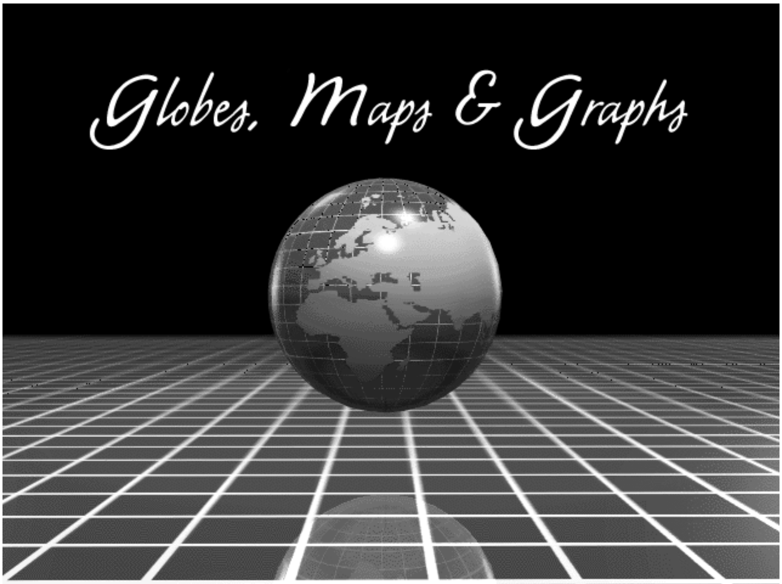


From The Series

Geography Basics

Teacher's Guide Written by
Barri Golbus

Produced by

COLMAN COMMUNICATIONS CORP.

Table of Contents

GLOBES, MAPS & GRAPHS:

Geography Basics

Running Time: 24 minutes

PROGRAM OVERVIEW

Intended Audience and Uses

Globes, Maps & Graphs, the first program in the ***Geography Basics*** series, is designed for social studies students in grades 4-8. The concepts in this video are found in virtually all leading geography texts at the upper elementary and jr. high-middle school levels. Moreover, the material presented in ***Globes, Maps & Graphs*** constitutes a key portion of the NCSS (National Council for the Social Studies) recommendations for the program's target grade levels.

Program Synopsis

The video begins by showing various technologies that have allowed us to better understand the complexities of the earth. The narrator mentions that there are several devices that help us quickly understand those complexities. One is the globe. Scales used on globes are explained in detail, as are directions. Parallels of latitude and lines of longitude are discussed, including the Tropic of Capricorn and Tropic of Cancer and the Arctic and Antarctic circles. A youngster shows how to find a place on a globe using the grid system composed of latitude and longitude lines. The second portion of the program discusses maps – specifically, various map projections, special purpose maps, and keys and legends. The discussion also covers how to find places in atlases, and how to employ edge letters and numbers when finding places on small-scale online maps. The third section of the program discusses bar graphs, segmented bar graphs, single and multiple line graphs, circle graphs and pictographs. Geographic examples are shown and interactive sections allow students to test their knowledge of the information presented.

VIEWER OBJECTIVES

After viewing this video and participating in the suggested activities, viewers should be able to do the following:

1. Find places on maps and globes using intersecting latitude and longitude lines.
2. Name three types of map projections and tell the benefits and shortcomings of each.
3. Discuss the colors and symbols used on special purpose and political maps.
4. Demonstrate an understanding of scale.
5. Read and interpret bar graphs, line graphs, circle graphs and pictographs.

The producers encourage you to make adaptations and changes to the following lesson plan whenever you feel it will enhance your students' learning experiences. Only by tailoring the material to your unique classroom situation will you be able to maximize the educational experience afforded by these materials.

SUGGESTED LESSON PLAN

Introduce the Program

Well in advance, have your students take the ***PRE-TEST,*** which can be used to evaluate their knowledge of the material. This assessment will help with your lesson preparation. After determining your students' level of understandings and competencies, begin a discussion by asking, "Why are things sometimes difficult to understand?" Is it because we haven't learned about them yet? Are some things more difficult to understand than others? Why? Is it because they are more complex? Discuss the word "complex." Look up the word in a dictionary. One definition is "A whole made up of complicated and interrelated parts." Tell the class that our world is very complex – it, too, is made up of many complicated and interrelated parts. However, there are devices that we can use to help us sort out and understand those complexities. If we know how to use those devices, we can obtain a much better understanding of the earth.

