

INTRODUCTION TO NATURAL RESOURCES

What Are Natural Resources?

A good working definition of Natural Resources requires defining the two words, natural and resources, separately and combining those definitions. “Natural” can be defined as something present or produced, in nature. “Resource” can be defined as that which is useful and for which there is an available supply. By combining these two definitions, “natural resources” can be defined as something present in, or produced by, nature with an available supply that can be drawn upon when needed. Natural resources also can be categorized as earth materials and as all life forms. Those natural resources include air, water, soils, natural vegetation, and all rocks and minerals.

Who Uses Natural Resources?

People use natural resources. Every aspect of life requires that we use natural resources. When one gets up in the morning and eats breakfast, one is using natural resources. The electricity that turned on the lights, the water in the shower, and the food that is on the table came from natural resources. All day long we use natural resources. Sometimes they are used in other ways, such as enjoying one’s surroundings by visiting a state or national park or forest.

Alabama’s Natural Resources

Alabama is fortunate in that it has an abundance of many natural resources. Farmers use the soil to produce many products, such as cotton, potatoes, tomatoes, and peanuts. On some areas of land, trees are grown to produce wood to build houses and to make paper for many purposes. In recent years, oil (a product that we use every day) has been found, and drilled, for in Mobile Bay. Across the state, people use water to produce electricity (hydroelectric dams) and to fish for food and sport. As one can see, Alabama has an abundance of natural resources, BUT we must manage them correctly so that they will last for generations to come.

Conserving Our Natural Resources for Future Generations

It is important for Alabamians to pay close attention to the ways they manage natural resources. There are many public and private organizations that work to assure that our natural resources are adequately maintained, but, in the end, it is up to the individual citizen to do his or her part. Whether it is by picking up trash, recycling, planting trees, or volunteering with an environmental organization, everyone makes a difference, and everyone must help to insure that generations to come have the necessary natural resources.

OBJECTIVES:

The student will be able to:

1. Describe the life and contributions of Johnny Appleseed.
2. Discuss the difference in factual or fictional information.
3. Discuss the benefits of trees to the environment.
4. Identify the locations of the states of Pennsylvania, Ohio, and Indiana.
5. Put in sequential order the growth stages of a tree.

BACKGROUND:

Johnny Appleseed was born John Chapman in 1774 in Leominster, Massachusetts. When he was 23 years old, he traveled west to plant his famous apple seeds in Pennsylvania, Ohio, and northern Indiana. Apples were very important to the wilderness settlements of early America, as they were one of the few crops that could be grown and harvested easily and eaten in one form or another all year round. People have been telling Johnny Appleseed stories for almost 200 years, so it is sometimes hard to separate the real history of his life from the legends. Johnny Appleseed died in Fort Wayne, Indiana, in March 1845. Johnny Appleseed Day is September 26.

VOCABULARY:

seed - a small structure from which a plant or tree grows

fact - something known to be true

fiction - something made up or imaginary

ADVANCE PREPARATION:

Draw identical trees on four separate large pieces of drawing paper.

PROCEDURE:

Setting the Stage

Read *Johnny Appleseed* by Reeve Lindbergh or any book about Johnny Appleseed.

Activities

1. After reading about *Johnny Appleseed*, discuss with the students the great contribution John Chapman made to our country by planting apple trees on the American frontier. Point out that planting a tree today is a way we can help the environment.
2. Using a map or globe, trace Johnny Appleseed's travels across the American frontier.
3. Discuss the difference between the factual and fictional part of Johnny Appleseed's life. Let the students explain why they think an event in Johnny Appleseed's life was fictional or factual.
4. Show pictures (included) of the different stages of tree growth (beginning with the seed, seedling). Have the students put the pictures in sequential order. Have them write or dictate sentences about each stage of the growth of a tree.
5. Have the students put on a play about being pioneers or explorers and finding one of Johnny Appleseed's apple trees.

Grades:

K-2

Subjects:

Science, Language Arts, Social Studies, Art, Music

Time Needed:

two 30 minute periods

Materials:

Johnny Appleseed by Reeve Lindbergh
four large tree pictures
green, yellow, red, orange, pink, and
white paints
cottonballs or fiber fill
crayons
pencils
pictures of the growth stages of an
apple tree
three to four sweet apples
knife
sauce pan
a half cup of water
half tsp. cinnamon

6. Discuss the different ways we use apples (applesauce, baked, raw, in pies).
7. Graph or tally students' favorite ways to eat apples.

Follow-Up

Prepare applesauce.

Quarter, core, and peel three to four sweet apples. Cut the quarter pieces in half and put them in a sauce pan. Add 1/2 cup water, sprinkle on 1/2 teaspoon cinnamon, and simmer covered until the apples are tender (about 20 minutes). Let apples cool. Have the students mash the cooked apples with a potato masher or whirl them in a blender. Cool and eat. Makes six servings.

EXTENSIONS:

1. Divide the students into four groups - Fall, Winter, Spring, Summer. Give each group a very large drawing of a tree. The Fall group will put leaves on their trees by making hand prints with red, yellow, and orange paint. After the paint dries, let the students draw ripened red or yellow apples on the fall apple tree. The Winter group will use cottonballs or fiber fill to put snow on the winter tree's branches. The Spring group will use pink and white paint to make apple blossoms on their spring tree. The Summer group will use green paint to make green hand prints to resemble green leaves on a summer apple tree. After the green paint dries, let the students draw unripened small green apples on a summer apple tree.
2. Song

Do You Know the Apple Man? (Tune: Do You Know the Muffin Man?)

Oh, do you know the Apple Man
The Apple Man,
The Apple Man,
Oh, do you know the Apple Man
Johnny Appleseed!

3. Finger play

High up in the apple tree
Two little apples smiled at me.
I shook that tree
As hard as I could;
Down came the apples
They were good!

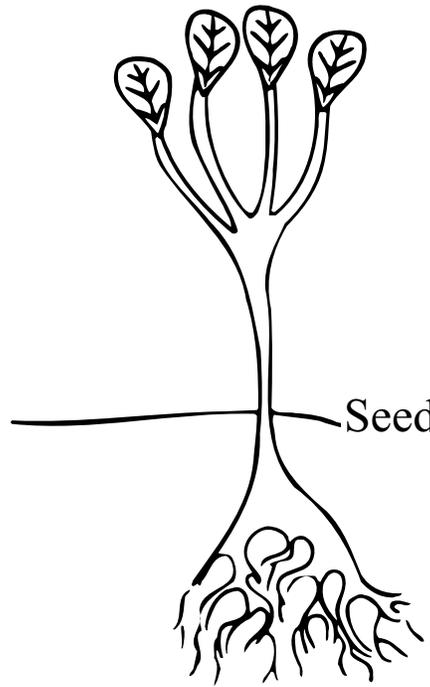
4. You may want to bring in some modern-day friends of trees. Contact the National Arbor Foundation and American Forestry Association in Washington, D.C. (See Resources.)

ORIGINAL DEVELOPMENT RESOURCES:

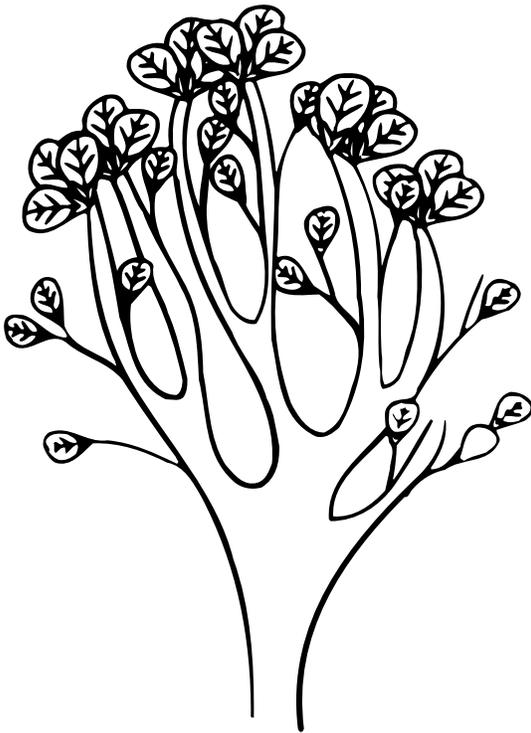
Lindbergh, R. (1990). *Johnny appleseed*. New York, NY: Little, Brown and Company.



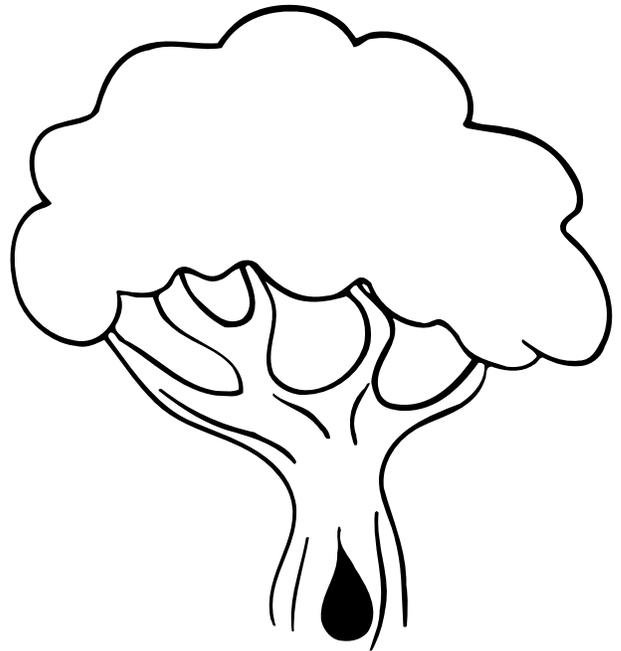
Seed



Seedling



Young Tree



Mature Tree

Notes

OBJECTIVE:

The student will be able to:

1. Describe the various characteristics of soil, including color and texture.

BACKGROUND:

Soil covers the surface of the Earth. Soil is made from eroded rock and mineral particles that have been mixed with plant and animal matter. Soil may have different textures and colors due to factors such as the amount and kinds of minerals and decayed matter in the soil.

VOCABULARY:

soil - part of our environment and Earth surface that is made up of mineral materials from rocks, partially decayed materials, and living organisms.

ADVANCE PREPARATION:

Gather materials for the activity.

PROCEDURE:

Setting the Stage

Introduce the lesson by chanting the poem "Dirt" by Mary Ann Jenkins.

Dirt

I like dirt
Itty, bitty, gritty dirt.
I like dirt
Fuddy, duddy, muddy dirt.
I like dirt
In my socks or on my shirt.
I like dirt.

