FACTivity

Time Needed

- One class period for research (or assigned as homework)
- One class period for the FACTivity

Materials (for each student or group of students)

- Water cycle cube (see template on page 120)
- Plain or lined paper
- Pencils
- Scissors
- Tape or glue

Introduction

In this article, you learned about groundwater and the path water may take as it flows underground. Water may take a number of different paths, depending on the soil type, the type of underground rock, and the slope of the land. Water flow is also dependent upon the climate and recent weather. A drought, for example, may cause water to flow in a different pattern underground from its normal path. Soil water may be taken up by trees and transpired.

In this FACTivity, you will use the knowledge you have gained from the reading "Under Where?" and other articles in this journal, as well as other sources of information about groundwater flow. You will answer the following question: What is one pathway a water droplet may follow as it moves through the water cycle?

Methods

Your teacher will have you work in pairs. To answer the question, you will need to refer to the following water cycle illustrations:

- Figure 1 on page 108,
- Figure 2 on page 108,
- Figure 3 on page 109,
- Figure 4 on page 109, and
- Figure 6 on page 6 of the "Welcome to the *Natural Inquirer* Freshwater edition."

Take a moment now to review these illustrations. You should have a good idea of how water flows in the water cycle, including surface water as well as soil water and deep groundwater. If you need more information, read "Green Means Clean," "What's the Nonpoint?," "Sediment-al Journey," and "Welcome to the *Natural Inquirer* Freshwater edition" section in this *Natural Inquirer*. You may also do research in the media center. Your teacher may assign this reading and research for homework.

Next, you will build a water cycle cube using the template on page 120. Each side of this cube contains a portion of the illustration on page 119 (**figure 17**). Each pair of students should build one cube. Locate the drop of water shown on each side of the cube. Alternatively, all student pairs in the class may take turns using one cube.

Adapted from Liu, F.; Hunsaker, C.; Bales, R.C. 2012. Controls of streamflow generation in small catchments across the snow—rain transition in the Southern Sierra Nevada, California. Hydrological Process, published online in Wiley Online Library, DOI: 10-1002/hyp.9304, http://www.fs.fed.us/psw/publications/hunsaker/psw_2012_hunsaker002_lui.pdf.

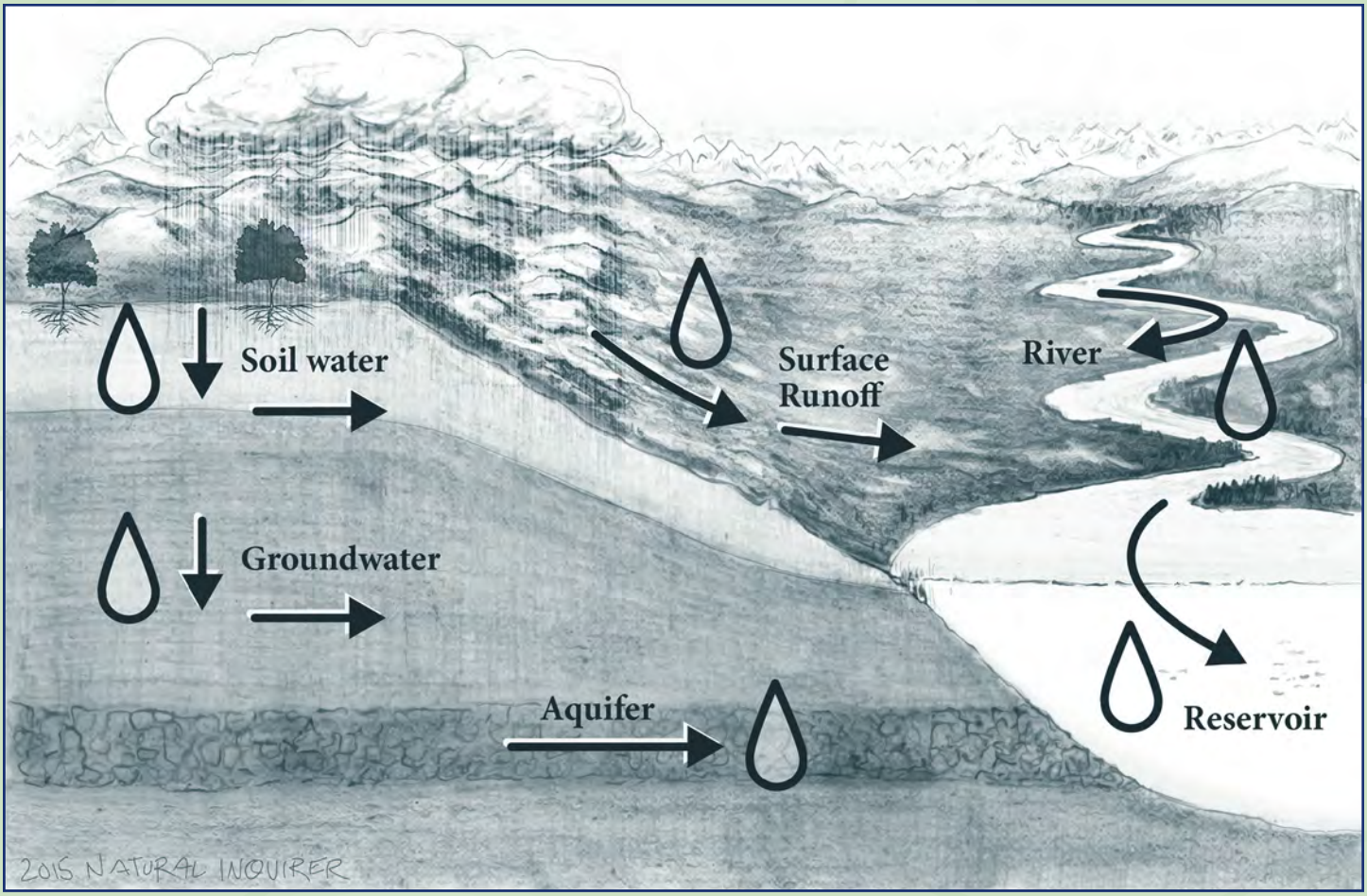


Figure 17. Water drops appear in many places throughout the water cycle. Illustration by Stephanie Pfeiffer.

