, styles and purposes.

Materials / Resources Needed:

- Living Classroom (*Students could complete stories while sitting in a S.U.N. center in the Living Classroom.*)
- Worksheet or chart with the story prompts written on it.

Activities / Procedures:

Using the Living Classroom as the frame of reference students choose one of the selected story prompts to write a story.

1. You are walking through the Living Classroom, and one of the trees begins to talk. What does it say? What do you do? Does anyone else find out what's going on?
 2. On the way to the Living Classroom, you meet a unicorn. What do you both say and do? Write a story about this meeting.
 3. Write a mysterious story with this title: "The Case of Mr. Smith's Disappearing Dog Dobie" (or Disappearing Deck, Disappearing Dipper, Disappearing Drill).
 4. During a hike in the Living Classroom, you spot an odd-looking shed made from wood, logs, mud, and old tires. You open the crooked, creaking door and started to see....
-
5. You're reading a chapter of *Alice in Wonderland* while sitting at a S.U.N. center. All of a sudden, you, too, are just a few inches tall. Describe your adventures as a mini person.
-

6. An absolutely unbelievable thing has just happened! Write a letter to a friend to tell all about it.

Evaluation / Assessment:

- Finished product.

Extension / Integration Ideas:

- Have students all write about the same story, then compare and contrast.
- Have each student write a different story each day.
- Write stories in groups and act out the story.
- Type and illustrate stories on the computer.
- Finish a story verbally as a group, going from one student to the next. Proofread, revise, and edit.

Source:

- Adapted from Instant Activities for Creative Writing, Scholastic, Inc.

Subject / Topic of Study: Language Arts / Creative Writing

Grade Level: 5

Time Considerations: 1-2 class periods

Purpose / Objectives:

LA.5.38 Uses examples from literature to create individual and group stories.

Materials / Resources Needed:

- Living classroom

Activities / Procedures:

1. Students visit and observe in the Living Classroom. Choose an object or animal from the Living Classroom to write about.
2. After returning to the classroom, students will write a narrative from the viewpoint of their object or animal titled "A day in the life of _____ in Kingston's Living Classroom."

Evaluation / Assessment:

- Finished product

Extension / Integration Ideas:

- Exchange papers with a partner for proofreading and editing. Rewrite and present.
- Divide class into groups, assign a different area of the school grounds (e.g. butterfly garden, compass rose garden, walking trails, reflecting pond, etc.), & write a group story about a day in the life of _____.

Subject / Topic of Study: Language Arts/Science (Wildlife Ecology/Conservation)

Grade Level: 5

Time Considerations: Variable (1-3 weeks)

Purpose / Objectives:

- S.5.17 Compares different kinds of animals and their protective adaptations. Identifies examples of animals with protective adaptations in color, physical structure, body markings, and shadings.
- S.5.2 Uses encyclopedias, science reference magazines, books and other media to obtain information.
- LA.5.64 Uses research by: choosing topics, forming questions, identifying key words, selected sources, skimming, paraphrasing, note-taking, organizing, and presenting.

Materials / Resources Needed:

- Georgia's Protected Animals sheet (Project Wild - DNR)
- Library resources including internet
- "Choosing a Product" list

Activities / Procedures:

1. After studying animal kingdoms, give students a copy of Georgia's Protected Animals (you may want to limit the list to vertebrates). Have each student choose an animal to report on - it must be an animal that could typically live and/or reproduce in our Living Classroom. If necessary, go back out to the Living Classroom to take note of the vegetation, animal species, & climactic conditions available for their "critter" to survive. Begin with listing facts, arrange facts into an outline, then continue with research paper. Students must turn in a written report, a visual representation, and an oral summary.
2. Vocabulary:
 - Endangered: Species in immediate danger of extinction.
 - Critically: Species will not survive without direct human intervention.
 - Threatened: Species present in its range, but threatened because of a decline in numbers.
 - Rare: Species not presently in danger, but of concern because of decline in numbers. (Note: some species were always rare because of their position on the food chain or due to habit preference.)
 - Extinct: Complete disappearance of a species.
 - Peripheral: Scarce in area because it is fringe or marginal habitat.

Evaluation/Assessment:

- Finished product
- Oral & visual presentations

Extention/Integration Ideas:

- Visit Chattahoochee Nature Center
- Visit Atlanta Zoo
- Write a position paper re: what we can do to help - based on current information and statistics as well as personal motivation.

Source:

Project Wild K-12 Activity Guide

Georgia's Protected Animals

Mammals

Eastern Cougar
Florida Panther
Gray Bat
Humpback Whale
Indiana Bat
New England Cottontail
Northern Right Whale
Rafinesque's Big-eared Bat
Round-tailed Muskrat
West Indian Manatee

Birds

American Oystercatcher
Bachman's Sparrow
Bachman's Warbler
Bald Eagle
Bewick's Wren
Common Raven
Gull-billed Tern
Ivory-billed Woodpecker
Kirtland's Warbler
Least Tern
Red-cockaded Woodpecker
Peregrine Falcon
Piping Plover
Swallow-tailed Kite
Wilson's Plover
Wood Stork

Amphibians

Flatwoods Salamander
Georgia Blind Salamander
Green Salamander
Hellbender
One-toed Amphiuma
Pigeon Mountain Salamander
Striped Newt

Reptiles

Alabama Map Turtle
Alligator Snapping Turtle
Barbour's Map Turtle
Bog Turtle
Eastern Indigo Snake
Gopher Tortoise
Green Sea Turtle

Hawksbill Sea Turtle
Kemp's Ridley Sea Turtle
Leatherback Sea Turtle
Loggerhead Sea Turtle
Map Turtle
Spotted Turtle

Invertebrates

Alabama Moccasinshell
Atlantic Pigtoe Mussel
Coosa Moccasinshell
Fine-lined Pocketbook
Ovate Clubshell
Southern Acornshell
Southern Clubshell
Southern Pigtoe
Triangular Kidneyshell
Upland Combshell

