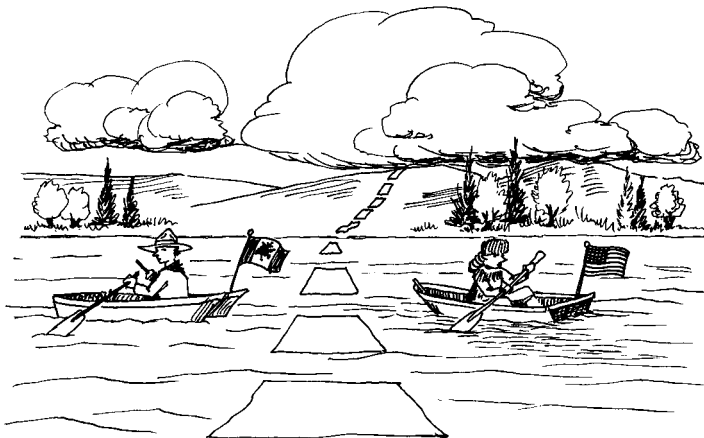


## CHAPTER 4 — Scale and Comparative Size

- A. On the North American continent, of all rivers flowing into the Pacific Ocean, the Columbia River has the largest volume of water. Among all the rivers of North America, only the Mississippi, St. Lawrence, and Mackenzie discharge a larger volume of water.
1. Draw a map of the Columbia from its source in the Canadian Rockies to its mouth near Astoria, Oregon, where it meets the Pacific.
  2. According to the *Encyclopedia Britannica*, the Columbia is 1,240 miles long. According to the *Columbia Encyclopedia*, it is 1,210 miles long. Ocean tides flow up the Columbia a distance of 140 miles upstream from its mouth at the Pacific Ocean.
    - a. What percentage of the length of the river is affected by ocean tides, depending on which of these two sources you consult? Consult other sources to see which listed length is more accurate.
    - b. Convert the distances from miles to kilometers. Is the percentage still the same?
    - c. The Columbia flows first through British Columbia for a distance of about 500 miles before it enters the United States. What fraction of the river's length lies in Canada?
  3. Make a graph showing the comparative lengths of the Mississippi, St. Lawrence, Mackenzie, and Columbia rivers.



B. Lewis and Clark and other early explorers to the Pacific Northwest had little idea where the great cities of the region would develop.

1. Compare the size of the city or town in which you live with any one of the following cities of the Northwest: Seattle, Portland, Spokane, or Boise.
2. How much larger or smaller is your town than the city you chose?
3. What is the approximate population ratio of the two towns (for example, 10 times larger, 20 times)?
4. Explain why you think your town is larger or smaller than the town you compared it with. Take into account geographic factors, for example, location, elevation, access to water, and soil.

C. The Oregon Trail began in Missouri and continued westward as far as Fort Vancouver.

1. Draw a map that shows the Oregon Trail and several of the major modern highways that reach from the Midwest to the Far West.
2. Create a scale model of the Columbia River with the following features: cities along the river, geographic regions and features through which the river flows, major dams, and bridges.

D. Work with a partner and make several sketches of your school environment.

1. Write brief explanations of what each sketch illustrates.
2. On graph paper draw a map to scale of the school grounds, the school building, or a large room in the school such as the gym or cafeteria.
3. Display your work.
4. Explain the differences and similarities of a sketch and a map drawn to scale.

