Name _____ Date _____

Summary: The Geographer's Tools

Maps and Globes

Geographers have many tools to help them learn about Earth. Today's knowledge and technology allow a cartographer to make maps that give a detailed and accurate picture of the world. Both maps and globes show Earth and its features. A globe is a good model of the world because it has three dimensions. It shows Earth's actual shape. However, globes are hard to carry around. Maps can be folded, carried, hung on a wall, or printed. However, because maps show the world in two dimensions, they are not perfectly accurate. These are some of the problems that cartographers face.

General reference maps are used to locate a place. They show natural and human-made features. Thematic maps, such as population maps, focus on one specific idea or theme. Pilots and sailors use nautical maps or charts to find their way through air and over water.

The different ways of showing Earth's curved surface on a flat map are called map projections. All projections distort Earth. Other projections distort shapes. Many years ago, the Mercator projection was most often used for maps of the world. Now, the Robinson projection is used because it gives a more accurate picture of the world.

Maps, Charts, and Graphs

Along with maps, geographers use charts and graphs to display and compare information. One example is a graph about the world's population. Such a graph shows facts quickly and clearly. Maps, charts, and graphs can show the same information in much less space than words.

Mapmaker's Tools

Advances in technology have helped people locate their position on Earth. The magnetic compass is used to figure out direction. The sextant and the chronometer help sailors find their ship's latitude and longitude. The Global Positioning System (GPS) helps people on land, at sea, or in the air pinpoint their exact position.

Before You Read

Find and circle each vocabulary word.

cartographer *noun,* a mapmaker

thematic map *noun,* a map that focuses on one particular idea or theme

map projection *noun,* Earth's curved surface on a flat map

After You Read

REVIEW **What are the main problems faced by cartographers?** Highlight two problems faced by cartographers.

REVIEW **How do maps, charts, and graphs differ from words in explaining geographical information?** Underline the sentence that tells how maps, charts, and graphs differ from words in explaining geographical information.

REVIEW **What are some of the technological advances that ha<None>ve been made in determining location?** Circle the sentences that tell about the technological advances that help people determine their location.