Fishes

Alabama Shad
Altamaha Shiner
Amber Darter
Banded Topminnow
Bigeye Chub
Black Darter
Black Madtom
Blackbanded Sunfish
Blotched Chub
Blue Shiner
Bluefin Killifish
Bluenose Shiner
Bluestripe Shiner
Broadstripe Shiner
Cherokee Darter
Coldwater Darter
Conasauga Logperch
Dusky Darter
Etowah Darter
Fatlips Minnow
Flame Chub
Frecklebelly Madtom
Freckled Darter
Freckled Madtom
Goldline Darter
Goldstripe Darter

Greenfin Darter
Highscale Shiner
Holiday Darter
Lipstick Darter
Mountain Madtom
Muscadine Darter
Northern Studfish
Ohio Lamprey
Olive Darter
Popeye Shiner
Pretty Shiner
Redeye Chub
River Darter
River Redhorse
Robust Redhorse
Sandbar Shiner
Shortnose Sturgeon
Silver Shiner
Snail Darter
Southern Cavefish
Spotted Bullhead
Stargazing Minnow
Stippled Studfish
Suwannee Bass
Tallapoosa Darter
Tallapoosa Shiner
Tangerine Darter
Trispot Darter
Wounded Darter

Georgia's Protected Species List



For more information, contact:
Nongame-Endangered Wildlife Program
116 Rum Creek Drive
Forsyth, GA 31029
912/994-1438

Mammals

Eastern Cougar
Florida Panther
Gray Bat
Humpback Whale
Indiana Bat
New England Cottontail
Northern Right Whale
Rafinesque's Big-eared Bat
Round-tailed Muskrat
West Indian Manatee

Birds

American Oystercatcher
Bachman's Sparrow
Bachman's Warbler
Bald Eagle
Bewick's Wren
Common Raven
Gull-billed Tern
Ivory-billed Woodpecker
Kirtland's Warbler
Least Tern
Red-cockaded Woodpecker
Peregrine Falcon
Piping Plover
Swallow-tailed Kite
Wilson's Plover
Wood Stork

Amphibians

Flatwoods Salamander
Georgia Blind Salamander
Green Salamander
Hellbender
One-toed Amphiuma
Pigeon Mountain Salamander
Striped Newt

Reptiles

Alabama Map Turtle
Alligator Snapping Turtle
Barbour's Map Turtle
Bog Turtle
Eastern Indigo Snake
Gopher Tortoise
Green Sea Turtle
Hawksbill Sea Turtle
Kemp's Ridley Sea Turtle
Leatherback Sea Turtle
Loggerhead Sea Turtle
Map Turtle
Spotted Turtle

CHOOSING A PRODUCT

How might I share the results of my question-asking and investigation? Choose from below.

map	puzzle	song	questionnaire
diagram	flag	model	dictionary
sculpture	scrapbook	time line	film/movie
discussion	graph	demonstration	collection
toy	debate	advertisement	poem
museum	diary	cooking	learning center
machine	mobile	computer program	book
trial	chart	news article	photographs
play	diorama	slide show	letters
product	award	art work	shadow box
dance	game	placemat	lesson
radio show	secret code	quiz show	cartoon
display	bulletin board	collage	filmstrip
family tree	costume	party/celebration	puppet show
statue	cassette	recipe	campaign
painting	terrarium	musical composition	debate
story	poster	training program	other:

EQUIPMENT AND MATERIALS

What equipment might I need to complete my investigation and product? List your needs.

tape recorder	headphones	film projector
overhead projector	computer	puppet stage
bookbinding machine	camera	laminator
filmstrip projector	record player	collator
video tape recording	other:	

Subject / Topic of Study: Science / Pond life

Grade Level: 5

Time Consideration: 60 minutes

Purpose / Objectives:

S.5.19 Identifies and describes the five major kingdoms (Plant, Animals, Fungi, Protists and Monerans). Names and describes basic characteristics and examples of each kingdom.

Materials / Resources Needed:

- Ponds and Streams by John Stidworthy
- Reflecting Pond
- Microscopes
- Small plastic containers to collect samples

Activities / Procedures:

1. Visit the Reflecting Pond in the Living Classroom.
2. Share with the students that the Web of Life, or ecology of a slow moving stream is similar to that of a pond. Many of the same animals can live in both places.
3. Discuss how plants and animals get food. Read pp. 6-7 in Ponds and Streams.
4. Discuss how animals protect themselves. Camouflage - Read pp. 8-9 in Ponds and Streams.
5. Identify five major kingdoms and living things in each kingdom.
6. Discuss microscopic water life (Fungi, Protists, Monerans)
 - Algae (tiny plants with no roots or leaves)
 - Amoeba (single-celled tiny pond animals)
 - Water flea (larger and more easily seen)
7. Have students collect water samples to view through microscope. See if they can identify pond life using Ponds and Streams as a reference (pp. 10-11).
8. Students should complete chart showing examples of living things from each of the five major kingdoms.

Evaluation / Assessment:

- 5 Major Kingdom Chart

Extension / Integration Ideas:

- Students may read Pond Life by Rena Kirkpatrick independently.

Subject / Topic of Study: Science - One celled animals

Grade Level: 5

Time Consideration: 30 - 40 minutes

Purpose / Objectives:

S.5.4 Actively engages in the learning process via hands-on/minds-on science activities and experiences. Uses appropriate tools to collect and analyze data and solve problems.

Materials / Resources Needed:

- High powered microscope
- Slides
- Eyedropper
- Pond water and plants
- Water scoop
- Container

Activities / Procedures:

1. Review cells and one-celled animals. Distribute "What to look for" sheets and read and discuss.
2. Visit the Living Classroom and collect samples of pond water and plants from the reflecting pond.
3. Place a piece of very thin moss on the slide. (The tangle of fibers tends to keep creatures stuck to them and confines the fast moving ones).
4. Pull the moss sample apart to open it up and put a drop of water on the moss.
5. Put on the cover slip (Keep the slide unclipped so as to move it around and search for animals). This can be done in pairs.
6. Repeat the process with a drop of pond water.

