



Size It Up

● Standard maps of the United States make it easy to compare the relative land area of each state. Using these maps, it's clear that Montana is much larger than Connecticut. These maps don't tell you anything about population, however. To find that information, you need to look at a special purpose map that uses census data.

The We Count! wall map is one example. It uses color and numbers to show population data from the 1990 Census while maintaining geographical accuracy.

The **cartogram** at the top of the next page is another kind of special purpose map. In a cartogram, the size of each state is not related to the size of the land area. The mapmaker isn't concerned with the accuracy of boundaries or land areas, but does preserve the shapes and positions of geographic locations. This cartogram was specially drawn so that the size of each state is **proportional** to the number of people who live there. At a glance, you can easily see the relative size of each state's population.

Montana, due to its small population, is shown much smaller than it appears on a standard map. The small state of Connecticut looks much larger. Texas, which has both a large land area and a large population, is shown more or less the same size as it would be on a standard map. Using the cartogram and the standard map, you can draw conclusions about state population density.

● Use the two maps on page 5 (the U.S. Population Cartogram and the Standard U.S. Map) to answer the following questions:

1. Which state has the largest population?

2. Which state has a larger population, West Virginia or Pennsylvania?

How can you tell?

3. Rank these states according to the size of their populations, from highest to lowest: South Dakota, Illinois, New York, Kansas.

1. _____

2. _____

3. _____

4. _____

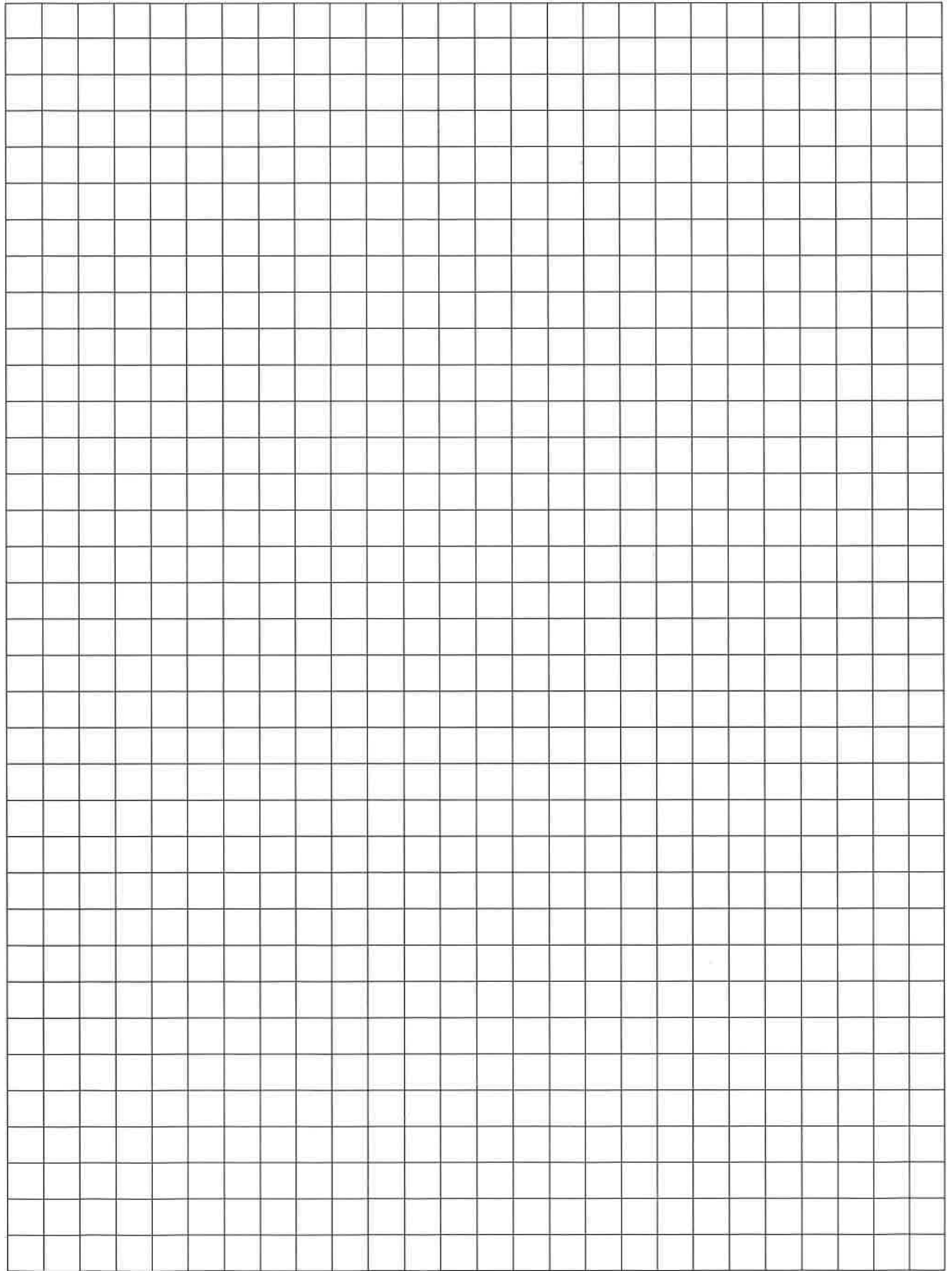
4. List a state that is much larger on the cartogram than on the regular map.

5. Find your own state on the cartogram. Does it appear smaller or larger relative to its size on the standard map?

6. Find a densely populated state by comparing the cartogram to the standard U.S. map.

7. Name a sparsely populated state other than Montana.

8. Based on the cartogram, which three states would you conclude have the most U.S. representatives?



Handout 5-F

How to Make a Cartogram

Adapted from: Making a Cartogram by Chuck Dwelley, An Educator's Reference Desk Lesson Plan, #:AELP-GGR0021

Cartograms are chart maps that present statistical information. On a cartogram, sizes of geographic areas are changed to show the statistical information. For example, on a cartogram about rainfall, an area that gets more rain would be bigger than one that gets less rain.

Steps:

1. Obtain a listing of the data to be displayed. For example, World Population in 2010 (estimated).

CONTINENT	Population	Population by 10 million (Scale)
Africa	1,033,043,000	103
Asia	4,166,741,000	416
Europe	732,759,000	73
South America	588,649,000	58
Northern America	351,659,000	35
Oceania	35,838,000	4
World	6,908,688,000	

Source: UN Statistics Division, Department of Economic and Social Affairs. "World Population Prospects: The 2008 Revision."

2. Determine a scale. In the example above we will use one square unit of area per 10 million population. For example, Africa will cover 103 units or squares in the graph paper, and Oceania will cover 4 units in the graph paper.
3. Keep regions, in this case continents, in their approximate locations, making a map showing the data graphically. The distortions will demonstrate the data.
4. Label the cartogram. Be sure to identify the scale used on your map.