Pre-Viewing Activities

Either pass out or make an overhead transparency of ***LEARNING GOALS***. Discuss each item, making certain the class understands the concepts that will be presented in the video. Next, hand out the ***VOCABULARY LIST*** and have the class complete this exercise either as individual desk work, as a class activity or in small groups. If your students have access to computers, they can look up the words at *www.onelook.com* or the Encarta online dictionary, *http://dictionary.msn.com/,* which has audio files that give word pronunciations. Scientific and geographic terms can be found in the specialty dictionaries at *www.yourDictionary.com*. Finally, pass out the ***VIEWER'S***

CONCEPT GUIDE. Have the students read the questions and tell them that they will be expected to fill in the blanks after the video has been viewed. At three places during the presentation, a stop point is designated by the"🗐" symbol. At each stop point, teachers are encouraged to hand out a recommended work sheet that enhances an understanding of key concepts presented in the sequence just viewed.

View the Video

Total viewing time is approximately 24 minutes. Teachers are encouraged to pass out the following masters at each stop point: ***USING GLOBES*** after the first stop point; ***USING SMALL SCALE MAPS*** after the second; and ***GRAPHS*** after the third. *Note: Students will need a ruler to complete the* ***SMALL SCALE MAPS*** *exercise*. The work sheets may be done as individual desk work, or as a small group or class activity. It is also suggested that the entire presentation be replayed a second time, as a review, before giving the ***POST TEST***.

Post-Viewing Activities

If you have handed out the three blackline masters mentioned above, and not yet reviewed them, please do so now.

Description of Blackline Masters

PRE-TEST – An assessment tool that helps you determine the level of your classroom presentation.
LEARNING GOALS – Delineates the concepts students are expected to learn. Also lists behavioral objectives.
VOCABULARY LIST – Presents terms that your students will need to know to fully understand the video.
VIEWER'S CONCEPT GUIDE – Focuses on the main information in the program to help your students learn all major concepts.

USING GLOBES – Gives practice using globes.
USING SMALL SCALE MAPS – Gives practice using small scale maps.
GRAPHS – Gives practice using bar, line, circular and picture graphs.
POST TEST – An assessment tool that allows you to determine the level of comprehension and retention of key material.

ANSWER KEY

PRE-TEST

1. F ◆◆◆ 2. F ◆◆◆ 3. F ◆◆◆ 4. T ◆◆◆ 5. F ◆◆◆ 6. T ◆◆◆ 7. F ◆◆◆ 8. F ◆◆◆ 9. T ◆◆◆ 10. T ◆◆◆ 11. T ◆◆◆ 12. T

VOCABULARY LIST

1. 66 ½^0 S. ◆◆◆ 2. 66 ½^0 N. ◆◆◆ 3. A reference line in a grid system ◆◆◆ 4. Main directions; north, south, east and west ◆◆◆ 5. Complicated ◆◆◆ 6. Factual (usually statistical) information ◆◆◆ 7. The length of a straight line through the center of an object ◆◆◆ 8. A lack of proper proportion ◆◆◆ 9. 0^0 0'; dividing line that separates northern and southern hemispheres ◆◆◆ 10. Half a sphere ◆◆◆ 11. Conical projection; normally used to show middle latitude areas ◆◆◆ 12. East-west lines on a globe or map ◆◆◆ 13. North-south lines on a globe or map ◆◆◆ 14. Lands at or near sea level ◆◆◆ 15. Where map information and explanations are given ◆◆◆16. (same as 15) ◆◆◆ 17. Projection devised by Gerardus Mercator ◆◆◆ 18. Line of longitude, north-south line on a map and globe ◆◆◆ 19. A measurement standard based on the decimal system ◆◆◆ 20. Northernmost point on earth ◆◆◆ 21. Always the same distance from one another ◆◆◆ 22. The relation in size (or quantity or amount) between two things ◆◆◆ 23. Mathematical statement that shows the relationship between distances on a map or globe and the corresponding distance in the real world ◆◆◆ 24. The southernmost point on earth ◆◆◆ 25. The act of raising crops, plowing ◆◆◆ 26. 23 ½^0 N. ◆◆◆ 27. 23 ½^0 S. ◆◆◆ 28. Area between Tropic of Capricorn and Tropic of Cancer ◆◆◆ 29. A high land area, normally away from an ocean or sea.