Evaluation / Assessment:

- Teacher observation

Extension / Integration Ideas:

- Write a descriptive poem.
 - Write a short story about pond life from the viewpoint of a one-celled animal.
-
-

Subject / Topic of Study: Shadow Measurement /Math and Science

Grade Level: 5

Time Considerations: 45 - 60 minutes

Purpose / Objectives:

- M 5.2 Uses mental computation strategies such as counting up, counting back, compensation, compatible numbers and multiples of ten, hundred, or thousand, with whole numbers, fractions, and decimals, including money.
- M 5.3 Uses estimation strategies (such as front-end, clustering, rounding, or reference point) to predict computational results of whole numbers, fractions, mixed numbers, and decimals.
- M 5.4 Adds, subtracts, and multiplies fractions and mixed numbers with like and unlike denominators, using vertical and horizontal presentation.
- M 5.8 Expresses an ordered pair of numbers as a ratio.
- M 5.9 Identifies and distinguishes among point, ray, line, line segment, and angle.
- M 5.13 Selects appropriate customary and metric units of measure for length (including perimeter and circumference), area, capacity/volume, weight/mass, time, and temperature.
- M 5. 14 Uses customary and metric units to measure length, capacity/volume (use liquid and dry units), weight/mass, elapsed time and temperature (include measuring length to nearest quarter inch, nearest millimeter and temperature below freezing).
- M 5. 23 Solves simple problems requiring recall of basic facts.
- M 5. 24 Identifies needed information and selects the steps necessary to solve multi-step word problems.
- M 5. 25 Solves one-, two-, and three-step word problems related to all appropriate fifth grade objectives including those presented orally and in writing; those in charts, tables, and graphs; and those with extraneous or insufficient information.
- M 5. 26 Selects and uses appropriate strategies for solving problems (e.g. look for a pattern, guess and check, make an organized list, simplify the problem, work backwards.)

M 5. 27 Predicts measurement by using strategies such as walking off and rough comparison.

S 5.1 Asks question, makes and keeps records of observations, classifies objects and events, communicates with others, makes inferences and predictions, uses estimation and measurement, uses evidence to construct explanations, makes sketches and diagrams to explain ideas, organizes data into tables and charts for interpretation, reads and interprets various types of graphs, formulates simple hypotheses, identifies and controls a limited number of variables and designs a simple experiment.

Materials / Resources Needed:

- Yardstick or ruler
- Tree
- Buildings or other tall objects to measure

Activities / Procedures:

1. Teacher will discuss the way that early settlers would measure the height of tall objects using "shadow measurements".
2. Settlers would measure objects in the morning or afternoon, when objects would cast a large shadow.
3. Settlers would take a long stick (called a rod) which they knew the length of (e.g. 3, 5, and 6 ft. rods were common). They would hold the rod upright and mark the length of the shadow that the rod cast. Next, they would measure the length of the cast shadow from base of rod to the top. This would set up a ratio (e.g., a 3 foot rod casts a 6 foot long shadow- shadow is twice as long as object, a 3 foot rod cast $4\frac{1}{2}$ foot long shadow, shadow is $1\frac{1}{2}$ times as long as object)
4. Next, they would measure the length of the cast shadow of a tree (for ex.) using the rod. If the ratio was 2:1 then height of tree could be quickly determined (tree shadow is 20 rods in length, shadow is twice as long as actual tree, so actual tree is 10 rods in height, rod = 3 ft so 10 rods x 3 ft. = 30 ft height of actual tree).
5. This method had several uses, such as measuring trunk lengths for log cabins. If the settler needed a 20 foot log for the wall of a cabin, he could measure a standing tree using this method. If an acceptable size log was only 18 ft long, the settler would see that it was too short, and not waste time and energy chopping the tree. It is difficult to measure the height of tall objects from the ground, as they appear to diminish in size at the top of the object (as it is much further from the ground-based viewer.) Settlers also used this method when felling trees around structures to assure that when a tree crashed to the ground it would not crash into homes or buildings. (To be effective, shadows must be measured at nearly the same time of day -of course if you measured the shadow at 2 p.m. it would be a different length at 6 p.m.).

6. Ask students to utilize this method to measure a tall object in the Living Classroom, such as a tree or the height of a structure.

Evaluation / Assessment:

- Quiz students using word problems to see if they can use this formula to determine heights of tall objects.

Extension / Integration Ideas:

- Convert height to yards, meters, inches, e.g.
- Pioneers used to measure trees, but this method can be used for measuring tall buildings, flagpoles, light poles, e.g.
- How did pioneers solve other problems of measurement in the old days, without modern measuring devices?

Subject / Topic of Study: Measurement

Grade Level: 5

Time Considerations: 2 class periods

Purpose / Objectives:

M 5.13 Selects appropriate customary and metric units of measure for length (including perimeter and circumference), area, capacity/volume, weight/mass, time, and temperature.

M 5.14 Uses customary and metric units to measure length, capacity/volume (use liquid and dry units), weight/mass, elapsed time and temperature (include measuring length to nearest quarter inch, nearest millimeter and temperature below freezing).

Materials / Resources Needed:

- 100' measuring tape
- Yard stick

Activities / Procedures:

1. Students will choose a partner. Together with their partner students will choose the appropriate unit of length to measure the distance of the nature trail in. They will then measure the trail.
2. Students should choose either feet or yards to measure in. Upon finding the distance around the trail, the pair of partners must then convert the distance from feet to yards (if they measured in feet) and vice-versa.

Evaluation / Assessment:

- Distance found and conversion to be handed in to be graded for accuracy.

Subject / Topic of Study: Writing for Purpose

Grade Level: 5

Time Considerations: 3 Class Periods

Purpose / Objectives:

- LA.5.9 Uses oral language for different purposes: to inform, to persuade, and to entertain.
- LA.5.44 Writes in a variety of genres to produce paragraphs and compositions:
- Personal narratives
 - Imaginative stories
 - Responses to literature
 - Content area pieces
 - Correspondence
 - Expository pieces
- LA.5.46 Communicates by using the writing process:
- Prewriting
 - Drafting
 - Revising
 - Editing
 - Publishing
- LA.5.51 Experiences traditional and contemporary literature through a variety of media.

