Map Scale

Geographer's Notebook

Maps are useful for communicating information about places because they are miniature models of the great big world. You might have seen maps that show a zoo, a city, or a country. Maps can even show the whole world on one sheet of paper. Maps do this by shrinking the size of things in the real world. A map scale tells you how to translate between the map and the real world.

Graphic scales, verbal scales, and representative fractions can all be used to give a map's scale. For example, let's look at the graphic scale on page 9 of the atlas.

A. How many kilometers does the entire graphic scale represent on this map?	
B. How many centimeters long is the entire graphic scale if you measure with a ruler?	
As a verbal scale, you could say… 1 centimeter equals $\frac{\quad}{(A \div B)}$ kilometers.	

If we compare these distances, we can calculate the scale of the map and express it as a representative fraction. Let's see how it works.

Convert 200 kilometers to centimeters, and you get 20,000,000 cm!
Divide that by the length of the graphic scale, and you calculate the representative fraction:
1 : 3,571,429
Most of the maps in the atlas are created at this scale so that the state of California can fit onto one page. These are small scale maps.

Zoom in! Large scale maps show less area but more detail. **Check out pages 44 and 45 of the atlas.**

Which is larger scale, the map on page 44 or the maps on page 45? How do you know?	
Which one of the maps on page 45 is the largest scale? How do you know?	
Can you give an example of a large scale map you used outside of school?	

Map Scale (cont.)

Geographer's Notebook

Zoom out! Sometimes we want a complete picture to see how things fit together. Small scale maps show larger amounts of area but can leave out many details.	
Check out pages 12 and 13 of the atlas. Which map shows a larger amount of the Earth's surface? How is this helpful in understanding the topic of that page?	
Check out pages 20 and 21 of the atlas. Which map is a smaller scale? How is the smaller scale map helpful in understanding the topic of that page?	
Check out pages 24 and 25 of the atlas. How many different scales are used on the maps on these two pages? Which map is the smallest scale?	

Let's practice. **Go to page 17 of the atlas, and measure these distances using the graphic scale.**	
How many miles between San Francisco to Santa Cruz?	
How many kilometers between San Diego and Palm Springs?	
How many miles between Redding and Bakersfield?	
What is the distance in kilometers from Fresno to the nearest coastline?	