VIEWER'S CONCEPT GUIDE

1. ratio
2. how many of the model are needed to equal the real thing
3. north, south, east, west
4. 70
5. 23 ½^0 S, 23 ½^0 N
6. the middle latitudes
7. 0, 0
8. directions
9. countries
10. letters and numbers
11. the basis of comparison
12. The whole is divided

USING GLOBES

1. Indonesia
2. Madagascar
3. Mascal, Dacca, Canton
4. La Grange, Manila
5. Noginskiy
6. Approximately 2,140 miles (La Grange is located at approximately 18^0 S. and Manila is at about 14^0 N. Thus, they are about 32^0 from each other. (Since there are 70 miles between each line of latitude, the formula used would be 32 x 70 miles = 2,140 miles).
7. Mascal
8. Canton (China)

USING SMALL SCALE MAPS

1. Galleria Mall
2. Weston Park
3. Approximately 2.75 miles
4. Approximately 20 minutes
5. Bristol Cir.
6. F-10
7. West Shore Dr. and Queen Ave. S.

GRAPHS

Part I

1. segmented horizontal bar
2. horizontal bar, vertical bar and segmented vertical bar
3. Russia
4. 90-95 million metric tons
5. United States

Part II

1. line
2. multiple line
3. May
4. June

5. approximately 4 feet

Part III

1. circular or pie
2. 25 million
3. Service
4. transportation and communication
5. 12 ½ million

Part IV

1. pictograph or picture graph
2. 10
3. Lee
4. 80
5. 15

POST TEST

Part I

1. F ◆◆◆ 2. T ◆◆◆ 3. F ◆◆◆ 4. F ◆◆◆ 5. T ◆◆◆ 6. F ◆◆◆ 7. F ◆◆◆ 8. T ◆◆◆ 9. T ◆◆◆ 10. T

Part II

1. b ◆◆◆ 2. e ◆◆◆ 3. a ◆◆◆ 4. d ◆◆◆ 5. c

Part III

1. about 100 million metric tons
2. Russia
3. 90 million
4. Dacca
5. equator
6. the Tropic of Cancer
7. Minnesota Dr.
8. W. 80th St. (or W. 77th St.)
9. 15
10. 10

Part IV

1. b.
2. d.
3. a.
4. a.
5. d.
6. c.
7. b.
8. d.
9. a.

TRANSCRIPT OF THE VIDEO

In recent years, scientists have used many advanced technologies that help us better understand the earth's surface.

Satellites, ships and research facilities receive and send all kinds of information used by researchers worldwide – information that shows how enormously complex our planet is.

And it's huge: the earth's surface area covers almost 197 million square miles. (That's more than 509 million square kilometers).

Fortunately, there are a number of devices that help us quickly understand the many complexities of our earth.

One that's been around a long time is the globe.

Globes, which are small models of our planet show us where water and land are located. They also show their proper shapes, but in a much smaller version, of course.

Most globes tell us how much smaller they are on their "scale," which is found in its legend. Scales are stated as a ratio – here, rounded off, one to 42 million.

The first number of a ratio – generally, a "one" – represents the real thing. A colon is the ratio sign.

The second number – we'll call it "n" for now – tells you how many of the model are needed to equal the real thing.

If the real thing and its model have a one to one ratio, for example, it takes only one of the model to equal the real thing.

But if the ratio is one to four, it takes four of the model to equal the real thing. Stated as a ratio – one to four.

