



Floods

K-2

Flood Science

LESSON PLAN 1

Water Science

It is important for young children to understand the water cycle in order to understand the science behind floods and flash floods.

Key Terms and Concepts

condensation	ocean	river
evaporation	precipitation (rain,	stream
lake	sleet, snow, hail)	water cycle

Purpose

To have the students demonstrate and illustrate the water cycle

Objectives

The students will—

- Use *You're the Scientist: The Water Cycle* to observe condensation and evaporation.
- Apply the concepts in their demonstration to the rain outside and understand the term “water cycle.”
- Find examples of evaporation and condensation in their homes. (Home Connection)
- List local bodies of water and find them on a local map.
- Discuss and illustrate local geography and the role it plays in the water cycle in their area.
- Find out how the water from their homes and school returns to the water cycle. (Linking Across the Curriculum)

Activities

“The Water Cycle”

“Water and Geography”



Visit the American Red Cross Web site
at www.redcross.org/disaster/masters



Floods K-2

LESSON PLAN 1 Water Science

Materials

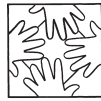
- Chalkboard and chalk or chart paper and markers

For each group or for a whole-class demonstration:

- *You're the Scientist: The Water Cycle*
- Plastic sandwich bag with easy closure
- Soil
- Small amount of water



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"The Water Cycle"

SET UP 30 minutes CONDUCT 30–45 minutes

Science: Earth Science

TEACHING NOTE If your class has already been introduced to the concept of the water cycle, either skip this lesson or use it as reinforcement.

1. Talk with the children about what they see when it is raining: rain puddles, water streaming down the windows, water drops on leaves and things outside and so forth. Ask the students where they think the water goes when the rain stops. Tell the students they are going to be scientists who discover where the water goes.
2. Distribute *You're the Scientist: The Water Cycle*. Depending on the time available and your students' abilities, complete the activity sheet as a small-group activity or as a demonstration for the whole class.

Answers to *You're the Scientist: The Water Cycle*

Water drops formed at the top of the bag. When the droplets got bigger, they fell down the sides of the bag back into the soil. This cycle will continue.



Wrap-Up

After completing the demonstration, have the students discuss their observations.



How do their observations apply to the rain outside? (The sun warms the water in the soil and in the streams and rivers; it rises and cools to form clouds; water droplets fall back to earth as rain or snow.)



Write the words "evaporation" and "condensation" on the chalkboard. Discuss their meanings and ask the children where each of these occurred in their demonstration. (Water from the soil in the bag evaporated in the sun and rose as water vapor to the top of the bag. It cooled and condensed to form droplets that fell back to the soil in the bag.)



Home Connection

Have the students work with their families to find examples of condensation and evaporation in their homes. For example, water boiling, steam from soup rising or steam from the shower condensing on a mirror or window. Share these examples in class.



Floods

K-2

LESSON PLAN 1

Water Science

Materials

Large, local map, showing rivers, streams, ponds, lakes or other bodies of water



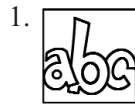
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"Water and Geography"

SET UP 5 minutes CONDUCT 30-45 minutes

Science: Earth Science; Social Studies: Geography



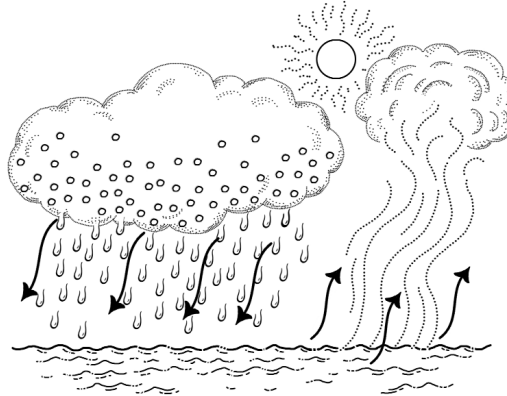
1. Talk with the class about where they find water in their area: rivers, streams, ponds, lakes and the ocean.
2. Using a large map of the area, guide the students to name the areas of water.



Wrap-Up

Explain the roles these areas of water play in the water cycle. Select one body of water and work with the class to include it within a water cycle illustration.

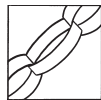
For example:



TEACHING NOTE Older students can make their water cycle illustrations independently. Make sure they label the steps in the cycle and are able to share them with the class.



Make sure the students include within the class drawing the following terms: condensation, cloud, one type of precipitation, evaporation and the name of a body of water.



Linking Across the Curriculum

Science: Earth Science; Social Studies: Government

Challenge the students to find out how the water from their homes and school returns to the water cycle. Invite a representative from your local government to class to talk with the students about water lines and water treatment, or take a field trip to a water treatment plant in your area or water authority where there may be educational exhibits, dioramas or maps of underground waterways.



You're the Scientist: The Water Cycle

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Name _____

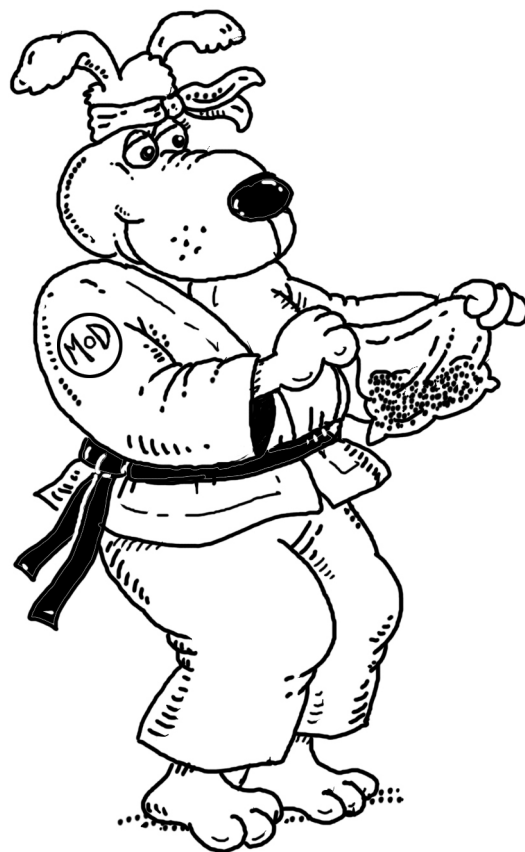
Directions: The water cycle plays a big role in floods. You are the scientist. Follow the steps below to demonstrate the water cycle.

What you need:

- Plastic sandwich bag
- Soil
- Small amount of water
- Tape

What you do:

1. Put the soil in the bottom of the plastic bag.
2. Add just enough water to the soil to make it damp.
3. Close the bag tightly.
4. Tape the bag to a window in the sun.





You're the Scientist: The Water Cycle

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5. Draw a picture of the bag in the window.

6. Watch the bag for a few minutes.

7. Draw a picture of what happens.

