

Rivers Run Through It

Students will interpret and label a relief map to answer questions about distance, direction, and natural features along the Hudson River and in New York State.

Objectives: Students will understand:

- how maps serve as representations of a geographic region;
- the locations and relative positions of major landscape features of New York State and the Hudson Valley;
- how to use information provided in written format to interpret information presented visually on a map.

Grade level: Elementary (Grades 3-5)

Subject Area: Social Studies, English Language Arts

Standards:

Social Studies Standard 3

English Language Arts Standard 1

Skills:

- Use a map's compass rose to determine direction.
- Use a map legend to identify geographical features and locations.
- Use a map scale and addition skills to measure distance.
- Read to acquire facts and ideas from text.

Duration: Preparation time: 20 minutes

Activity time: 45 minutes

Materials: Each student should have:

- Reading: From the Mountains to the Sea
- Worksheet: Rivers Run Through It
- Relief Map of New York State
- Pencil
- Ruler
- Access to a large classroom map of the United States

Background:

Rivers, large lakes, and coastal harbors helped to make New York the Empire State. These waterways offered advantages in transportation, trade, settlement, and natural resources.

One of the most important of New York's waterways is the Hudson River. From its beginnings in the Adirondack Mountains, topography directs the Hudson south towards the Atlantic Ocean. It grows larger as other rivers join its flow; the biggest being the Mohawk River. From Troy to New York Harbor, the Hudson is an estuary, a long arm of the sea subject to tides and the upriver press of salty ocean water. Since the estuary is at sea level, large ocean-going ships can sail all the way to Albany.

Students will read a short article about the Hudson, answer questions based on the reading, and locate the river and other major topographic features of New York State on a relief map.

Activity:

1. In advance, have students do the Readings in Hudson River Natural History lesson titled "From the Mountains to the Sea." This can be done in class or assigned as homework.
2. Review with the students what sorts of information might be presented on a map.
3. Hand out the Relief Map of New York State. Have students point out features on this map—the legend, compass rose, and scale—that are common to all maps. Explain how the scale can be used to calculate a distance.
4. Ask how this map may look different from other maps the students have seen. Review the definition of a relief map.
5. Have students do "Rivers Run Through It" in class. It may be useful to have them work in small groups. A map of the U.S. may help students identify bordering states.

Assessment:

- Have students share answers to worksheet questions, or collect and grade sheets.
- Test students' learning by having them fill in labels on blank copy of map.

Vocabulary:

canal: a manmade waterway for boats

cargo: goods or materials carried on a ship

compass rose: on a map, a design that shows directions

estuary: a body of water in which fresh and salt water meet

harbor: a body of water protected and deep enough to be a safe place for ships

landscape: a region's set of landforms, viewed as a whole

legend: a list explaining symbols used on a map

physical map: a map of an area's landforms

scale: on a map, a line marked to show distance

relief map: a map of an area's topography

Resources

Lourie, Peter. *Hudson River: An Adventure From the Mountains to the Sea*. Boyds Mill Press, Honesdale, Pennsylvania: 1998. Ages 9-12.

Rivers Run Through It: ANSWER KEY

Rivers Run Through It

A **physical map** shows the **landscape** of the area covered: its mountains, rivers, and valleys, for example. A **relief map** is a one kind of physical map; it shows the heights and steepness of these features of the landscape. Like all maps, relief maps have a **legend**, a **compass rose**, and a **scale**.

Use the Relief Map of New York State to answer the questions below.

1. The following states border New York. Fill in the blank boxes on the map with the correct state names.

See teacher's copy of map

Pennsylvania New Jersey Connecticut Massachusetts Vermont

2. On the map, major bodies of water are labeled with numbers. Identify each one by writing the proper number next to each name below.

 11 Atlantic Ocean

 9 New York Harbor

 10 Long Island Sound

 7 Hudson River

 4 Lake Champlain

 5 Mohawk River

 1 Lake Erie

 2 Lake Ontario

3. An **estuary** is a body of water in which salty ocean water mixes with fresh water. Estuaries are located near the ocean and connected to it but partly surrounded by land. Three of the water bodies listed in Question 2 are estuaries. Which three are they?

10-Long Island Sound; 9-New York Harbor; 7-Hudson River

4. The Hudson flows through or past three large sets of mountains. They are labeled with numbers on the map. Identify each one by writing the proper number next to its name below.

 3 Adirondack Mountains 6 Catskill Mountains 8 Hudson Highlands

5. Using the compass rose on the map, complete the following sentences by writing in the proper direction—north, south, east, or west.

Example: Vermont is north of Massachusetts.

- Near Kingston, the Catskill Mountains are west of the Hudson River.
- The Hudson flows south from the Adirondacks to New York Harbor.
- Albany is north of New York City.
- Starting near Syracuse, the Mohawk River flows east to the Hudson.

6. Using the scale on the map, estimate the distances below.

- The length of the Hudson from Kingston to Albany **about 50 miles**
- The distance between Syracuse and Albany **about 125 miles**
- The length of the Hudson from the Troy Dam to New York Harbor **about 150 miles**

7. The Erie **Canal** was built so that **cargo** and people could travel by water all the way from Lake Erie to New York City. The canal ran from Buffalo to the Hudson River at Albany, following the Mohawk River for much of its length. Why didn't the canal run in a straight line from Buffalo to New York City?

The land along a straight line route from Buffalo to New York City is too mountainous for a canal. Having boats follow the Mohawk River Valley and then the Hudson was much easier.

Relief Map of New York State

Teacher's Copy