Now, returning to our globe, you'll remember that its scale is roughly one to 42 million. That's true of many globes because in the earth's diameter, there are about 42 million feet.

In other words, this globe has been scaled down to one foot (or 12 inches) from the 42 million feet – that's 67.6 million kilometers – found in the real world.

If you're looking for a place on a globe, the main directions – north, east, south, and west – can be a big help.

Of course, you have to understand some basics before you can use those directions.

First, south is always pointed toward the south pole on globes and predictably, north is always pointed toward the north pole.

When the globe is positioned so that the north pole is located at the top – which is generally the case – north is up, south is down, west is to the left, and east is to the right.

North, west, south and east are known as the "cardinal" directions.

Directions can be important when you need to find a place on a globe. If, for example, you have to find Copenhagen, Denmark, and you know where Tripoli, Libya is, *and* you've been told that Copenhagen is north of Tripoli, you would merely move your finger up – northward, towards the north pole – until it runs into Copenhagen.

There it is!

But what if you don't know where Tripoli is located? Many people don't. Nevertheless, you can find it or Copenhagen – or any other place, for that matter – because a series of lines that runs east and west, and another that runs north and south – a grid – is printed on globes to help us find particular places and measure distances. We'll explain how in a few minutes; but first, a definition.

The lines that run east and west are called parallels of latitude.

In the real world, these imaginary lines are always the same distance from one another – about 70 miles, or about 113 kilometers.

If you look down from the north pole you can see that parallels of latitude form circles, which are measured with a unit called the degree. Degrees are symbolized by a small circle.

The distance between each latitude is subdivided into units called the "minute."

There are 60 minute lines between each line of latitude. Minute lines are symbolized by an apostrophe.

The basic reference latitude, the equator, lies halfway between the north and south poles – at precisely zero degrees, zero minutes.

The equator divides the globe into its northern and southern hemispheres. Our word "hemisphere" comes from a Greek word meaning half a sphere, or half a globe.

For every degree of latitude in the northern hemisphere, there's a corresponding degree in the southern hemisphere. To distinguish between them, we say a place is located at "so many degrees *north*," or "so many degrees *south*."

For example, we could say that the northern edge of Cuba lies at 23 degrees, 30 minutes *northern* latitude, and that Sao Paulo, Brazil lies at 23 degrees, 30 minutes – or 23 ½ degrees – *southern* latitude.

By the way, twenty three and one-half degrees southern latitude is called the Tropic of Capricorn and its corresponding latitude in the northern hemisphere is known as the Tropic of Cancer.

The area between these two latitudes, often called "the tropics," has a tropical climate, warm and often humid all year long.

Two other lines of latitude, the Antarctic Circle, at about 66 ½ degrees southern latitude, and the Arctic Circle, at 66 ½ degrees northern latitude, also help identify climate.

The areas within these circles are generally cold throughout the year.

The areas between the tropics and the Arctic circle and the Antarctic circle, those in the so-called "middle latitudes," generally have more seasonal weather with a summer, fall, winter, and spring each year.

So far, we've discussed the first part of the grid system found on globes – parallels of latitude.

Now, let's take a look at the second – lines of longitude, also called meridians.

As you can see, they run north and south. And unlike lines of latitude, they don't lie parallel to each other.

They bulge out at the equator, then get closer together until they finally intersect at the south pole and north pole.

By the way, meridians also form rings around a globe, but these rings run north and south – unlike the rings formed by parallels of latitude, which, as you recall, run west and east.

The lines made by meridians are measured in the same way as lines of latitude – in degrees and minutes.

The standard reference meridian, located at zero degrees, zero minutes, is usually called the Prime Meridian.

Because it runs through Greenwich, a town just outside London in the United Kingdom, it's sometimes referred to as the "Greenwich Line."

When other meridians are drawn to the east of the Prime Meridian, we identify them by saying, "15 degrees east, 30 degrees east, 45 degrees east..." and so on.

When they're located to the west, we say, "15 degrees west, 30 degrees west, 45 degrees west," and ... well, you see how it works.

