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

Hudson River Estuary

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.

a. Near Kingston, the Catskill Mountains are __***west***__ of the Hudson River.

b. The Hudson flows __***south***__ from the Adirondacks to New York Harbor.

c. Albany is __***north***__of New York City.

d. Starting near Syracuse, the Mohawk River flows __***east***__ to the Hudson.

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

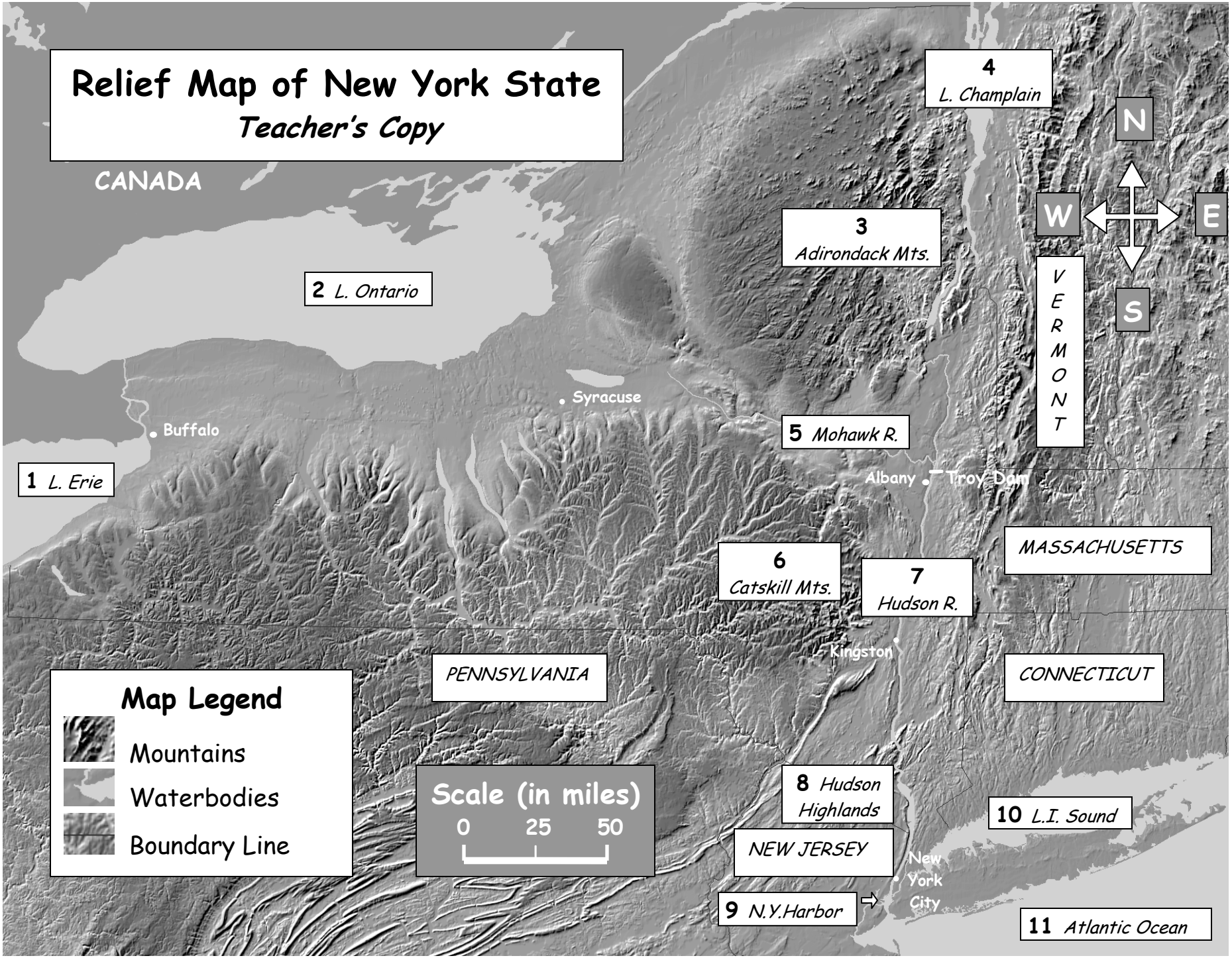
a. The length of the Hudson from Kingston to Albany ***about 50 miles***

b. The distance between Syracuse and Albany ***about 125 miles***

c. 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
CANADA
4 L. Champlain
N
W
E
S
3 Adirondack Mts.
2 L. Ontario
VERMONT
Syracuse
Buffalo
5 Mohawk R.
1 L. Erie
Albany
Troy Dam
MASSACHUSETTS
6 Catskill Mts.
7 Hudson R.
Kingston
PENNSYLVANIA
CONNECTICUT
Map Legend
Mountains
Waterbodies
Boundary Line
Scale (in miles)
0 25 50
8 Hudson Highlands
10 L.I. Sound
NEW JERSEY
New York City
9 N.Y.Harbor
11 Atlantic Ocean