Activities

1. Ask the students to describe the dirt they might find in the school yard. Lead the students on a walk in the school yard. Collect dirt from different areas of the yard in clear plastic cups. Gather dirt from under vegetation, along the road or parking lot, in the playground. Dig a hole with the shovel to gather dirt from underground.
2. Lead the students in comparing the colors and textures of the dirt. Pour the dirt of different colors in layers in the clear plastic jar. Display the jar of dirt in the classroom.
3. Allow the students to bring samples of dirt from their own yards. Encourage them to try to find different colors and textures of dirt. On the following day, compare these samples. Ask the students if dirt from a river bank would be different in color and texture from their samples. Provide a sample of dirt from the edge of a river for the students to examine and compare.
4. Graph dirt samples by color and texture.

Grades:

K-2

Subject:

Science

Time Needed:

First day: 40 minutes

Second day: 20 minutes

Materials:

towel

clear plastic cups

clear plastic jar

sample of river bank soil

5. Discuss with students the type of soil that is best for growing plants (dark soil with a lot of decayed material). Ask students why this is the best kind of soil for growing plants (more nutrients for the plants). Also discuss what kind of soil students think would be best to build houses on. Ask them to give their reasons.

Follow-Up

Have students divide into cooperative groups and write a list of describing words for each sample collected. Make sure students identify where each soil sample came from.

EXTENSIONS:

1. Draw a design on cardboard. Spread glue. Then sprinkle dirt of different colors to create a “dirt picture.”
2. Grind dirt into a powder-like form. Alternate layers of dirt types in a small glass or plastic bottle to make dirt patterns similar to colored sand art.

ORIGINAL DEVELOPMENT RESOURCES:

U.S. Department of Agriculture Soil Conservation Service. (1992). *Teaching soil and water conservation*. More info found at: <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/newsroom/features/>

Surface Erosion: A Grass Roots Solution

OBJECTIVE:

The student will be able to:
Determine how the presence of vegetation affects surface soil erosion.

BACKGROUND:

Surface erosion is the loss of important nutrients that support life. Water causes erosion that reduces the natural usefulness and productivity of the soil. Today's accelerated erosion is due to a conflict between humans and their environment. In our rapidly changing society, there is a large demand for new home sites, new recreation areas, and new shopping areas. Construction of this nature contributes to erosion. Often these new structures are located on what was prime farm land. Thus many farms are now located on less desirable land, some of which is more prone to erosion from various sources. The erosion rates depend primarily on four interacting factors:

- Type and amount of rainfall
- Length and steepness of the slope
- The erodability of soil
- The management of the land

Land areas covered by vegetation are not easily eroded by rain water or runoff because the plant roots help hold the soil in place. The effectiveness of ground cover depends on many factors such as:

- The percentage of ground cover
- The density and height of vegetation
- The capacity of plants to intercept water
- The amount of mulch on the soil surface
- The surface slope

Water flows slowly over a gentle slope and rapidly over a steep one. The energy of the flowing water increases with speed. The faster the water moves, the more energy it has to dislodge and transport soil particles. Because the slope of the land cannot easily be changed, controlling erosion involves taking measures to slow the movement of water including avoiding use of steep slopes for farming. Ways of limiting surface erosion due to slope and elevation of the land include terracing and planting crops on the contour. These methods help to ensure that water will soak into the soil and not run down the slope carrying nutrients and soil. The erosion process is responsible for polluting rivers and lakes and filling up lakes and reservoirs with soil particles.

VOCABULARY:

ground cover - plants that cover the surface of the Earth

mulch - protective ground cover, including manure, wood chips, straw, seaweed, leaves, and other natural products, or synthetic materials, such as heavy paper or plastic, that protect the soil, save water, and prevent weed growth

slope - angled rise or descent of the Earth's surface

soil - part of our environment and Earth's surface that is made up of mineral materials from rocks, partially decayed materials, and living organisms

Grades:

K-2

Subject:

Science

Time Needed:

60 minutes (Note: Some advance preparation is needed two weeks before the activity.)

Materials:

soil
grass seeds
two notched wooden rectangular containers
two watering cans with water

surface erosion - wearing away of Earth's surface by wind or water

vegetation - all the plants or plant life of a place

ADVANCE PREPARATION:

Gather soil from the school grounds. Prepare one vegetation sample tray by planting grass seeds two weeks before date of experiment. If you do not have wooden trays, line a sturdy cardboard box with plastic and notch at the end.

PROCEDURE:

Activities

1. Allow students the opportunity to investigate several soil samples. Have a magnifying glass available. Be sure they notice any grass roots clinging to the soil.
2. Prepare a second soil box by placing bare soil in it. Place receptacle jars in position (below the notched areas on each container - see illustration).
3. Pour equal amounts of water on each box until soil runoff is detected in at least one box. Predict what will happen to the soil and the water.
4. Examine both boxes and receptacle jars and compare levels of erosion.
5. Measure the water in the receptacles and compare with original amount.

Follow-Up

Have students diagram the two boxes of soil and illustrate how they were affected by surface erosion. Discuss and list reasons the surface erosion differed for each sample.

EXTENSIONS:

1. Teach students the erosion song "There is a Rut" (included). Students should learn this song and sing it throughout the year. It may also be used as a handwriting activity.
2. Refer to "Many Kinds of Soils in Alabama" in Learning Through Legacy (K-2).

"There is a Rut" (Tune: Bingo)

There is a rut in the
sandy soil,
and water is the cause
of it.

W-A-T-E-R (repeat three times)
What are we to do?

There is a rut in the
farmer's field,
And water is the cause
of it.

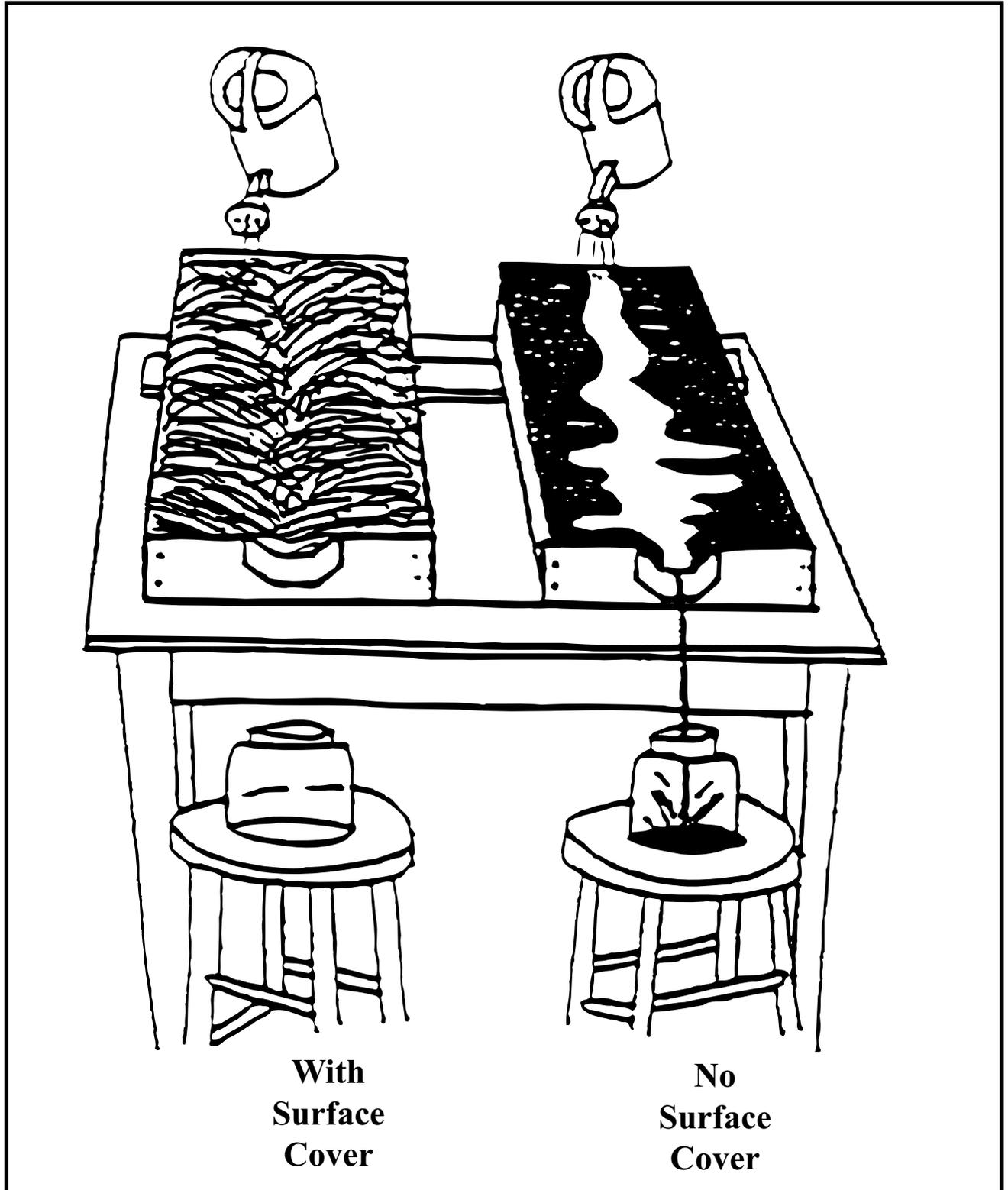
W-A-T-E-R (repeat three times)
What are we to do?

Plant some flower, trees,
and shrubs
To keep the soil in place.
S-O-I-L (repeat three times)
Let's keep that soil in place.

ORIGINAL DEVELOPMENT RESOURCES:

U.S. Department of Agriculture Soil Conservation Service. (1992). *Teaching soil and water conservation*. More info found at: <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/newsroom/features/>

Surface Erosion



**With
Surface
Cover**

**No
Surface
Cover**

Notes

OBJECTIVES:

The student will be able to:

1. List the importance of trees.
2. Identify and discuss the natural life cycle of a tree.
3. Make a list of tree products.
4. Make a list of animals that depend on trees.

BACKGROUND:

Trees filter the air that we breathe, provide habitats, and furnish fuel and fiber. Trees provide numerous environmental benefits. The natural function and the life cycle of a tree are beautifully illustrated in *The Gift of the Tree* by Alvin Tresselt. Alabama has a vast resource of trees, both evergreens and deciduous trees of many types.