Now, let's see how that grid composed of latitude and longitude lines can help you find places on a globe.

Let's say you're looking for Saudi Arabia, which is found at 45 degrees eastern longitude and 25 degrees northern latitude.

Look along the equator until you find 45 degrees east.

Find 25 degrees northern latitude on the rim holder or on the globe itself, move your fingers together, and where the two meet – at 45 degrees eastern longitude and 25 degrees northern latitude – you'll find Saudi Arabia.

Up to this point, we've discussed globes. Now it's time to turn our attention to maps, a second device that helps us quickly understand the many complexities of our earth's surface.

Of course, people use maps all the time. A repair person may access a map on a laptop to find the fastest way to get to his customer.

Scientists use maps for any number of reasons.

Many of us look at weather maps to find out what we should wear to school on a particular day.

Obviously, maps are very useful – and have been for a long time.

In 16th century Europe, a map maker (or cartographer) named Gerardus Mercator devised a way to make a map that showed directions more accurately than ever before.

We can re-enact what Mercator did by wrapping a plastic tube around a transparent globe. Mercator put a candle inside his globe, but being more modern, we'll use a light bulb.

When lit, the shadows cast by the lines on the globe are projected onto the plastic tube.

Now, if you trace the shadow lines carefully, you get a map.

Mercator projection maps, as they're called, give a true picture of directions.

But places such as Greenland and Antarctica are distorted on Mercator maps, which stretch out shapes far to the north and far to the south.

If a person wanted to make a map with less distortion, he or she could use what's called a Lambert's or "conic" projection.

These maps can be made by using a cone that touches a smaller portion of the globe than does the tube that produces a Mercator projection.

You'll see that while you're tracing the projected shadows have practically no distortion. That's because the shadows are closer to the globe.

So distances, shapes, and directions are more accurate on

Lambert projection maps than on those based on Mercator projections. But Lambert projection maps show smaller areas.

Not all large-scale maps are made by the projection method. Some, such as this one, show that different methods can be used.

In fact, you can use your own method.

If you paint an orange so that it looks like the earth, and then cut its skin into equal slices, peel off those slices, and then lay them out flat, you have still another kind of map that represents the earth's surface.

During this part of the program, we've looked at the various ways that information on a globe can be transferred onto a flat surface to produce a map. And we've talked about some major map projections.

Now, we're going to turn our attention to some maps that convey specific kinds of information, often called "special purpose" maps.

The graphic relief map, or variations of it, is commonly seen in geography classes.

Sometimes called a "physical relief" map, its different colors show how high or low the land is in relation to sea level.

Most graphic relief maps use browns or dark oranges to depict mountains.

Yellows and beiges are used to indicate hills and uplands.

Various shades of blue generally show water.

Light blues normally show shallow water, often near a coastline.

Greens usually mean lowland areas.

Sometimes colors are used to show information other than the height of land, or depth of water.

On this special purpose map, for example, colors show population density. Each color indicates how many people live within a square mile.

Small colored squares explain what each color means. The squares are found on a portion of the map known as the "key, or "legend."

Now, look at this land use map. Using the color squares in the legend, can you tell whether there would be much gathering activity near Sydney, Australia?

No, of course not. As the map shows, Sydney is located in an industrial and a farming area, not a region noted for its gathering activity.

Students often refer to political maps when studying geography.

Political maps show boundaries between states or provinces and between countries.

Often, broken lines with one dot between them are used to show state or provincial boundaries. Sometimes, a transparent line is overlaid on them.

Broken lines with two dots between them often depict the border between countries.

Finding places on maps is somewhat similar to finding them on globes.

In atlases, which are books of maps, parallel of latitude numbers are found at the right and left edges of the map, and longitude or meridian numbers are found at the bottom and top.

If you knew that Winnipeg, Canada was located at about 50 degrees northern latitude and at about 97 degrees western longitude, you could easily find it on a map.

People also can find a lot of very useful geographical information on line. Suppose, for instance, you and your family were planning a vacation in San Francisco, California, and wanted to see Fisherman's Wharf, a popular tourist attraction there.