Materials / Resources Needed:

- Early Farm Life by Lise Gunby
- Paper
- Pencils
- Chart paper

Activities / Procedures:

1. Teacher will make 5 copies of the letter on p.15 of Early Farm Life.
2. Students will break into small groups and each group will read the letter.
3. Students choose representative to write facts from letter onto chart paper, collecting suggestions from other members of their group.
4. Students will regroup as a whole and share facts.
5. Students will write an informational type letter to another family member as if they were in a similar situation.
6. Students will edit, revise and publish letter.

Evaluation / Assessment:

- Teacher observation
- Rubric check list (5 facts, greeting, etc.)

Extension / Integration Ideas:

- Students can keep daily diary
- Students can write about different feelings (e.g., angry because of a recent move, excited because of encountering different animals.)

Subject / Topic of Study: Creative Writing

Grade Level: 5

Time Considerations: 3 or 4 class periods

Purpose / Objectives:

Students will write a creative story about living on a homestead in the late 1700s or early 1800s. Students will write what their responsibilities would have been if they were the same age (10 or 11) on a homestead. Students will illustrate and publish their story.

LA.5.41 Writes legibly:

- correctly forms letters and numbers;
- correctly spaces words and sentences

LA.5.42 Writes selections of 3 or more paragraphs about a topic.

LA.5.44 Writes in a variety of genres to produce paragraphs and compositions:

- imaginative stories.

LA.5.45 Applies correct principles of grammar, parts of speech, and usage and mechanics.

LA.5.46 Communicates by using the writing process:

- prewriting
- drafting
- revising
- editing
- publishing

LA.5.47 Increases writing vocabulary

LA.5.48 Uses descriptive words and phrases

LA.5.49 Uses various organizational strategies, styles, and purposes.

LA.5.50 Uses available technology

Materials / Resources Needed:

- Living classroom (Homestead, apple orchard, well)
- clipboards
- paper
- pencils
- computer lab
- Student Writing Center (or similar software)
- Early Settler Activity Guide by Elizabeth Stenson
- The Early Family Home by Bobbie Kalman
- a guest speaker to discuss topic with and demonstrate (If possible) to students how life was on a pioneer homestead
- Students will provide materials to illustrate their book

Activities / Procedures:

1. Research any information you may need, other than what is found in the Early Settler Activity Guide and The Early Family Home.
2. Teacher and students will go to the Living Classroom homestead, with clipboards, pencil and paper.
3. Discuss the way pioneers and homesteaders lived, especially the roles of children at that time.

Boy's responsibilities

Boy's responsibilities might have included any or all of the following: milking cows, removing stumps, rocks, and other debris from fields to prepare for plowing fields, planting, watering, harvesting, caring for farm animals, storing grain or crops for winter and for feed, cutting down and removing trees to clear a space to build a home and barn, building a home and barn, digging wells, hunting and dressing game for food and tanning the hides for use as covers or clothing, etc.

Girl's responsibilities

Girl's responsibilities might have included any or all of the following: milking cows, making clothes, weaving cloth, making candles, cooking, cleaning, making household items (rugs, cushions, rags, etc.), maintaining a vegetable and herb garden (including planting, weeding and harvesting), canning or drying vegetables and herbs for use in the winter, taking care of younger siblings, making bread, gathering eggs, feeding chickens and other farm animals, getting water, etc.

4. Students will take notes during this time to use in their creative writing assignment.
5. Students will produce an illustrated story (1st person) about life as a child on a homestead.

Evaluation / Assessment:

• Students will produce an illustrated creative story in first person about what their life would have been like as a child on a homestead. This can be evaluated by teacher observation, a Rubrick's model (or a similar checklist type of evaluation), or count as a test grade.

Extension / Integration Ideas:

- Discuss other aspects of a homesteader's life in depth (ex. providing food, shelter and clothing, protection from animals and enemies, bartering, etc.)
- Have students keep a "diary" of their life as a homesteader's child.

Subject / Topic of Study: Creative Writing

Grade Level: 5

Time Considerations: 3 or 4 class periods

Purpose / Objectives:

Students will compare/contrast student life during pioneering days and the school they attend. Students will publish and present their essay to the class, along with a visual presentation.

LA.5.31 Draws conclusions, makes predictions, compares/contrasts, and makes generalizations.

LA.5.41 Writes legibly:
•correctly forms letters and numbers;
•correctly spaces words and sentences.

LA.5.42 Writes selections of 3 or more paragraphs about a topic.

LA.5.44 Writes in a variety of genres to produce paragraphs and compositions.

LA.5.45 Applies correct principles of grammar, parts of speech, and usage and mechanics.

LA.5.46 Communicates by using the writing process:
•prewriting
•drafting
•revising
•editing
•publishing

LA.5.47 Increases writing vocabulary.

LA.5.48 Uses descriptive words and phrases.

LA.5.49 Uses various organizational strategies, styles, and purposes.

LA.5.50 Uses available technology.

Materials / Resources Needed:

- Living Classroom Schoolhouse
 - Paper
 - Computer lab
 - "Student Writing Center" (or similar software for student publishing)
 - Early Settler Activity Guide by Elizabeth Stenson
 - Early Schools by Bobbie Kalman
 - a guest speaker to discuss topic with and demonstrate (if possible) to students how students learned in early schools
 - Students will provide materials to illustrate their book.
- Clipboards
 - Pencils

Activities / Procedures:

1. Research any information you may need, other than what is found in the Early Settler Activity Guide and Early Schools.
2. Teacher and students will go to the Living Classroom Schoolhouse, with clipboards, pencil and paper.
3. Guest speaker or teacher will present and demonstrate, when possible, how students learned in early schools (recitation, rote memorization, lecture, etc.)
4. Have students do research about types of schools during the era of settlers and pioneers.
5. Students will write an essay (3 point paragraph) comparing/contrasting early schools and the school they attend.
6. Students will produce a visual project depicting the comparisons/contrasts in their essay (e.g. posters, dioramas, drawings, etc.)
7. Students will present their essay and visual project to the class.