VOCABULARY:

deciduous tree - a tree that sheds leaves during a particular season

decomposition - to decay or rot from a process of microbial action

evergreen - trees with green leaves all the year

ADVANCE PREPARATION:

1. Prepare large cut-out leaves.
2. Secure magazines from which to cut out pictures.
3. Prepare a large tree form to attach to wall or bulletin board.

PROCEDURE:

Setting the Stage

Read *The Gift of the Tree* by Alvin Tresselt.

Activities

1. Create a story on the board as students recall details from the story read to them.
2. Prepare a tree form and tape it to the wall or display it on a large bulletin board. Give students large cut-out leaves on which to glue pictures from magazines that represent products from trees, or show animals that make their homes in a tree or get shelter from trees.
3. Make a paper chain sequencing the life cycle of the tree, beginning with a seed and extending through decomposition and rebirth of a tree through its seed.

Follow-Up

1. Develop an ongoing classroom list of tree products.
2. Develop an ongoing classroom list of animals that need trees to live.

EXTENSIONS:

1. Have the class collect and identify leaves from trees in Alabama. This can be an ongoing class project.

Grades:

K-2

Subjects:

Science, Language Arts

Time Needed:

One period for the first part, ongoing

Materials:

The Gift of the Tree by Alvin Tresselt
(optional)

brown bulletin board paper

construction paper

magazines that provide pictures of food or products that are made from trees or animals that make their homes in trees or get their shelter from trees

2. Divide the students into groups and let each group choose one activity about trees from the attached sheet entitled “Tree Activity Leaves.”
3. Refer to “Speakers for the Earth” in Learning Through Legacy (K-2).
4. Refer to “Who Needs a Tree” in Learning Through Legacy (K-2).
5. Ask Alabama Forestry Commission for leaf and tree ID booklets. (See Resources.)

ORIGINAL DEVELOPMENT RESOURCES:

Telfer, C. (1995, Issue III). *Trees*. Good Apple Newsletter. pp. 48-51.

Tresselt, A. (1967). *The gift of the tree*. New York, NY: Lee & Shephard Books.

Tree Activity Leaves

Locate one tree you can easily see from your classroom. Observe the tree throughout the seasons. Illustrate it during summer, fall, winter, and spring.

Go on a tree walk. Record the number of kinds of trees you find. Graph them.

Write a story entitled, "If I were a tree."

List ways trees help us.

List ways we can be a friend to trees.

Collect leaves from different trees. Discuss or list how leaves are alike and different.

Notes

What Is A Beach?

OBJECTIVE:

The student will be able to:

Explain and identify the shoreline and a tertiary dune.

BACKGROUND:

Waves and currents are the chief agents in the formation of beaches. Beaches are by no means stable. Most of them are constantly growing either wider or narrower. They also move towards or away from the land or parallel to the shore. In some instances, changes in beaches can be traced directly to the actions of people. Land building processes compete with land eroding processes at the water's edge. Dunes form slopes on the beach that are important to the slowing of incoming water. Dunes protect the land behind them from storms.

VOCABULARY:

beach - an expanse of sand or pebbles along a seashore

dune - mound of sand usually covered with plants, formed by winds carrying sand into vegetated areas of the beach; forms slopes on the beach that are important to the slowing of incoming water

shoreline - the place where water and land meet

tertiary dune - the largest dune located the greatest distance from the shoreline (The tertiary dune forms the border for the beach area.)

ADVANCE PREPARATION:

Gather materials.

PROCEDURE:

Setting the Stage

Using a globe or map, point out Alabama's beach area. Ask the students how many of them have vacationed on Alabama beaches.

Activity

Explain vocabulary words by building a model of a beach. On a small piece of heavy cardboard, sketch the shoreline and beach areas. Use dough or clay and build up the beach from the shoreline to tertiary dune. Lightly sprinkle dough with sand and gently press the sand into the dough. Cut blue paper or plastic wrap to fit the shoreline to represent water. Use small plants to represent "dune vegetation." (These could be made by using toothpicks, paper, and cotton.)

Follow-Up

1. Divide the students into cooperative groups and give them supplies to assemble the various areas of a beach, water, shoreline, and dunes. Older students may label their models.
2. As a class or in groups, have students make a list of descriptive words for each part of the beach: water, shoreline, and dunes.

Grades:

K-2

Subject:

Science

Time Needed:

two 60-minute periods

Materials:

modeling dough or clay
blue construction paper or blue plastic wrap
small plant pieces
white sand
heavy cardboard
glue or tape
globe

3. Have students explain why dunes are important. Ask students what might help hold the dunes in place. (vegetation - like sea oats)
4. Predict what might happen if a storm hits a beach with and without dunes.
5. Discuss how human actions of building on the beach affect dunes.
6. What three forces can move or destroy a sand dune (wind, water, developments)?

EXTENSIONS:

1. Have students bring pictures of vacations they have taken at the beach. Share these with the class. Also have them bring shells and other things they found at the beach.
2. Have students write or dictate stories about a beach vacation.
3. Have students research the effects of hurricanes on Alabama beaches.

ORIGINAL DEVELOPMENT RESOURCES:

Shepard, F.P. (1979). Seashores. *Popular science*, (Volume 2). Danbury, CT: Grolier, Inc.

When I Was Young In The Mountains

NATURAL RESOURCES

OBJECTIVES:

The student will be able to:

1. Compare and contrast modern life with rural life of long ago.
2. Explain how modern life is affecting our water, soil, and air.
3. Identify a mountain as a land formation.

BACKGROUND:

The great forests that grow on many mountainsides give us lumber. Rich mountain grasslands are used for grazing. The rivers and streams that rush down steep mountain slopes provide water power for electricity. Large dams and power plants have been built on several mountain rivers. Rich deposits of coal, iron, copper, tin, uranium, salt, gold, silver and precious rocks and minerals often lie beneath the surface of a mountain. Almost as soon as a mountain begins to rise, erosion starts to wear it down. Rain and melting snow form streams that lead into rivers. The flowing water slowly cuts channels in the rock, washing away stones and other material. Sometimes the rivers cut great canyons between mountain peaks.

ADVANCE PREPARATION:

Become familiar with the book *When I was Young in the Mountains* by Cynthia Rylant.

PROCEDURE:

Setting the Stage

Read *When I was Young in the Mountains* by Cynthia Rylant.

Activity

Discuss how the children's lives in the book are different from children's lives today. Discuss what ways of life described in the book are better or more difficult than our ways of life now. Have the students think about whether the water and air are cleaner now or were cleaner when the author was a child. Have them think about whether the soil is richer and more productive now or then. Have them write and illustrate what they would like to do if they lived in the mountains.

Follow-Up

1. Prepare a tasty snack of mountain food: cornbread, pinto beans, fried okra, pickles, etc.
2. Have students make a "then and now" chart of similarities and differences of modern life and rural life of previous years. Areas or topics that might be included are: How people get food; How people make a living; How land is used; What people do for fun; What kinds of houses were lived in then; What kinds of houses are lived in now. Relate proper clothing to a mountainous climate. How has modern life changed the mountain environment? (skiing, tourists)
3. Discuss ways that life during the time when the author was a child might have been difficult (outhouse, lack of running water, no electricity).
4. Differentiate between economic needs and wants.
5. Compare community needs.
6. Identify a major event in US history during the time period in the book.

Grades:

K-2

Subjects:

Science, Literature, Social Studies

Time Needed:

60 minutes

Materials:

When I was Young in the Mountains by
Cynthia Rylant

EXTENSIONS:

1. Math - Graph how many of the students prefer modern life to life in the mountains.
2. Graph the places students prefer to live: the city, the beach, the mountains.
3. Make a model of mountains and extend to explain the watershed concept between the mountains. Show the formation of the rivers, valleys, build a dam along the river.
4. Combine with a geology lesson on rocks/minerals.
5. Refer to “Many Kinds of Soils in Alabama” in Learning Through Legacy (K-2).

ORIGINAL DEVELOPMENT RESOURCES:

Rylant, C. (1982). *When I was young in the mountains*. New York, NY: E.P. Dutton, Inc.

OBJECTIVES:

The student will be able to:

1. Discuss the process of fossilization
2. Have an understanding of how fossilization creates fossil fuels.
3. Become aware of how quickly our supply of fossil fuels is diminishing.

BACKGROUND:

A fossil is the preserved remains of any prehistoric organism. Fossilization occurs when plant and animal remains are compressed by mud, sand, and sediment over millions of years. Fossils are very common in Alabama. During the Mesozoic Era (the age of dinosaurs) the area that is now Alabama was mostly underwater. As a result sea fossils such as oysters and snails can be found in abundance.

Some of these fossils' remains became fossil fuels such as petroleum, coal, and natural gas. Fossil fuels are available only in very limited quantities. However, our society has grown extremely dependent upon them. The amount of fossil fuels burned by humans has nearly doubled every 20 years since 1900, quickly diminishing our reserves and forcing scientists to seek new sources of energy.

VOCABULARY:

fossil - hardened or petrified plant or animal; a remnant impression, or trace of an animal or plant of past geological ages that has been preserved in the Earth's crust

fossil fuel - fuel found underground that is usually formed from dead plants and animals; fossil fuels include coal, crude oil, and natural gas

prehistoric - pertaining to the time before recorded history

ADVANCE PREPARATION:

Collect and assemble materials.

PROCEDURE:

Setting the Stage

Explain to the students that a fossil is created when plants or animals of past geological ages are preserved in the Earth's crust. Tell the students that even though this process usually takes thousands of years, we can do an experiment to find out how it happens.

Activities

1. Spread the damp clay or play dough in the bottom of the box or pan.
2. Press an item (some good items to use are shells, nuts, pieces of bark, feathers, or bones) into the clay or play dough with your hands. Be sure it is pressed all the way in.
3. Describe the item: size, shape, color, texture.

Grades:

K-2

Subject:

Science

Time Needed:

60 minutes

Materials:

small sturdy box or an aluminum foil
tart pan
clay or play dough
plaster of Paris
Items to fossilize such as:
seed pods
shells
nuts
pieces of bark
feathers
bones
real fossils
picture of dinosaurs

4. Mix the plaster of Paris with water to form a paste. (Do not mix until you are ready to use.)
5. Pour the plaster of Paris into the mold to cover the item completely.
6. Leave the plaster to dry overnight. Predict how it will look before you peel. Then peel away the box or pan and clay to reveal your own fossil creation.
7. Look for likenesses and differences in fossil and real object.
8. Match fossil molds to real objects.
9. Rotate the molds 90 degrees to 180 degrees and have students match to the real object.

