RAIN, RAIN GO AWAY

K-2

OBJECTIVES

At the end of this lesson, the students shall be able to do the following:

1. Describe, orally or in writing, how water moves in a never ending circle or cycle; from sky to Earth, over and over again;

2. Name and explain, orally or in writing, the steps in the water cycle; and

3. Give an oral or written definition of the new terms: condense, evaporate, gas, hail, liquid, sleet, snow, solid, and water.

SUBJECTS:
Science, Music, Math, Geography, Language Arts, Art

TIME:
25 minutes

MATERIALS:
tea kettle or sauce pan
1/4 filled with water
hot plate
aluminum pie pan
ice cubes
large zip-loc baggie
water
globe

BACKGROUND INFORMATION

Water falls from the sky to the Earth in different forms; rain, snow, sleet, and hail. Some of the water soaks into the ground and becomes ground water. The rest flows into streams, lakes, rivers, and oceans. The sun's heat changes some of the water to a gas called water vapor. This process is called evaporation. The water vapor rises into the sky and forms a cloud. Clouds are made of trillions of water droplets. The droplets are tiny and light enough to float. When the clouds get very cold, the water droplets freeze and get so heavy they can't float anymore. They fall out of the cloud and melt on the way down to Earth. They fall as rain. If the air is too cold on the way down, the drops of water will fall frozen as snow or sleet.

Terms

condense: water vapor that changes into a liquid.

evaporate: to convert or change into a vapor.

gas: substance having no fixed shape.

hail: precipitation in the form of hard pellets of ice or hard snow.

liquid: a free flowing substance that borrows the shape of its container.

sleet: precipitation consisting of generally transparent frozen or partially frozen raindrops.

snow: solid precipitation in the form of white or translucent ice crystals of various shapes originating in the upper atmosphere as frozen particles of water vapor.

solid: a hard substance that keeps its own shape.

water: a clear liquid, solid, or gas made up of tiny molecules of two parts hydrogen and one part oxygen.

ADVANCE PREPARATION

A. Gather information.

PROCEDURE

I. Setting the stage

A. Sing the song:

HERE COMES THE RAIN by Amy Pochodaj
(To the tune: The Green Grass Grows All Around)

Here comes the rain— (Echo.)
The wettest rain. (Echo.)
The heaviest rain. (Echo.)
That you ever did see. (Echo.)
And the water keeps going all around, all around.
And the water keeps going all around.

And from that rain
There is a puddle—
The biggest puddle
That you ever did see.
Puddle from the rain.
And the water keeps going all around, all around.
And the water keeps going all around.

Here comes the sun
To dry the puddle—
The hottest sun
That you ever did see.
Sun dries the puddle, puddle from the rain.
And the water keeps going all around. . . .

Now forms the cloud
Up in the sky—

The biggest cloud
That you ever did see.
Cloud from the puddle, when the sun dries the puddle, puddle from the rain.
And the water keeps going all around. . . .

Here comes the rain—
The wettest rain.
The heaviest rain
That you ever did see.
Rain from the cloud, cloud from the puddle, when the sun dries the puddle, puddle from the rain.
And the water keeps going all around. . . .

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II. Activity

A. Place ice cubes in the tea kettle or sauce pan. Discuss that ice is water in the solid form.

B. Heat the ice. Observe and discuss the change from a solid to a liquid. Discuss with the students that the liquid takes the shape of the container. The solid form, ice, did not.

C. Boil the water until it changes into water vapor. A cloud will form just beyond the spout of the kettle or above the sauce pan. The clear area nearest the spout or pan is steam or water vapor.

D. Hold the aluminum pie pan that is filled with ice cubes in the cloud area.

E. Ask the students to watch beneath the pie pan and comment on what is happening. It is raining!

F. Ask the students the question: "What happened when the warm water vapor touched the cold pan?" (The water vapor was cooled and condensed into water drops that got heavy and fell.)

III. Follow-Up

A. Place 1/2 cup of water in the bottom of a zip-loc baggie. Make sure no water gets on the sides of the bag. Tell the students that this is a pretend puddle that will help us know what happens to the water in a real puddle.

B. Tape the bag that is zipped tight to a sunny window.

C. Watch the bag for several hours. Let the students feel the water through the bag. What does it feel like? (Warm)

D. Tiny drops of water will form on the sides of the bag. Condensation has occurred. Tell the students that clouds are made of tiny water drops.

E. Hold a bag of ice against the top of the bag. Tell the children that the ice will do the same thing as cool air high in the sky. More condensation will occur. Some drops will get heavy and fall like rain as the students watch.

F. Within the plastic bag you can continue the rain cycle for as long as you like.

G. When you are finished with the experiment, open the bag. Ask the students to predict what they think will happen to the water. Mark the water level on the bag with a permanent marker each day. Record the water level until the water is gone. Discuss the graph on the bag with the children. Ask: "What makes more water evaporate some days and not others?" (temperature) Discuss.

IV. Extensions

A. Read What Makes It Rain by Keith Brandt. Give the students pre-cut raindrops. Ask the students to use their imaginations and write and illustrate on their raindrops what they were and where they had been before they were a raindrop.

B. Watch and listen to a televised weather broadcast. Using a globe or map, point out places where it is raining. Discuss the fact that it does not rain everywhere at the same time.

C. Read the story Rain Talk by Mary Serfozo. Using a water table or dish pan and a variety of objects such as strainers, funnels, slit spoons, plastic medicine droppers, and watering cans, let the children rain on various objects such as tin cans, wood blocks, plastic butter tubs, or milk cartons. Let the children describe the "rain talk" or different sounds they hear.

D. Rain Collage. Have the students create a rain scene by gluing confetti or paper hole punch-outs on paper. Let the students cut from magazines things that benefit from rain and glue them on paper. Examples: animals, people, plants, etc.

RESOURCES

Pochodaj, Amy, Here Comes the Rain, Humpty Dumpty Day Care Center, 1212 Washtenaw, Ypsilanti,MI, 48197.

The Education Center, The Mailbox, Pre-K, April/May, 1995.

Victor, Edward, Science For the Elementary School, Macmillan Publishing Company, 1980, p. 385.