Evaluation/ Assessment:

- Students may be evaluated on participation, presentation of project, teacher observation, a Rubrick's model (or a similar checklist type of evaluation), or the project may count as a test grade.

Extension / Integration Ideas:

- Compare/Contrast other aspects of settler's lives to life today.

Subject / Topic of Study: Language Arts/Science

Grade Level: 5

Time Considerations: 6-10 class periods

Purpose / Objectives:

LA.5.5 Delivers a planned oral presentation.

LA.5.64 Uses research process by: choosing topic, formulating questions, identifying keywords, selecting sources, skimming, paraphrasing, taking notes, organizing, and presenting.

S.5.2 Uses encyclopedias, science reference magazines, books, and other media to obtain information related to science concepts.

Materials / Resources Needed:

- Resource materials from school library and Living Classroom resource room

Activities / Procedures:

1. After visiting the Living Classroom and making a written list of three shrub types, students will choose a species to research and report on.
2. Students will write a report with at least one illustration, a visual representation, and deliver an oral presentation.
3. Give students a definite date for completing rough draft, turning in written report, and oral presentation.

Evaluation / Assessment:

- Finished report

Extension / Integration Ideas:

- Have student keep a log book.
- Use backboards for a classroom science fair (including sending invitations, scheduling classes) and begin at one's booth to answer questions.
- Lead in to forestry (materials attached)
- Guest speakers: contact the Georgia Forestry Commission

Subject / Topic of Study: Science/ Circulation System

Grade Level: 5

Time Considerations: 1- 2 class periods

Purpose / Objectives:

S 5. 22 Identifies major body systems and their functions.

LA 5.9 Uses oral language for different purposes; to inform, persuade, and entertain.

Materials / Resources Needed:

- Student packet- "Our Heart and How it Works"
- Model of heart
- Large amount of their rope or yarn
- Bibliography

Activities / Procedures:

1. Students brainstorm anything associated with a human heart. After 3 minutes, share responses and record on chart paper. Circle the parts of the heart, if listed.
2. Write a separate list of parts of the heart- Right Atrium, Left Atrium, Right Ventricle, Left Ventricle, Pulmonary Artery, Pulmonary Vein, Aorta, Tricuspid Valve, Pulmonary Valve, Mitral Valve, Aortic Valve. (Make sure the brainstorming chart includes blood and pump.)
3. Review blood and its parts (plasma, platelets, red blood cells, white blood cells.)
4. Hand out student packets, read through first page. Have students read over 2nd page (circulatory system chart) individually.
5. Discuss how systems and body parts work together- draw analogies. 3rd page (Circulatory System Analogical Guide). Read through and discuss.
6. Divide into 10 groups or pairs, and have each group illustrate a different paragraph on plain chart paper. Display illustrations while reading the poem aloud.
7. Go outside in an open area on the school grounds, mark off an outline of a heart (as shown in illustration on last page). Assign half of the students to be blood, with 2 or 3 being oxygen. Students "travel" through the heart diagram while other half sings "Walk Through the Heart."

(Background Information: Blood is circulated all around your body through a system of blood vessels. At the center of the blood system is your heart-pumping constantly day and night. Arteries carry blood from your heart to all parts of your body. Veins bring blood from which oxygen has been removed back to your heart. Blood carries oxygen from the lungs and food from the intestines to the cells, and picks up carbon dioxide and other waste materials from the cells.

Evaluation / Assessment:

- Teacher observation
- Label heart diagram and write a brief explanation of heart function

Extension / Integration Ideas:

- Make an acrostic out of the word HEART in phrases, based on biological knowledge.
- Guest speaker- Red Cross nurse, doctor, pulmonary doctor or nurse.
- Student groups research and present self-chosen circulatory sub-topic.
- Take resting and post exercise pulse rates.

Subject / Topic of Study: Science - Animal Protective Adaptations

Grade Level: 5

Time Considerations: 2 class periods

Purpose / Objectives:

LA.5.7 Paraphrases and discusses information.

LA.5.8 Summarizes and/or records orally presented information.

LA.5.11 Increases vocabulary to reflect a growing range of interests and knowledge.

LA.5.49 Uses various organizational strategies, styles, and purposes.

S.5.1 Asks questions, makes and keeps records of observations, classifies objects and events, communicates with others, makes inferences and predictions, uses estimation and measurements, uses evidence to construct explanations, makes sketches and diagrams to explain ideas, organizes data into tables and charts for interpretation, reads and interprets various types of graphs, formulates simple hypotheses, identifies and controls a limited number of variables, and designs a simple experiment.

S.5.17 Compares different kinds of animals and their protective adaptations. Identifies examples of animals with protective adaptations in color, physical structure and body markings and shadings, such as zebras, giraffes, Viceroy butterflies and deer.

Materials / Resources Needed:

- Encyclopedias
- Atlases
- Almanacs
- Computers
- Paper
- Pencils
- Class map
- Poster board

Activities / Procedures:

1. Students will predict animal population common to our area. Students will visit Wildlife Sanctuary and witness animals present around Kingston Elementary. Students will research to prove/disprove predictions. Students will create a chart, with the United States and another country. Students will make a heading for each country, and then list animals common to each. They can do more research if needed. Students will compare habitats, predators, and prey of both countries. They will list protective adaptations of various animals and create posters to compare.

Evaluation / Assessment:

- Student Posters
- Teacher Evaluation / Observation

Subject / Topic of Study: Matter / Major Kingdoms

Grade Level: 5

Time Considerations: 7 to 10 days

Purpose / Objectives:

- S.5.8 Differentiates between and describes physical and chemical changes in matter. Identifies and demonstrates examples of physical and chemical changes.
- S.5.19 Identifies and describes the five major kingdoms (Plants, Animals, Fungi, Protists, and Monerans). Names and describes basic characteristics and examples of each kingdom.
- S.5.26 Recognizes changes that occur on the Earth's surface as a result of erosion and deposition. Describes examples of erosion and describes examples of deposition.
- S.5.28 Recognizes that changes that occur on the Earth's surface (earthquakes, volcanoes, and erosion) are a result of forces acting upon it. Describes examples of changes in the environment that are the result of wind and water forces. Describes how the movement of molten rock affects features such as faults and volcanoes.
- LA.5.11 Increases vocabulary to reflect a growing range of interests and knowledge.
- LA.5.31 Draws conclusions, makes predictions, compares/contrasts, and makes generalizations.