Follow-Up

1. Have students collect items to “fossilize” in clay at an art center. Students can press or roll items into clay to experience the fossil effect. Predict how the fossil will look.
2. Develop a set of statements on sentence strips outlining the steps of fossil formation. Have students put these in order. Then use them as a reading or handwriting activity.
3. Display real fossils for students to look at and discuss.
4. Ask students which fossil fuels their families use and how we can conserve them.

ORIGINAL DEVELOPMENT RESOURCES:

Batchelor, D. (1984). *The fossil game*. University, AL: The Learning Line.

Forte, I. (1985). *Nature crafts*. Nashville, TN: Incentive Publications, Inc.

OBJECTIVES:

The student will be able to:

1. Describe and illustrate the water cycle.
2. Define terms related to water.

BACKGROUND:

Water is constantly changing states. Evaporation, the process of converting liquid to vapor, is a never ending process. Water from oceans, rivers and streams is constantly evaporating, forming clouds, and returning to Earth in different forms. Water is recycled from the Earth into the air and back to Earth.

VOCABULARY:

clouds - mass of vapor in the sky

condensation - process of turning vapor to liquid

evaporation - process of turning liquid to vapor

fog - water vapor obscuring vision

freeze - to harden into a solid (as ice) by loss of heat

precipitation - condensed moisture that falls back to Earth

steam - gaseous or vaporized water

vapor - gaseous substance as steam or mist

Grades:

K-2

Subjects:

Science, Language Arts

Time Needed:

Two days, 30 to 45 minutes

Materials:

Water's Way by Lisa Westberg Peters

paint brushes (optional)

pail or bucket

hot plate

zip lock bag

ice

pot

ADVANCE PREPARATION:

1. Locate the book *Water's Way* by Lisa Westberg Peters.
2. Collect other materials for the experiment.
3. Copy and give the illustration of the water cycle to each student to color. Discuss with students.

PROCEDURE:

Setting the Stage

Read the story *Water's Way* by Lisa Westberg Peters. Ask questions as you are reading: Who knows how the puddle formed on Tony's window sill? What do you think happened to the puddle of water on Tony's window sill? Why was Tony's bath water steamy? Why did the fog on Tony's window freeze? What do you think Tony saw out of his window when he got up? Introduce and discuss evaporation, precipitation, condensation, clouds, and vapor.

Activities

1. Day One: Choose a warm day. Fill a pail or bucket with water. Give students paint brushes and have them paint with water on the sidewalk. Watch as the picture disappears. Discuss where the painting went. Redefine evaporation and explain that heat from the sun caused the water to change from liquid to vapor.
2. Day Two: Review activities and concepts from prior day. Put water in pot and place on hot plate. As water begins to boil, steam will rise. Redefine vapor as a different form of water. After observing and discussing water vapor, fill a zip lock bag with ice cubes. Hold ice at approximately a 45-degree angle above water. Create rain by allowing the droplets to form on the bag and gently shake the bag.
3. Discuss how the sun causes evaporation and cloud formation. Water vapor rises where the air is cooler and changes back to liquid form. Water falls from the sky in the form of rain, snow, sleet, or hail.

Follow-Up

1. Give each student a piece of drawing paper, crayons, and a pencil. Have them illustrate what they have learned about the water cycle. For non-writing students, let students dictate to you as you write the story on the illustrations. Laminate the students' illustrations and stories and assemble into a book to share with the class. After reading it to the class, put the *Water Cycle* book in the classroom library.
2. Long-range lesson/activity studying precipitation and evaporation for one month.
 - Place rain gauge outside classroom at the beginning of any month, but try choosing a springtime rainy month
 - Check the rain gauge 2 - 3 times per week and graph the measurement over the entire month.
 - Teachers can read from an Almanac about the same month last year, and the amount of precipitation.
 - Have students make a second graph comparing last year's rainfall with this year.
 - For fun, students can guesstimate whether this year's rainfall will be higher or lower than last year's.
 - Have students make a third graph charting the amount of evaporation compared to the amount of precipitation.
 - Discuss the importance of the water cycle to our farmers - make sure your classroom has a copy of the *Farmer's Almanac*.
 - Discuss the importance the ozone plays in planning for artificial supply of water to farm crops.
3. Duplicate the two circle graphics and have students color each one. Cut out the squares and put the circles together using a brad. Ask students to explain the water cycle as they spin the graphic of arrows and water drops.

EXTENSIONS:

1. Rain comes in many forms. Discuss the difference between a downpour, drizzle, sprinkle, rain and mists. Teacher, clearly define the difference between these terms, consult dictionary.
2. Place a small plant on science table. Cover with a clear glass jar. Observe condensation.

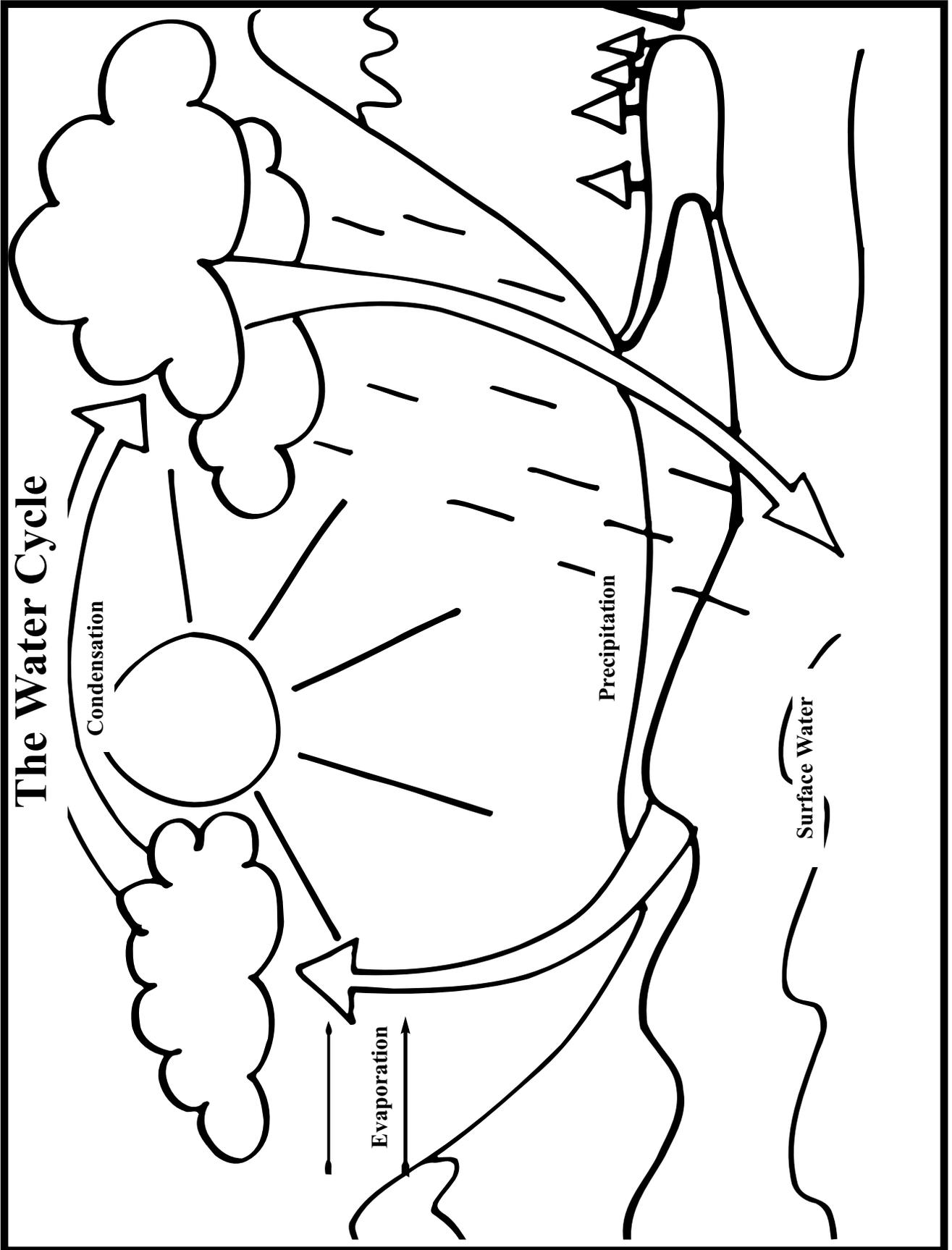
ORIGINAL DEVELOPMENT RESOURCES:

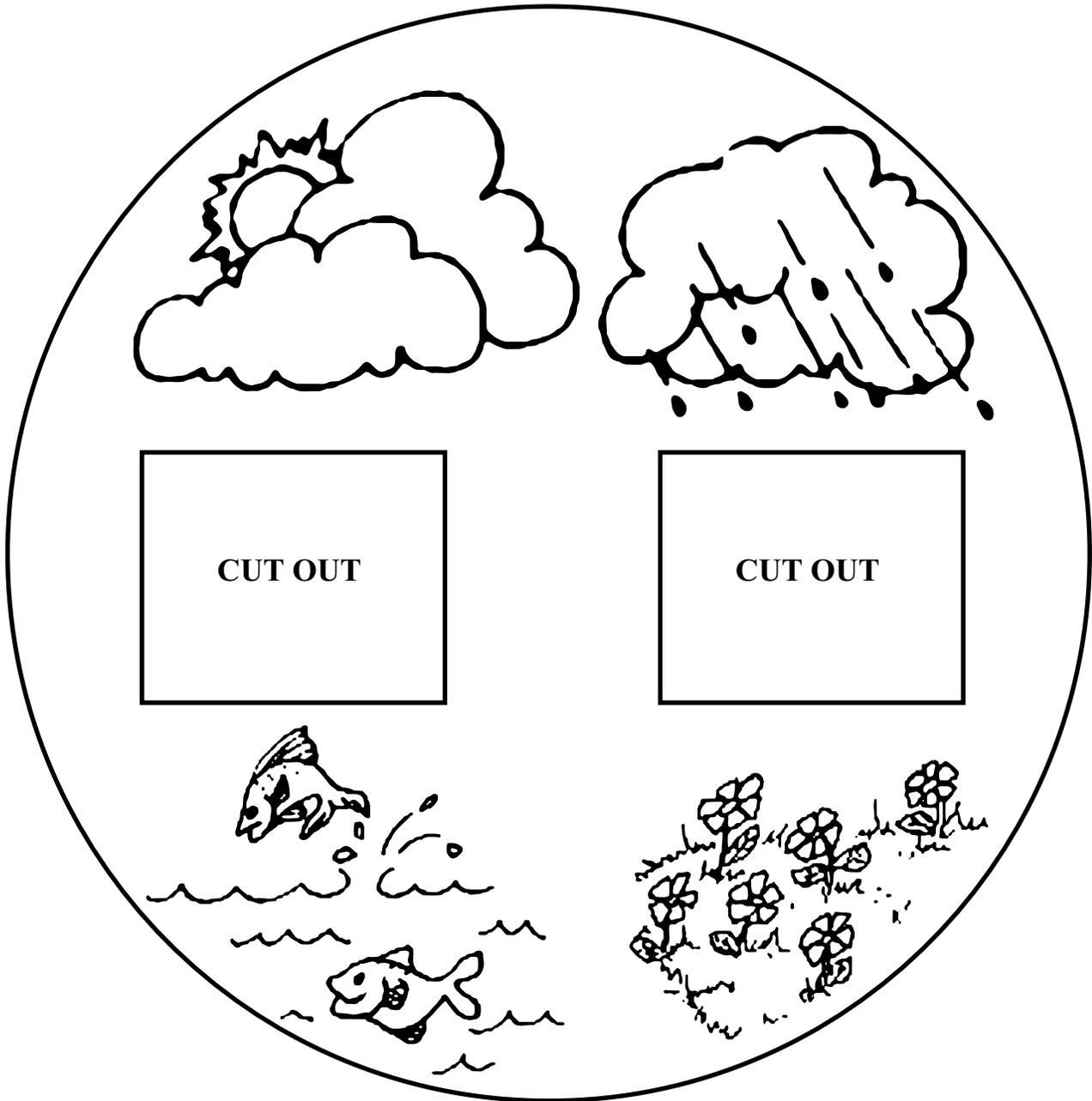
Pascoe, G. (1987). *Two feet*. South Australia: Era Publications.

