

GROWTH OF A RIVER (MODIFIED FOR ADEED)

INSTRUCTIONS



Science Concept:

Rivers come from mountains.

Objectives:

The student will:

- describe where a river comes from;
- communicate parts of a river; and
- draw a picture of a river.

GLEs Addressed:

Science

- [3] SD2.1 The student demonstrates an understanding of the forces that shape Earth by identifying and comparing a variety of Earth's land features (i.e., rivers, deltas, lakes, glaciers, mountains, valleys, and islands).
- [3] SA1.1 The student demonstrates an understanding of the processes of science by asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring, and communicating.
- [3] SG4.1 The student demonstrates an understanding that advancements in science depend on curiosity, creativity, imagination, and a broad knowledge base by asking questions about the natural world.

Writing

- [K] W1.1.1 The student writes about a topic by writing to express personal ideas using drawings, symbols, letters, or words.

Vocabulary:

bay – a body of water partially enclosed by land but having a wide outlet to the sea

ocean – the vast body of salt water that covers almost three fourths of Earth's surface

river – a large, natural stream of fresh water that flows into an ocean, a lake, or another body of water, usually fed by smaller streams that flow into it

riverbank – the slopes of land bordering a river

sandbar – a bar of sand formed in a river by the action of the currents

source or start – the beginning or origin of a stream or river

Materials:

- Pitcher, gallon-sized (two)
- Water (2 gallons)
- Paper towels or napkins
- Tubs, gallon-sized (two)
- Piece of wood or book (to prop tray and create a slope)
- Chart paper
- Marker
- Sand (10-pound bag)
- Paper (one sheet per student)
- Pencils (one per student)
- Crayons (one box per student)
- *Where the River Begins*, by Thomas Locker

Resources:

Locker, T. (1984). *Where the River Begins*. New York, NY: Dial Books.

Activity Preparation:

Fill two plastic tubs with five pounds of damp sand each. Place a piece of wood or a book beneath one end of each tub to create a slope.

Teacher's Note: An adult helper will be needed for this activity.

Activity Procedure:

Please refer to the assessment task and scoring rubric located at the end of these instructions. Discuss the assessment descriptors with the class before teaching this lesson.

Gear Up

Process Skills: *questioning, observing, and communicating*

1. Ask students what they know about rivers. Write the students' ideas on the board.
2. Read *Where the River Begins* by Thomas Locker. Discuss the story with students.

Explore

Process Skills: *predicting, observing, and communicating*

3. Explain students will help the teacher make models of two rivers. Use the vocabulary words as the models are being built and explored.
4. In one of the tubs with damp sand, ask student volunteers help form a mountain and flatten the ground to be level a distance from the mountain. Use a pencil or finger to create a winding river.
5. In the second box, ask student volunteers help create a model of a mountain with a straight river. Ask students to compare how the river models are the same and /or different. Ask students to make predictions about how and where water will flow when added to the top of each mountain. Write predictions on the board.
6. Using a pitcher, pour water on the mountain in each model. Ask students to explain what happened by drawing their observations on a piece of paper.

Generalize

Process Skills: *describing and communicating*

7. In a class discussion, ask students the following questions:
 - a. Where did the river start in the model?
 - b. Where did the river end in the model?
 - c. What did you observe about the water flow in the *winding* river?
 - d. What did you observe about the water flow in the *straight* river?
 - e. Name some parts of a river.
 - f. What did you learn about rivers today?

Apply

Process Skill: *explaining*

8. Ask students to answer the following question, then record their answers on the board or on chart paper: How does this activity remind you of the river near where we live?

Extension Idea:

Take students on a field trip to see a river. Discuss what they already know and ask students to describe what they see using the vocabulary words they have learned.

Sources:

The American Science Dictionary. (2005). Boston, MA, New York, NY: Houghton Mifflin Co.

Snider, C., & Barrett, K. (1989). *River Cutters*. Berkeley: Lawrence Hall of Science, University of California at Berkeley.

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RUBRIC

Assessment Task:

Ask students to describe how rivers come from mountains by drawing a picture that shows the source of a river. Students may also draw where a river ends. Also, each student should tell an adult about two parts of a river. The adult should label the two parts on the student's drawing.

Rubric

Objective	GLE	Below Proficient	Proficient	Above Proficient
The student describes where a river comes from.	[3] SD2.1	The student does not describe the source of a river.	The student describes the source of a river.	The student describes the source of a river and where it ends.
The student communicates parts of a river.	[3] SA1.1	The student tells an adult fewer than two river parts.	The student tells an adult two parts of a river.	The student tells an adult three or more parts of a river.
The student draws a picture of a river.	[K] W1.1.1	The student doesn't draw a river or draws something else.	The student draws a picture that includes the source of a river.	The student draws a picture that includes the source of a river and where it ends.