Materials / Resources Needed:

- Clipboards
- Sheets with Major Kingdoms listed
- Chart paper
- Poster Board
- Pencils
- Wildlife Trail
- Compost Pile
- Wildlife Sanctuary
- Wetlands site

needed
Amazing
Arizona
Worksheet

Activities / Procedures:

1. Students will create a class definition of matter after teacher gives several examples of what is and isn't matter. Teachers will write definition on poster board.
2. Students will research 5 major kingdoms in encyclopedia, science book, computer, etc.
3. Divide students into groups of 3-5 persons. Each group will receive a clipboard and sheet with the following headings:
 - Animals
 - Plants
 - Fungi
 - Protists
 - Monerans
4. Take students on teacher-directed walk to Wildlife Trail, Compost Pile, Wetlands Site, and Wildlife Sanctuary. Students record examples of each kingdom.
5. Upon returning to classroom, divide the class back into the same groups. Each group chooses one representative to go to other groups and report/compare their findings. The students then all come back together as one group.
6. Students compare the effect the kingdoms have on each other, and the effect land and rain have on the kingdoms.
7. Teacher will write effects on board. Students will circle physical changes and check off chemical changes.
8. Students will decide if small scale changes (e.g. erosion) or large scale changes (e.g. earthquakes) have better/worse effect on kingdom.

Evaluation / Assessment:

- Teacher observation
- Student recording sheets

Extension / Integration Ideas:

- Students can look at kingdom examples under microscope.
-
-

Subject / Topic of Study: Science

Grade Level: 5

Time Considerations: 2-3 class periods

Purpose / Objectives:

S.5.17 Compares different kinds of animals and their protective adaptations.
Identifies examples of animals with protective adaptations....

S.5.18 Compares similarities and differences in animals....

LA.5.23 Demonstrates an understanding of semantic relationships by using context clues, word meanings, and prior knowledge in reading.

Materials / Resources Needed:

- "Amazing Arizona Animals" worksheet
- Clipboard
- Paper
- Pencil
- Resource materials
- Butterfly Garden
- Living Classroom

Activities / Procedures:

1. Students read and complete "Amazing Arizona Animals" worksheet (this may be done in pairs) using context clues to determine the answer. After 4 or 5 minutes, read and discuss description and answers.
2. Walk through the Butterfly Garden and the Living Classroom. students will write the names of the different animals that exist in these North Georgia ecosystems. Be sure to include mammals, insects, birds, amphibians and reptiles, and remember the animals they don't see, but that do exist here.
3. Back in the classroom, students choose 8 animals from their list to research and describe. Create a worksheet based on the "Amazing Arizona Animals" worksheet, with the descriptions and protective adaptations of each animal. Be sure to make an answer key.
4. Students (or student pairs) swap work sheets, answer, and return to creator for checking.

Evaluation / Assessment:

- Teacher observation
- Completed project

Extension / Integration Ideas:

- Use native plants instead of animals.
- Design a game- either movement or board game - with native animal facts and descriptions.

Source:

- Kids Book of the 50 Great States, Scholastic, Inc.

Subject / Topic of Study: Soil types

Grade Level: 5

Time Considerations: 45-50 minutes

Purpose / Objectives:

- S.5.1 Asks questions, makes and keeps records of observations, classifies objects and events, communicates with others, makes inferences and predictions, uses estimation and measurement, uses evidence to construct explanations, makes sketches and diagrams to explain ideas, organizes data into tables and charts for interpret, reads and interprets various types of graphs, formulates simple hypotheses, identifies and controls a limited number of variables, and designs a simple experiment.
- S.5.4 Actively engages in the learning process via hands-on/minds-on science activities and experiences. Uses appropriate tools to collect and analyze data and solve problems.
- S.5.8 Differentiates between and describes physical and chemical changes in matter. Identifies and demonstrates examples of physical and chemical changes.
- S.5.25 Discusses temperature change, chemical action and living things as important factors in the splitting and breaking down of rocks. Observes rock crevices where ice may form and act as a wedge to split rock. Observes action of vinegar on different types of rocks and observes plant roots in rock crevices.
- S.5.26 Recognizes changes that occur on the Earth's surface as a result of erosion and deposition.
- S.5.28 Recognizes that changes that occur on the Earth's surface (earthquakes, volcanoes and erosion) are a result of forces acting upon it. Describes examples of changes in the environment that are the result of wind and water forces. Describes how the movement of molten rock affects features such as faults and volcanoes.
- S.5.29 Recognizes that technology helps control land and water forces. Locates examples showing how technology such as dams and contour plowing helps to control land and water forces.

Materials / Resources Needed:

- Various types of soil found in the Living Classroom.
- Small digging tools.
- Containers for soil samples.

Activities / Procedures:

1. Students will learn the manner in which soils effect and are affected by their environment.
2. Students will obtain samples of various different soils from different areas of the Living Classroom. Allow 20-30 minutes for soil collection. Students should note on paper or envelope where each soil sample was located.
3. Students will discuss their soil samples and the location where they were found.
Examples:
Clay soil: comes from around the pond and sinkhole area. Clay is formed by broken bits of rock deposited in most cases by water into a low swampy area. Clay usually holds and slows the escape of ground water.
Forest floor soil: comes from heavily wooded area. This soil is rich in organic material called humus, which forms when leaves, wood, and animals decompose or are broken down by bacteria, insects, fire and fungus. Forest soil can have a thick layer of humus, which helps retain moisture for plants.
Sandy soil: comes from the area near the Pioneer Homestead and well. This soil does not contain as much humus, because it has been cleared of most trees. Therefore, not as much leaf and wood debris has decomposed into this soil.
Rocky soil: comes from the sides of rock walls, the area above the logging road, and the area near the blacktop road. This soil has large rocks which have not been completely broken down into the small pieces that make up rich top soil. Over thousands of years these rocks will weather and be broken down further by wind, water, plant roots, and chemical decomposition to form more mature soils.
4. Students should be able to view certain environmental settings, and make and educated guess about the type of soil in that setting, as well as identify the reasons certain types of soil developed in certain locations (e.g. deserts, mountain tops, river deltas, and flood plains).