Peters, L.W. (1991). *Water's way*. New York, NY: Scholastic, Inc.

Spier, P. (1982). *Rain*. New York, NY: Doubleday.

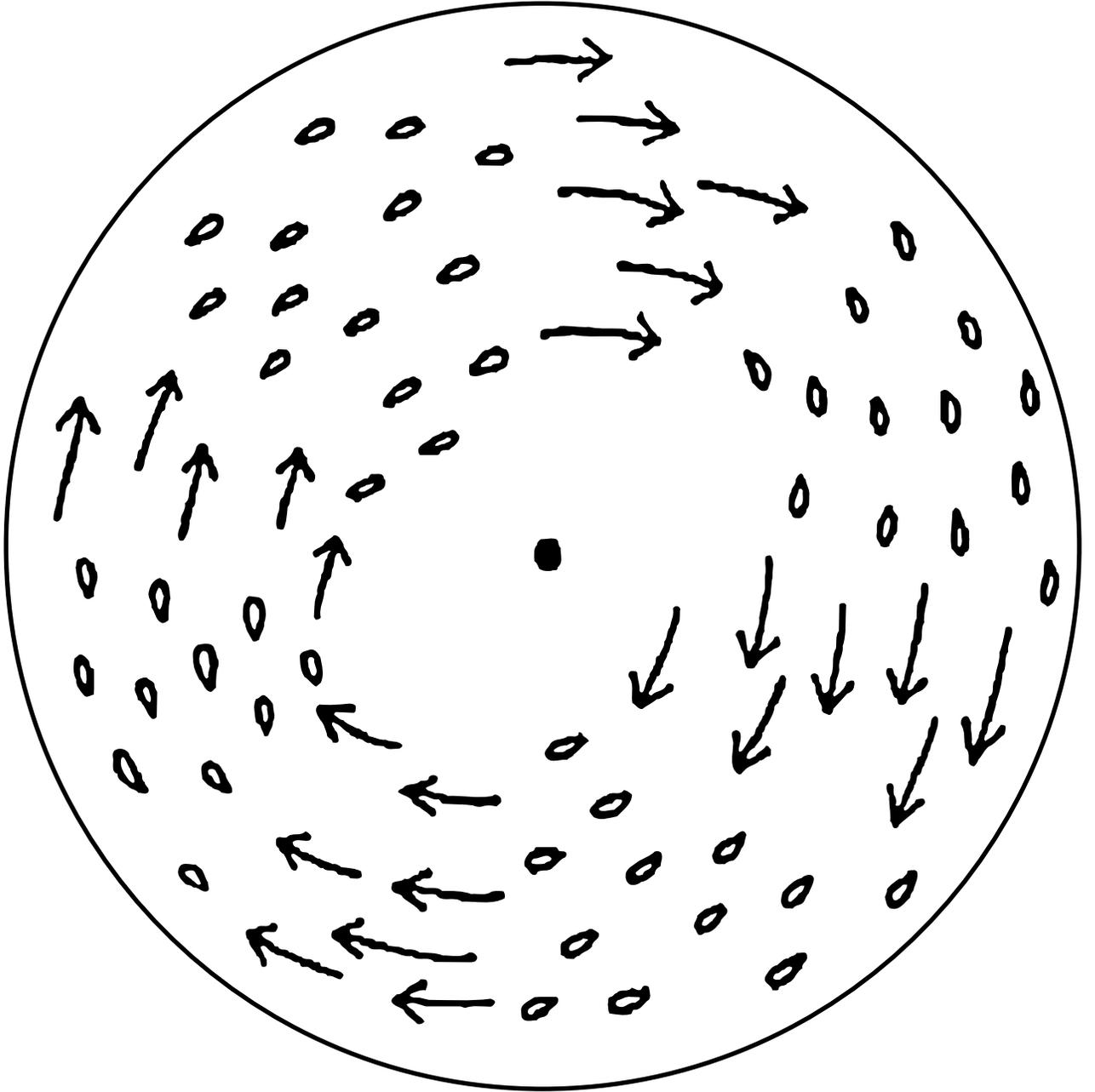
The Water Cycle





CUT OUT

CUT OUT



Notes

OBJECTIVES:

The student will be able to:

1. State percentage of the amount of our Earth that is covered with water and compare the amount of water to the amount of land found on the Earth.
2. Create and read a pie chart.

BACKGROUND:

What does the Earth look like to astronauts who circle thousands of miles above us in a rocket? What they see looks a lot like a large floating ball covered mostly with blue water. That's because oceans cover almost three-fourths of the Earth. Water, the most abundant resource on Earth, is irreplaceable. All the water that has ever existed on Earth, and all the water that will ever exist on Earth, is present today. Therefore, it is essential that it be carefully protected and cherished. Any study of water conservation, sea life, river life, or watersheds must begin with a student recognizing the importance and predominance of water on the Earth

VOCABULARY:

continent - a large land mass

globe - a model of the Earth

ocean - the whole body of saltwater that covers nearly three-fourths of the surface of the Earth

PROCEDURE:

Setting the Stage

Begin with questions. Where do we live? We live in a city (or name the town in which your school is located). Where is this city/town? (In a state called Alabama). Where is Alabama? (In a country called the United States of America). Where is the United States of America? (On a giant land mass that scientists call a continent; the name of that continent is North America). Where is the continent of North America? (On a planet that scientists call Earth).

Activities

1. Show the students the globe and explain that the globe is a model of the planet Earth. Some people have given Earth a nickname, the "Blue Planet". Whirl the globe on its axis and let the students discuss the reasons for Earth's nickname. Help students locate the large land masses (continents) and count them. Explain that the continents resemble huge islands that float in one big ocean. Show the different sections of ocean and explain how each section has a name, even though all water in every ocean flows together. Find the ice caps. Discuss the comparison of water and land on Earth. Show the students the blue on the globe represents all the water on Earth.
2. Give each student a round balloon to blow up and tie off. Tear many newspaper strips approximately one inch wide by six inches long. Mix three parts liquid starch to one part water and dip the newspaper strips into the liquid starch mixture then wrap the strips around the balloon. Wrap several layers smoothly around the balloon and then add the blue square strips of paper to represent the ocean. Allow to dry for several days then paint the hardened ball. Sponges cut by the teacher in shapes of continents may be dipped in

Grades:

K-2

Subjects:

Science, Social Studies, Art

Time Needed:

30-45 minutes and 15-20 minutes daily on papier mache'

Materials:

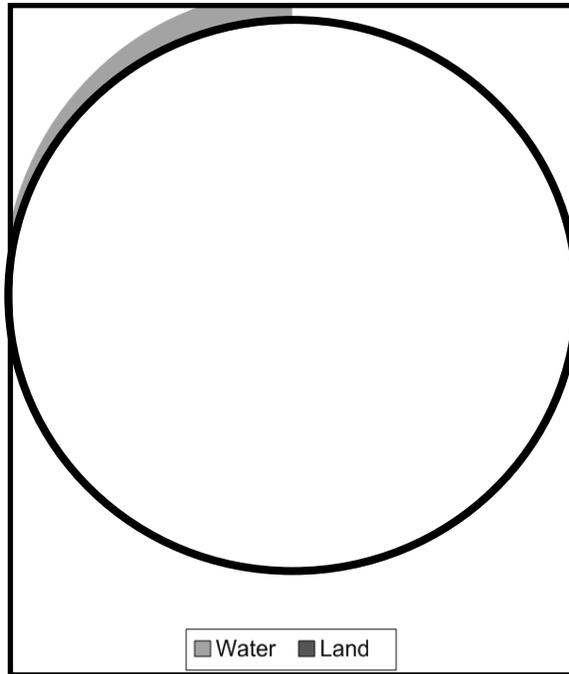
three 5"x5" sq. of blue paper
sponges
green and white acrylic paint
paint brushes
liquid starch
newspaper
balloons

green paint and printed on the dry ball. Use white acrylic paint to paint ice caps. Place a compass rose on your globe. Discuss.

3. The oceans vs. land. There are four oceans. The three largest oceans are the Pacific, the Atlantic, and the Indian. The Arctic is a smaller ocean. To show how much water there is on earth, follow the directions below:

1. Draw a circle on a piece of paper.
2. Use a pencil to divide the circle into four quarters.
3. Color one square (quarter) brown to represent land
4. Color the 3 remaining squares (quarters) blue to represent water.

Discuss the fact that all seven continents would fit into the largest ocean. The largest ocean (the Pacific) contains 46% of the Earth's water. (Idea: *Water Science* by Deborah Seed)



Follow-Up

1. Label the continents and oceans.
2. Have students compare the features of a globe to a map of the world.

ORIGINAL DEVELOPMENT RESOURCES:

Schwartz, L. (1990). *Earthbook for kids: Activities to heal the environment*. Santa Barbara, CA: The Learning Works.