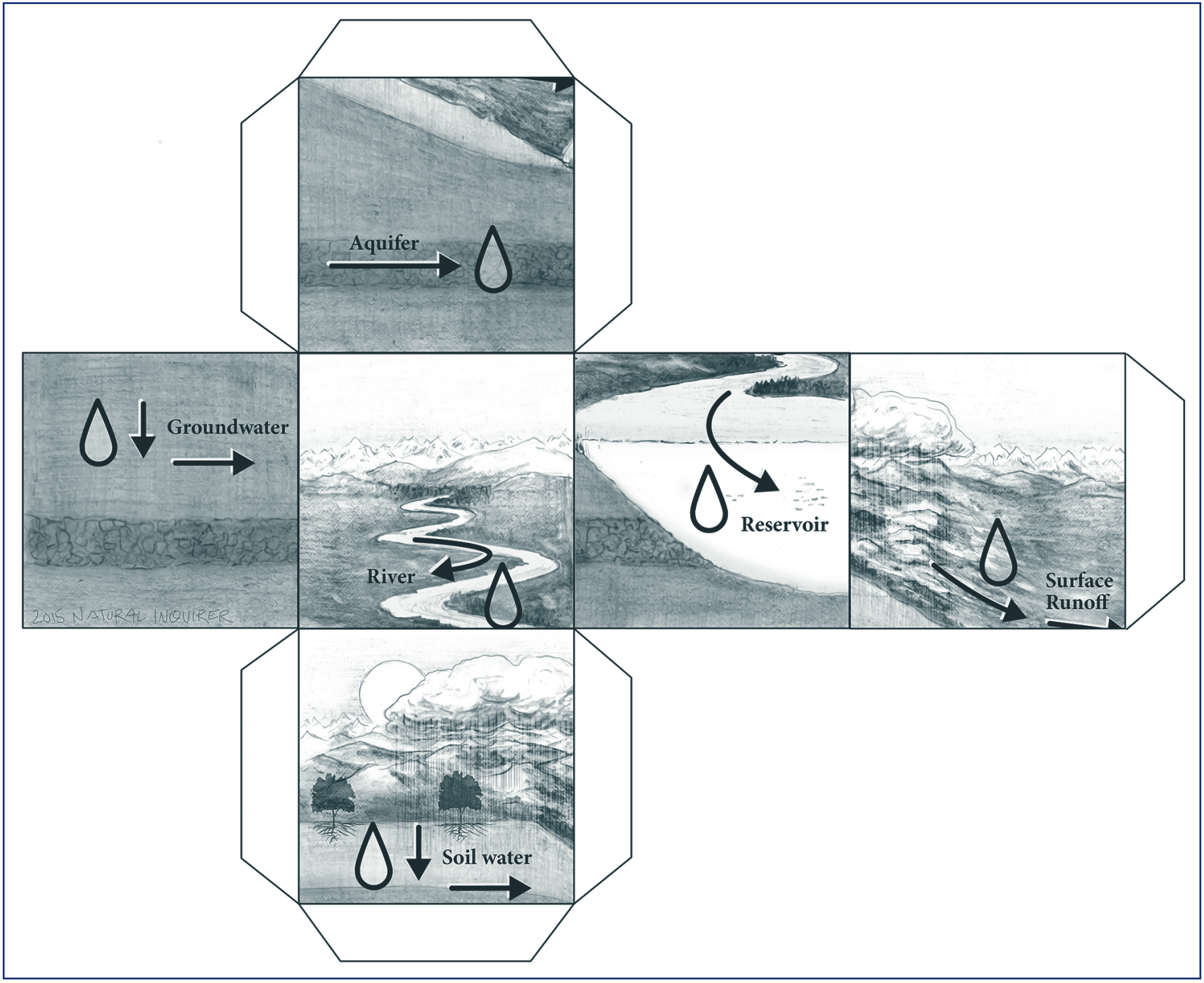
Each student pair will roll the cube. (All student pairs may take turns rolling the same cube.) Each pair will work with whatever portion of the illustration lands on top. Identify the location of the water drop.

The water drop will be located in one of the following:

- In soil water
- In groundwater
- In an aquifer
- In a river
- In a lake or reservoir
- On the soil surface

Using a blank piece of paper, you will outline a story that traces the water drop's journey. Each story begins with the water drop falling from the atmosphere. Trace the water drop's journey to the location shown on the cube, and then eventually back to the atmosphere. Each of the six water drops' journeys might be different. Remember that water is also collected and used by humans, and is used by other animals as a part of the water cycle. See figure 6 on page 6 of this journal.

You may tell your water drop's story in song, rap, narrative, poetry, travel blog, a letter, or other form. Be creative and accurate about the journey your water drop will take.


Aquifer
Groundwater
River
Reservoir
Surface Runoff
Soil water
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