



■ **Figure 2.8** Points of elevation on Earth's surface are projected onto paper to make a topographic map.

Interpret How many meters high is the highest point on the map?

Topographic Maps

Detailed maps showing the hills and valleys of an area are called topographic maps. **Topographic maps** show changes in elevation of Earth's surface, as shown in **Figure 2.8**. They also show mountains, rivers, forests, and bridges, among other features. Topographic maps use lines, symbols, and colors to represent changes in elevation and features on Earth's surface.

Contour lines Elevation on a topographic map is represented by a contour line. Elevation refers to the distance of a location above or below sea level. A **contour line** connects points of equal elevation. Because contour lines connect points of equal elevation, they never cross. If they did, it would mean that the point where they crossed had two different elevations, which would be impossible.

Contour intervals As **Figure 2.8** shows, topographic maps use contour lines to show changes in elevation. The difference in elevation between two side-by-side contour lines is called the **contour interval**. The contour interval is dependent on the terrain.

For mountains, the contour lines might be very close together, and the contour interval might be as great as 100 m. This would indicate that the land is steep because there is a large change in elevation between lines. You will learn more about topographic maps in the Mapping GeoLab at the end of this chapter.

Index contours
On maps, some contour lines are thicker than others. These are called index contours. They are used to determine elevations. If you look at a map, you can determine the elevation of an index contour by looking at the number indicated on the map and index contour on this page.

Reading Check
If you look at a map with a contour interval of 100 m, how far apart would the contour lines be for an elevation of 1000 m?

Depression contours
Some contour lines, such as volcanic craters, represent surrounding land. These lines represent such features. On a map, depression contours have a small circle with a dot in the center. This line, to indicate a depression, indicates a low point in the terrain.

PROBLEM

Calculate

How can you determine the elevation of a slope? Calculate the change in elevation on a map by the contour interval. Use the map to find the elevations, and calculate the change in elevation.

Analysis

1. Determine the elevation of Point B.
2. Record the elevation of Point C.
3. Calculate the change in elevation from Point B to Point C.
4. Explain the change in elevation from Point B to Point C.