Air, Air Everywhere

OBJECTIVES:

The student will be able to:

1. Observe that air is real and has weight.
2. Explain that air is matter.
3. Identify and name the properties of air.
4. Observe the effects that air has on objects.

BACKGROUND:

Even though it can't be seen, air is a substance that takes up space and affects the way objects behave. Wind is air in motion.

VOCABULARY:

air - the mixture of invisible, odorless, tasteless gases that surround the Earth

wind - air in motion

ADVANCE PREPARATION:

1. Gather materials.
2. Prepare a parachute using a small ball, a string, and a two-foot square of cloth.

PROCEDURE:

Setting the Stage

Read *Gilberto and the Wind* by Marie Hall Ets. Discuss how Gilberto had fun playing with his friend, the wind. Tell the students that we are going to play with the air today.

Grades:

K-2

Subject:

Science

Time Needed:

45-60 minutes

Materials:

pan of water

balloons

plastic bag

straws

empty plastic bottle

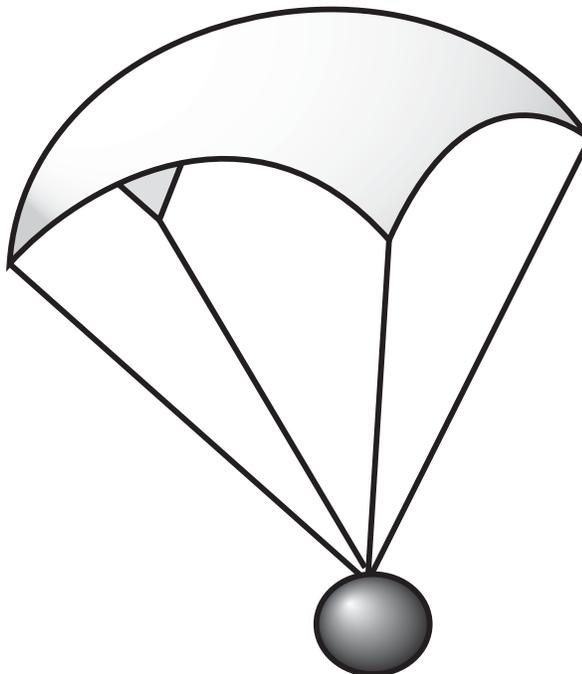
Gilberto and the Wind by Marie Hall

Ets

small balls for each student

16 inch square cloth

4 feet of string



Activities

Activity 1

1. Submerge an empty plastic bottle into a pan of water and watch the bubbles.
2. Blow up a balloon and put it under the water. Release the air in the balloon.
3. Allow the students to feel the air coming through a straw when they blow through the straw.
4. Allow the students to blow through the straw into the water.
5. Blow up a balloon. Place the mouth of the balloon onto the mouth of a deflated plastic bag and let the air escape from the balloon into the plastic bag.
6. Go outside and allow the students to throw small balls into the air and catch them. Now explain that if they had some way to catch some of the air, it would make a difference in the way the ball fell. Ask students to predict what will happen when you throw the prepared parachute into the air and write down their answers on a chart tablet. Throw your parachute into the air and observe it floating downward. Explain that the air will cause the parachute to fall slowly.

Activity 2

1. Use different objects to tie on to the end of the parachute (made of 16 inch square of cloth, tied on the corners using the string). Find the objects you wish to use, sort the objects found at home into heavy / medium / light. Guess which objects will fall the fastest. Notice which objects falls more to the N / S / E / W? Measure the distance. Students drop parachutes as the teacher times the fall. Graph the results: heavy vs. light.

Follow-Up

1. Following the air experiments, discuss the properties of air. Air takes up space and has weight. It can move and supply energy such as that used by a windmill or sailboat.
2. Older students can record predictions for each air experiment. These may be written or illustrated. Following the air experiments, have students record their outcomes.

EXTENSIONS:

1. As an outdoor activity, take a large tub and fill with water. Place small plastic boats in the water and have students move them, using air. Students could also make boats from natural items such as leaves, flowers, or nut shells. This can also be a water table activity.
2. Have a boat race and/or a boat-design contest. Save the best from each year and use it with the new ones next year.
3. Put a small amount of soap and water into a cup so that each student has a cup of soapy water. Dip the end of the straw into the cup. Remove the straw, allowing the soapy mixture to drip once. Blow gently and produce a bubble. Talk about air being inside the bubble. Talk about how the bubble has different colors because light changes when it shines through the bubble. Ask the children to hypothesize why bubbles burst when they hit the ground.

ORIGINAL DEVELOPMENT RESOURCES:

Brown, S. (1981). *Bubbles, rainbows and worms*. Mt. Ranier, MD: Gryphon House, Inc.

Ets, M.H. (1963). *Gilberto and the wind*. New York, NY: Viking Press.

Nickelsburg, J. (1976). *Nature activities for early childhood*. Phillipines, USA: Addison-Weslev Publishing Company.

How We Use The Land For Fun And Profit

OBJECTIVES:

The student will be able to:

1. Describe the many ways in which we use the land for fun and profit.
2. Identify the names of occupations and recreations that use the land.
3. Compare the terms occupation and recreation.

BACKGROUND:

Some people use the land to make a living, while others use the land for fun and recreation. Each of these occupations and recreations may use a different part of the available land. Some people may have a place of their own to use, such as a farm. Others may borrow the land they use. People may need a variety of special clothes or special tools, depending on the tasks in which they are engaged.

ADVANCE PREPARATION:

1. Copy enough activity pages for each student to use.
2. Cut a large piece of butcher paper for the class to use to make a mural.

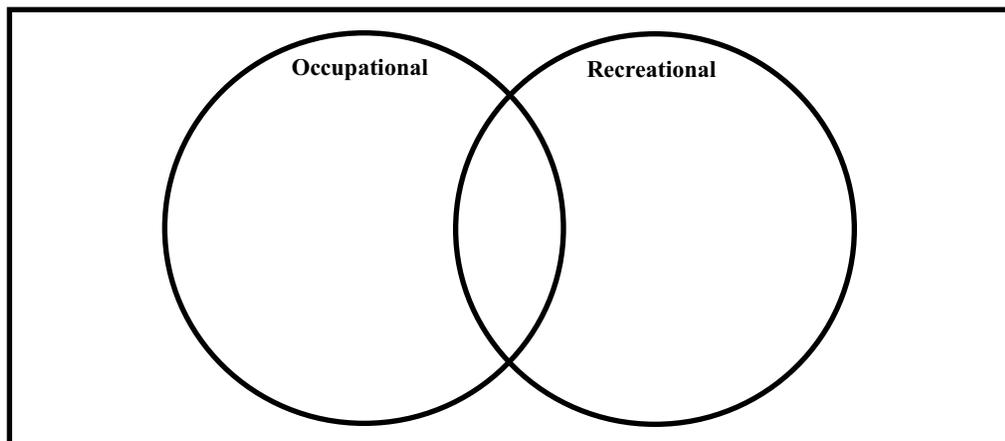
PROCEDURE:

Setting the Stage

1. Ask the student if they know any farmers, campers, hunters, fishermen, or others who use the land to make a living or to have fun.
2. Ask where these people work or play. What is the land like where they do this? Are there trees or not? Fences? Do they use any special equipment?

Activities

1. Ask the students to choose a person to color, from the activity sheet.
2. Divide students into groups to work on the mural: some to make the farm, others to make the woods, mountains, and trails. They can use the old magazines to find trees and animals to add to their mural.
3. Make a Venn Diagram. Which mural did you choose? Occupational, recreational, or both?



Grades:

K-2

Subjects:

Social Studies, Language Arts

Time Needed:

30 minutes

Materials:

copies of activity sheet, "People Who Use the Land" for each student
magic markers
butcher paper
old magazines
paste or glue

4. Play the “How We Use the Land for Fun and Profit” game attached.

Follow-Up

Invite another class to come and see the mural. Have students from each of the groups describe their part in making the mural and explain what the people in their area are doing.

EXTENSION:

Have someone who works on the land, such as a farmer, gardener, or someone who works in recreation, visit the classroom to talk about the importance of keeping the land in good and useful condition.

ORIGINAL DEVELOPMENT RESOURCES:

Alabama State Park Brochures

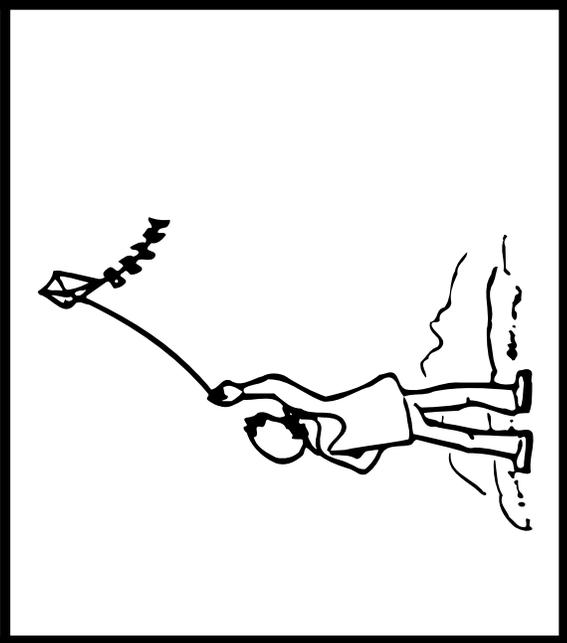
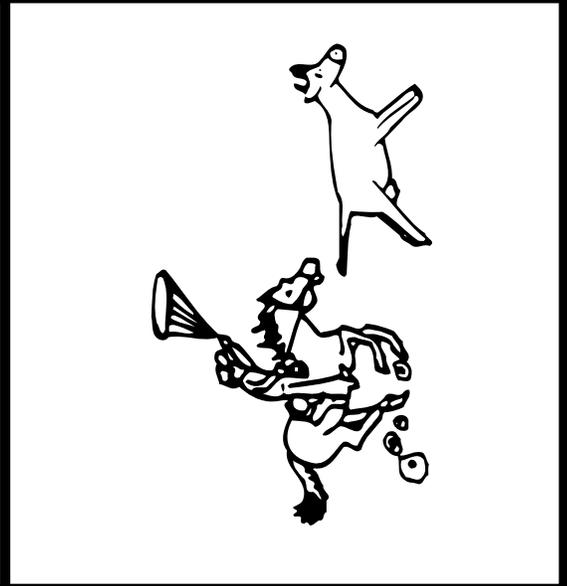
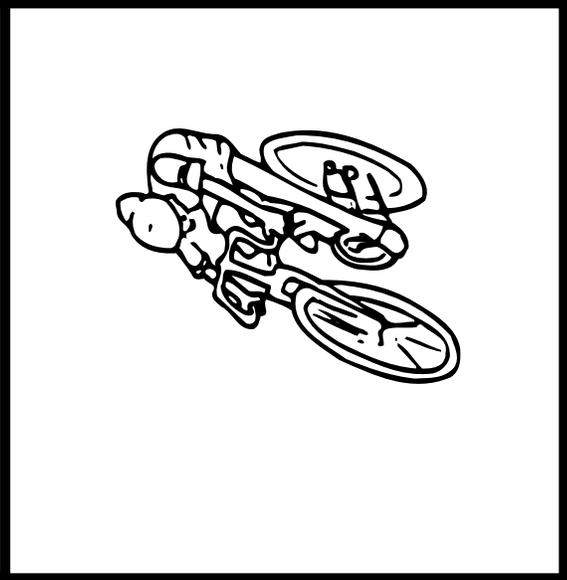
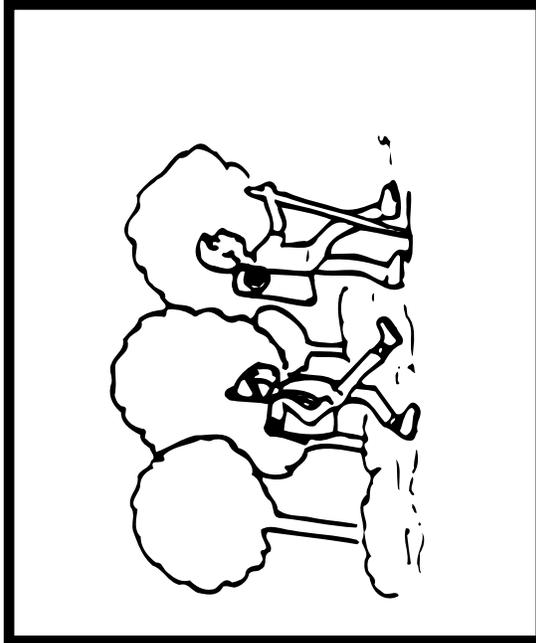
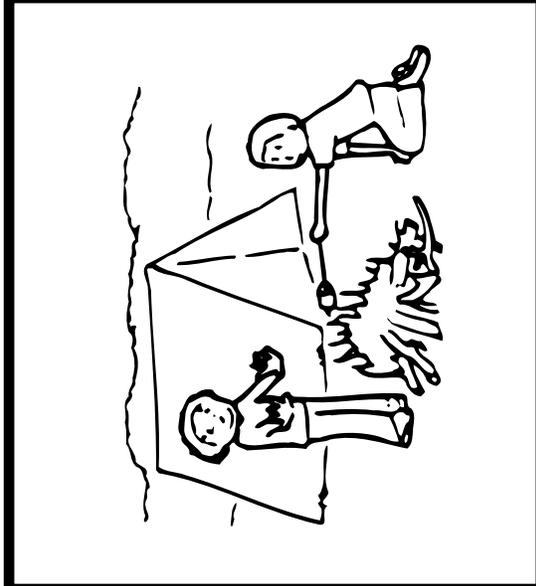
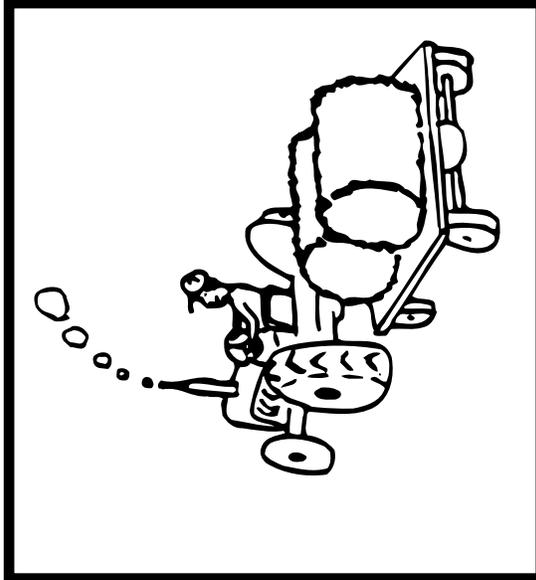
Flemming, B., Hamilton, M., & Hamilton, D.S. (1969). *Resources for creative teaching in early childhood education*. New York, NY: Harcourt, Brace, Jovanivich.

Harlan, J.D. (1976). *Science experiences for the early childhood years*. Columbus, OH: Charles E. Merrill.

Peabody picture collection. (1989). MN: American Guidance Service.

People Who Use The Land

Lesson: How We Use The Land For Fun And Profit



How We Use The Land For Fun And Profit

Procedure

- * Place the correct question cards on the correct title before starting the game.
1. Roll the dice to determine the number of the pocket from which a question must be asked.
 2. Choose a team leader to read the questions.
 3. If a player answers correctly, a point is given.
 4. If the answer is incorrect, strip is returned to the pocket.
 5. The winner is the person with the most points.

FARMER

LOGGER

**MOUNTAIN
CLIMBER**

Pick-A-Pocket

HIKER

RANCHER

CAMPER

How We Use The Land For Fun And Profit

Question Cards

I work the land every day. It is something I do for a living. I plant, tend, and harvest my crops. Is this an occupation or a recreation?

I cut down trees every day. I send the trees to a company which will make paper for you to write on. Is this an occupation or would this be for recreation?

I climb mountains every chance I get. I like to hike up the tall, giant mountains. I was trained by a coach. Do you think I do this exercise for fun or profit?

I bought myself some very good hiking boots. I go on very long hikes at least once a month. I love to do this activity but it is very hard work. Do you think this is an occupation for me or a recreational activity?

I raise cattle on a farm. I must get up at 5:00 am every day of my life. I take care of the cattle until they are old enough to sell. People buy my cattle to sell for food. Is this an occupation or recreation?

My family and I go camping in a tent. We do this several times a year. We have a great time on our trips. Do you think I do this for fun or for a profit?

I am a cotton farmer. Last year I made \$0.75 for each bag of cotton sold. The first week I made \$3.75 profit. How many bags did I sell? Would you say it is for fun or profit when you earn money for your work?

I earned \$0.50 for each tree I cut down. The first day I earned \$10.00. How many trees did I cut that day? I got paid for my work so was it for fun or for a profit?

I climbed 5 miles the first day. I climbed only 4 miles the second day. How many miles did I climb in 2 days? Do you know if a mountain climber does it for fun or profit? I didn't say I earned any money.

I hiked a total of 10 miles the first day but my friend hiked 15 miles. How many more miles did my friend hike than I did? Do you think my friend and I are doing this for fun or profit?

I am a cowboy on this cattle ranch. I counted 25 cows at first but on the second try I only counted 19. How many more cows did I count on the first try? Is this an occupation or recreation?

I put up tents for everyone last night. The rule for camping was three people to a tent. There were 15 people in all so how many tents did I set up? This sure was a lot of work. Did I do this for fun or profit?

Notes

Using Our Natural Resources For Agricultural Production

Objectives:

The student will be able to:

1. Identify foods grown in Alabama.
2. Identify the food groups to which these foods belong.

Advance Preparation:

1. If the classroom is located in a rural school district, some of the children's families may be involved in farming. It would be helpful to have this information in advance. Visit <http://www.choosemyplate.gov> for more info.
2. The posters of the four food groups should be posted on a table large enough to display a collection of foods.

Procedure:

Setting the Stage

1. Ask the students what crops are grown in Alabama and list these on the board. Add others they may not be aware of.
2. Explain to the students that they will be making a display of the different foods grown in Alabama. Pass out the list of foods and the request to parents.

Activities

1. Ask the students to share the food they brought in and anything they may know about that food (answers may range from "I like it" to information about how a grandfather grows it).
2. Ask students to place the food group in the appropriate area on the display table.
3. Choose a student to put on Gregory (puppet attached). As the puppet character the student then reads the Direction Card.

Example:

Puppet: I'm Gregory from Alabama.

Student: I'm going to feed Gregory good foods that are grown in Alabama (student chooses foods and gives them to puppet etc.)

Students take turns reading Question cards from Gregory and following the directions on the card chosen. (Question Cards included)

Follow-Up

1. The foods can be tasted and shared. The fruits can be made into fruit salad. Vegetables can be tasted raw and have the students compare them to their more common cooked texture.
2. Have students put each of the foods they are tasting into one of the four food groups. Discuss the reasons why.

Extensions:

1. The students can be encouraged to think of other ways to group the foods. (Some are eaten raw and others are usually cooked; some grow on trees and some in the ground.)
2. Measure and weigh foods grown in Alabama. Predict which food would weight the most/least etc. Graph the results.
3. Predict which foods will float or sink. Place the food in water to test the predictions.

Grades:

K-2

Subjects:

Language Arts, Health

Time Needed:

30 minutes

Materials:

Gregory and the Terrible Eater

small teacher-made posters identifying the four basic food groups
a list of foods grown in Alabama for each child to take home along with a request for each family to send in one of the food items to the classroom

ORIGINAL DEVELOPMENT RESOURCES:

Alabama State Park Brochures

Flemming, B., Hamilton, M., & Hamilton, D.S. (1969). *Resources for creative teaching in early childhood education*. New York, NY: Harcourt, Brace, Jovanivich.

Harlan, J.D. (1976). *Science experiences for the early childhood years*. Columbus, OH: Charles E. Merrill.

Peabody picture collection. (1989). MN: American Guidance Service.