Evaluation / Assessment:

- Students will view and classify various types of soil.
- Students will view certain environments (swamp, forest, farm field) and correctly predict the types of soil located in that area.

Extension / Integration Ideas:

- Students may rank soils according to richness or fertility.
- Students may rank soils according to age (rocky soil is "young" soil, and fine topsoil is "Mature" soil.
- Students may discuss which soil type is better for agriculture, which soils hold moisture best, etc.
- Students may discuss ways that man and nature can destroy soil.

Subject / Topic of Study: Science/Rocks/ Geology

Grade Level: 5

Time Considerations: 2 one hour periods

Purpose / Objectives:

S 5.25 Discuss temperature change, chemical action, and living things as important factors in the splitting and breaking down of rocks.

Materials / Resources Needed:

- Maps of the school grounds
- Rock collection guidebooks
- Rock poster
- Glass beaker
- Small balloon
- Baking soda
- Vinegar
- Cups
- Water
- Teaspoon
- Skill sheets

Activities / Procedures:

Day One

1. Divide students into groups of 4. Give each group a map of the entire school grounds. Each group goes to a specific site as indicated on their map. Each group member is to find a different type of rock: size, color, form, etc. This activity should take about 5 minutes.

2. Students return to the classroom to look up their rocks in the guide. They should take notes about each rock's physical appearance and location on the school grounds (i.e. N.W. section of trees, etc.) While students analyze their rocks, display the rock chart and remind them or have them recall:

•*Solid colored rocks* are made of the same minerals like limestone, or sulfur, and were formed very slowly and were not stirred or mixed during their formation.

•*Striped rocks* may have been formed by more than one mineral in layers over a period of time.

•*Mixed colored rocks*, like granite, may contain several minerals and were formed under great heat and pressure as they were mixed by giant forces.

•*Igneous* means made with fire. Igneous rocks were formed from hot, molten matter that has now cooled.

•*Sedimentary rock*- means settle to the bottom. These rocks were made of mud, sand, and gravel, often hardened under great pressure.

needed
map of
school grounds
skill sheets
Rock collection
guidebooks

•*Metamorphic rock*- means changed form. These rocks have been changed by heat, pressure, and water from one kind of rock to another.

Day Two

1. Ask: How do you measure the hardness of a rock? You might want one of the groups to research this. Explain that in their rock guides is a "Mohs scale" listing the softest to hardest classification.
2. Ask what is meant by chemical action? Procedure: Add one tsp of baking soda to ½ cup of water and stir until dissolved. Pour solution into clean beaker. Pour 2 tsp vinegar into the small balloon. Fasten the end of the balloon over the mouth of the pop bottle. Raise the end of the balloon and allow the vinegar to enter the bottle. What happens? Repeat the experiment and vary the amounts of soda and vinegar. Was there any change in the chemical reactions?

**Note: Vinegar (acid) reacts with baking soda (base) to form a gas called carbon dioxide and salts. This same chemical action takes place between acid formed by leaf decomposition and rocks buried under the soil. Carbon dioxide gas is given off in small amounts and is absorbed by water to form carbonic acid. This carbonic acid is carried still deeper within the rocky soil where it's chemical action continues to break down the rock. This chemical action may make it possible for water to seep into the rock. If this water should freeze, the rock will be broken down still further. Salts called minerals are also formed, which helps enrich our soil.*

Evaluation / Assessment:

•Observation, skill sheets (attached), completion of research paper or book report.

Extension / Integration Ideas:

- Skill sheets
- Research projects on rock types, geographic locations, etc.
- Individual rock collections
- Invite a local geologist to talk about rocks and minerals in our area
- Field trip to Weinman mineral museum - Cartersville
- Utilize school references (books, video tapes, etc.-attached)
- "Science Made Simple" unit - Mailbox 1994, gr. 4-6 (attached)

Subject / Topic of Study: Math / Geometry

Grade Level: 5

Time Considerations: 45-60 minutes

Purpose / Objectives:

M.5.9 Identifies and distinguishes among point, ray, line, line segments, and angle.

M.5.10 Determines line of symmetry and identifies geometric relations.

Materials / Resources Needed:

- Geo-folder (manila folder or 3 prong folder)
- Paper
- Pencil
- Scavenger hunt list
- Clipboard

Activities / Procedures:

1. Provide students with a copy of folder cover art/geometry word list.
2. Have students highlight the words they've been working on.
3. Students go out on campus and locate and describe as many of the geo-shapes as they can. (30 minute time limit)
4. Share findings in the classroom, keep a list in the geo-folder.

Evaluation / Assessment:

- Teacher observation
- Completed project

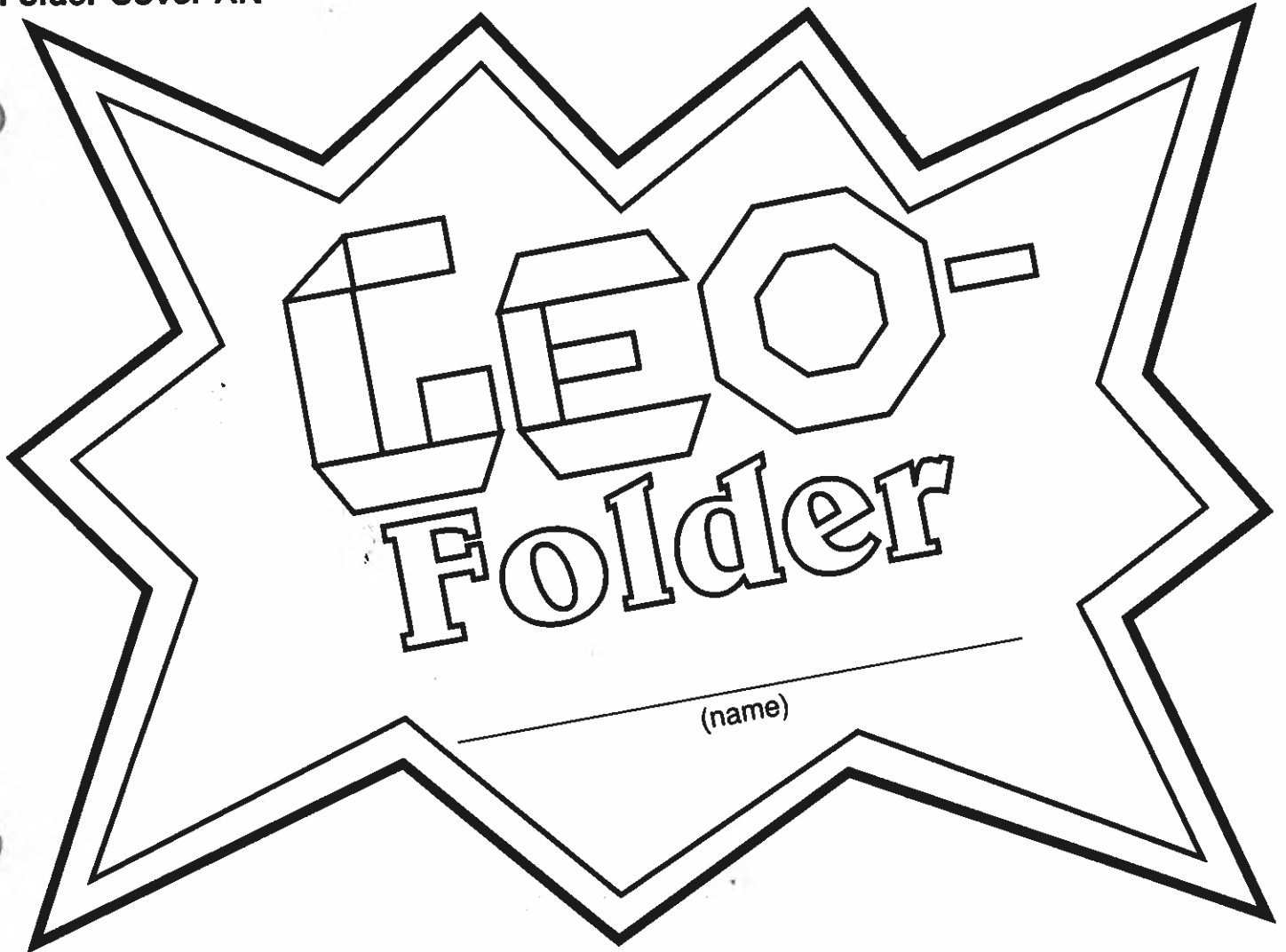
Extension / Integration Ideas:

- Give a teacher prepared scavenger hunt list
- Have $\frac{1}{2}$ of class create scavenger hunt list for other $\frac{1}{2}$ of class
- Focus on the following directions and geometric concepts:
 - Draw a circle
 - Draw a vertical diameter through the circle
 - Draw a radius in the right semi-circle that is horizontal
 - Draw a chord that crosses the horizontal radius

Source:

Mailbox, Education Center, Inc., April/May, 1998.

Folder Cover Art



Geometry Word List

Geo-Words

<ul style="list-style-type: none"> • three-dimensional • space figure • plane figure • plane • point • line • line segment • ray • angle • right angle • acute angle • obtuse angle 	<ul style="list-style-type: none"> • straight angle • line of symmetry • symmetric figure • congruent figures • perimeter • area • volume • horizontal • edge • face • vertex (corner) • vertical 	<ul style="list-style-type: none"> • diagonal • intersecting lines • perpendicular lines • parallel lines • polygon • quadrilateral • square • rectangle • trapezoid • parallelogram • rhombus • triangle 	<ul style="list-style-type: none"> • right triangle • scalene triangle • isosceles triangle • equilateral triangle • acute triangle • obtuse triangle • circle • radius • diameter • circumference • arc • chord 	<ul style="list-style-type: none"> • pentagon • hexagon • octagon • cube • prism • pyramid • cone • cylinder • sphere • slide • turn • flip
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Subject / Topic of Study: Measurement

Grade Level: 5

Time Considerations: 3 Class periods

Purpose / Objectives:

M.5.13 Selects appropriate customary units of measure for length (including perimeter and circumference), area, capacity/volume, weight/mass, time and temperature.

M.5.14 Uses customary and metric units to measure length, capacity/volume (use liquid and dry units), weight/mass, elapsed time and temperature (include measuring length to nearest quarter inch, nearest millimeter and temperature below freezing).

M.5.27 Predicts measurement by using strategies such as walking off and rough comparison.

M.5.33 Collects and organizes data into tallies, charts, and tables; determines appropriate scale and constructs bar graphs and pictographs.

Materials / Resources Needed:

•clipboards	•ruler	•nails	•paint
•paper	•tape measure	•cardboard	•brushes
•pencil	•thermometer	•tape	•compass
•scale	•cups	•yardstick	•wood
•marker			

Activities / Procedures:

1. Students will observe Living Classroom. They will create a topographical map and note which direction structures are facing. (Teacher will lend compass when requested.)
2. Students decide which measurements should be displayed and where (e.g. 5 ft. to compost pile, etc.). They will decide if recordings will be temporary or permanent (e.g. 94°F at wildlife refuge).
3. Students return to class to put final revisions, legends, color on maps.
4. In groups, students will construct signs from cardboard or wood. Signs will have predetermined dimensions for students to follow.
5. When students return to post signs, the teacher will double-check measurements with yard stick, thermometer, etc.

6. Teacher passes out cups for students to gather dirt, plant life, water, etc. When students return to the classroom, they will measure contents with appropriate tool and record in science log.

Evaluation / Assessment:

- Science logs
- Teacher measurement and observation

Extension / Integration Ideas:

- Students can make signs to label plant life, etc.
- Students can use ratio to create a proportional map.