**Gregory
Question Cards**

**Please tell me some good foods
that are grown in Alabama & then
feed me some of them.**

**I like to feel cotton. I also like
to eat cotton. Do you eat cotton?
Feed me some please.**

**Do you know which food group
that apples would be in? Please
tell me and then feed me some.**

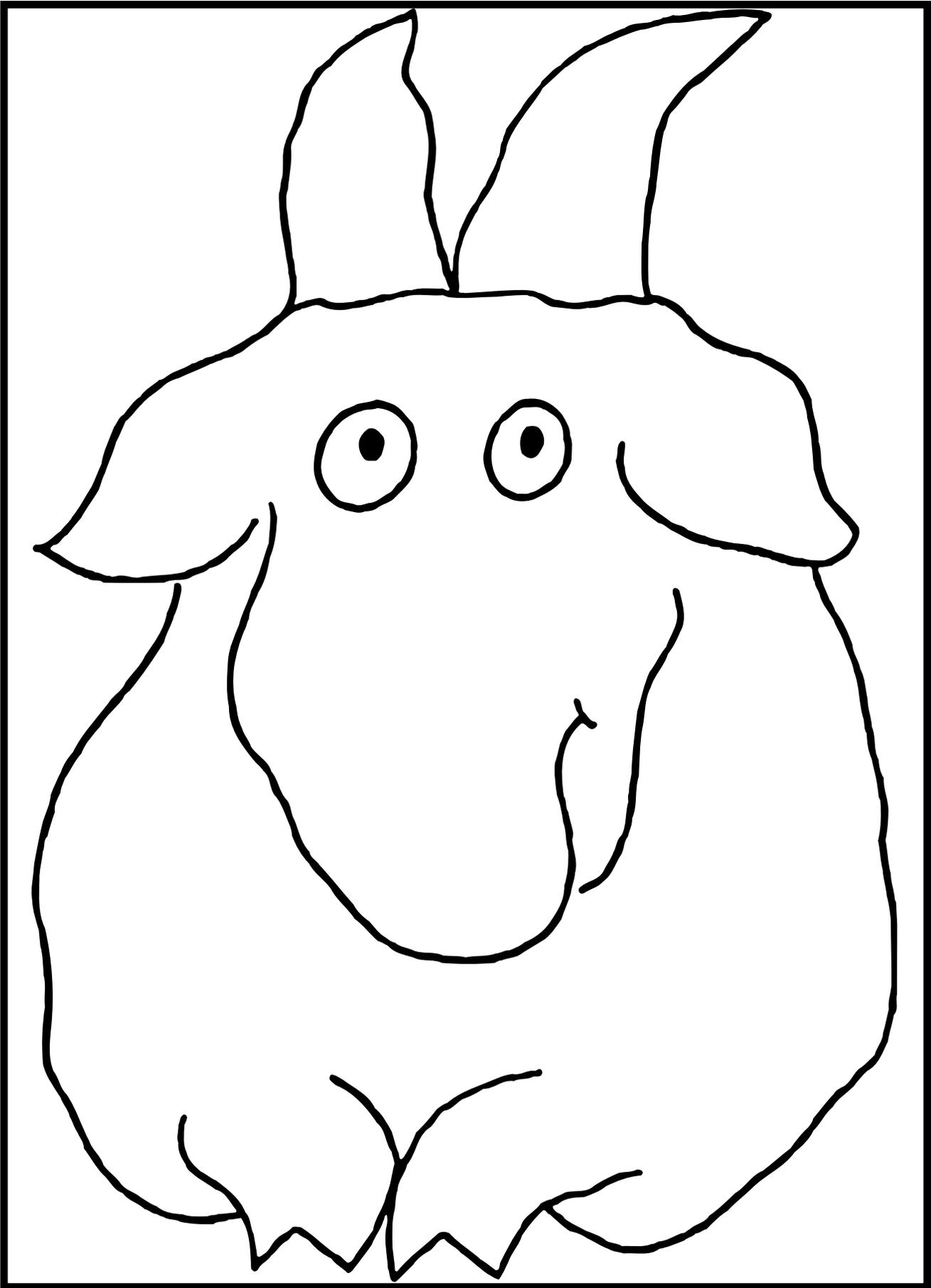
**Which food did you bring into the
class to study? Tell me about it
and I really should taste it!**

**I love peanuts & I heard your teacher
say that they were grown in Alabama.
I'll bet you could get me some but I eat
mine with the shell.**

**Think of a red food that can be grown in
Alabama. I grew some of these in my
backyard. What about a little taste?**

**Name a food that you have studied this
week and put it into the correct food
group. Did you know that you are very
smart?**

**I wish I had some corn. Do you know
if this is grown in the state of Alabama?
If it is, could you direct me to the corn
field? I am very hungry.**



OBJECTIVES:

The student will be able to:

1. Identify cotton as an important crop grown in Alabama
2. Identify garments that are made from cotton.

BACKGROUND:

Cotton is an important natural resource in Alabama. Many items are made from cotton. Cotton grows on a plant and is cultivated in fields. The cotton fibers come from the seed pod. This fiber is used to make clothes, sheets, cotton balls, and other things. The cotton seeds are pressed to make oil, and the cotton seed hulls are used as mulch.

ADVANCE PREPARATION:

If the classroom is located in a rural school district, it may be possible to get some pieces of a cotton plant to display. It would be helpful to have a selection of garments made of cotton for the students to see and feel.

PROCEDURE:

Setting the Stage

1. Ask the students what their clothes are made of. Help them become aware of the tag in the garment that identifies the material.
2. Show the students the collection of garments that are made of cotton. Let them feel the fabrics and identify each garment by name.
3. Ask students if they have seen cotton growing in a field. Show pieces of a cotton plant if available.
4. Explain how cotton grows through the growth process from a seed to an adult plant.

Activities

1. Ask the students to look in the magazines for pictures of garments or other products that could be made of cotton.
2. Ask them to cut the cotton products out of the magazine and glue them onto the pieces of poster board for a classroom display.
3. Find out which students have on cotton clothing. Graph the results. Question : Do I have on cotton today?
4. Compare cotton to all different types of material.
5. Predict the number of seeds that are inside the picked cotton. Encourage the children to count the actual seeds.

EXTENSION:

Possible field trip to extend this concept is:

- A trip to a cotton gin.

Grades:

K-2

Subjects:

Language Arts, Social Studies, Math

Time Needed:

30 minutes

Materials:

old magazines

scissors

glue

several large pieces of poster board

pieces of a cotton plant (if available)

several different fabric samples

Notes

OBJECTIVES:

The student will be able to:

1. Explain how peanuts grow.
2. Identify ways we eat and use peanuts.
3. Recognize peanuts as a cash crop in Alabama.

BACKGROUND:

Peanuts are a valuable cash crop in Alabama. Alabama supplies the basic needs peanuts must have for successful growth: sandy soil, and long hot summers. Peanuts are a type of legume, like peas and beans, that grows in a pod. The main difference is that peanuts grow in pods underground. When farmers harvest peanuts, they must use a special machine called a “digger,” which digs up the peanut plant. It turns them upside down on the ground so they will dry. Then another machine called a “combine” cuts the peanuts off the plant. Peanuts are then used to make peanut butter, a stable source of protein that many children love.

PROCEDURE:

Setting the Stage

If possible, show students a whole peanut plant that has been pulled up to dry with the peanuts still attached. Ask students if they know what it is. Have them name as many things made with peanuts as they can. Explain that Alabama grows many of the peanuts that supply children throughout the country with peanut butter and other peanut products. A famous Alabamian is George Washington Carver. Dr. Carver was a professor at Tuskegee Institute and developed many products from the peanut.

Activities

1. On the chalkboard or overhead projector, outline the steps of growing and harvesting peanuts.
 - Plowing and planting
 - Checking the crops for growth and insect problems
 - Harvesting - Digging up the peanuts to dry, using a digger; using a combine to cut the peanuts off the plant
2. Have a peanut tasting party. Let children taste a wide variety of peanuts: raw, boiled, honey roasted, salted, and fried. If you have an electric skillet, use a little oil and salt to fry raw peanuts. Fry about five to seven minutes.
3. After students have had the opportunity to taste the peanuts, survey the class and see which kinds they liked the most. Use the chart or floor graph divided into categories according to how peanuts were prepared to record responses. They might glue or tape on peanut shells to mark the graph. Examine the graph and see which kind of peanuts students liked the most and least.

Follow-Up

1. Give each student several empty shells to examine. Ask them to look at the shells and see if they can imagine them as a landform. What kind of land do you see - mountains, hills, valleys?
2. Let students use the peanut shells to make a picture or person. Have them glue the shells on paper and use crayons or markers to add features and a background.
3. Have students write or dictate sentences about the growth and harvesting of peanuts. Divide the students into cooperative groups to illustrate the process and hang it in sequence as a mural.

Grades:

K-2

Subjects:

Science, Social Studies, Math, Music

Time Needed:

60 minutes

Materials:

various kinds of peanuts: whole, raw, boiled, honey roasted, salted
peanut shells
electric skillet
graphing chart or floor graph

4. Find facts about the peanut - open the shell, take out peanuts, place a fact inside, reclose, and tape shut. Children then take turns reading their peanut facts to each other. Also place add and subtract problems inside the peanuts.

EXTENSIONS:

1. Discuss the process of making peanut butter from peanuts.

Make peanut butter.

- 2 cups of roasted peanuts with shells and skins removed.
 - Pour peanuts into blender.
- Add 4 teaspoons of vegetable oil.
- Add 1 teaspoon of salt
- Blend in blender until smooth

2. Sing the chant :

“Peanut Butter”

REFRAIN: Peanut-Peanut Butter Jelly
Peanut-Peanut Butter Jelly

First you take the peanuts and you pick'em, you pick'em, you pick'em, pick'em, pick'em.
Then you take the peanuts and you crack'em, you crack'em, you crack'em, crack'em, crack'em.

REFRAIN

Then you take the peanuts and you crush'em, you crush'em, you crush'em, crush'em, crush'em.
Then you take the peanuts and you spread'em, you spread'em, you spread'em, spread'em, spread'em.

REFRAIN

Then you take the jelly and you spread it, you spread it, you spread it, spread it, spread it.
Then you take the sandwich and you smush it, you smush it, you smush it, smush it, smush it.

REFRAIN

Then you take the whole thing and you eat it, you eat it, you eat it, eat it, eat it.

ORIGINAL DEVELOPMENT RESOURCES:

Armento, B.J., Nash, G.B., Salter, C.L., & Wixson, K.K. (1991). *Some people I know*. Atlanta, GA: Houghton Mifflin Company.

Westcott, N.B. (1987). *Peanut butter and jelly: A play rhyme*. New York, NY: Dutton's Children's Books.

Nelson, M. (2002). *Carver: a life in poems*. New York, NY: Front Street.

Questions for Peanut Shell Activity

1. Where are peanuts grown in the United States?
a. North b. South c. East d. West
2. What part of the plant grows from the flower into the ground?
(It is like a vine.)
a. stem b. shoot c. peg d. leap
3. Name one thing a peanut needs in order to grow?
a. sunlight b. grocer c. South
4. How many used did Dr. Carver find for peanuts?
a. 25 b. 100 c. 300
5. Where do peanuts grow?
a. above ground b. below ground
6. Which one of these states grows peanuts?
a. Georgia b. New York c. Oregon
7. How many peanuts are grown every year?
a. millions of tons b. millions of pounds c. hundreds of tons
8. What is another name for peanuts?
a. rollers b. goobers c. ground peas
9. The protein in peanuts gives you energy. Where does it come from?
a. shell b. oil c. nut

Notes