Well, you could obtain its location on line, making it easy to find it when you arrive in that northern California city.

By the way, letters, such as “A,” "B" and "C,” and numbers, such as "12" and "13," are often placed on the edges of small-scale maps to help people find specific locations.

For example, the corner of Judah Street and Sunset Boulevard is located close to where B and 12 intersect.

Expressway users also can get up-to-the minute traffic report maps on line, so they can avoid traffic jams.

Moreover, travelers can find maps that give the best route when going from one city to another.

And, of course, maps on paper are useful because they can be carried wherever you go. In that respect, they're much more useful than globes.

Up to this point, we've discussed globes and maps.

Now we're going to talk about graphs – the third category of devices that help us quickly understand geographic information.

Before you can use a graph, you need to look at its title. Here, the title tells us the graph shows the world's population during a 100-year period – from 1925 to what it's projected to be in 2025.

It also states that the numbers given will be in billions. Now that you know what the graph is about generally – world population – you can get down to specifics by looking at the information near the vertical axis, on the left side and along the horizontal axis, at the bottom.

The vertical axis shows the number of people, or population – in this instance, in billions – just as the title states.

The data on the horizontal axis gives the basis of the comparison – the years in which the population numbers have been tabulated or projected.

Because the data are shown on vertical bars (those that are drawn up and down), this kind of graph is called, quite logically, a "vertical bar graph."

You can find specific information on these graphs easily. If, for instance, you wanted to know how many people there were on earth in the year 2000, you'd first locate the top of the bar that's labeled "2000."

Then look to the left, on the vertical axis, where the numerical data are listed. As you can see, there were a little more than six billion people in the world in that year. Remember, the numbers shown are in billions.

Sometimes the bars in bar graphs are divided into sections to give more detailed information. Here, you can see that the continents are now divided into major countries.

Given this more detailed information, you can make some educated guesses about the countries.

The United States, for instance, consumes far more energy than any other nation. Therefore, a good educated guess is that the United States has a much more extensive transportation system because large numbers of planes, trains, ships, buses and cars require energy to move.

So far, in this section of the program, we've discussed vertical bar graphs.

There are also horizontal bar graphs.

The upcoming example, as you can see, will compare steel output in the leading steel producing countries.

On horizontal bar graphs, numerical data almost always lie along the horizontal axis and the things to be compared along the vertical axis.

Occasionally, the bars are segmented to show two or more classifications of the data.

Here, it's four kinds of steel, as seen in the key – carbon, alloy, stainless and tool.

Of the four leading steel producing countries, which produces the most stainless steel? Right. You can see at a glance that it's Japan.

How much more carbon steel is made in China than in Russia?

Well, since there are about 100 million metric tons made in China and about 40 million metric tons in Russia, the difference – 60 million metric tons – is the answer.

The next kind of graph we'll look at is the line graph. It's normally used to show trends, or movement over time. That can be very important when studying geography.

The worldwide growth of desert lands is an example.

As you can see, the percentage of world lands that are deserts are shown on the vertical axis; and the years, on the horizontal axis.

The graph line shows that during the past 50 years, desert lands have grown from 18.5 percent of all the world's lands to now almost 20 percent.

Scientists use this data to predict future trends and to develop strategies to solve problems.

For instance, new tilling techniques were developed to reverse the growth of desert lands after scientists recognized the trend.

Multiple line graphs – those with more than one line – are used to compare trends.

This multiple-line graph, for example, shows population growth trends in developing regions of the world as compared to population trends in already developed regions.

As you can see, the data is projected all the way to 2050. Graphs such as this one can be very helpful to diplomats and other officials who need to plan for the future.

In developing countries, such as those in Latin America, or in Africa and Asia, officials need to plan so that there will be enough jobs, housing and food for the billions of people who will be born in the years to come.

So far in our discussion of graphs, we've covered the bar and line varieties.

Now we're going to turn our attention to circular graphs, sometimes called "pie charts" because they're divided into wedges, much like a pie. The wedges show how the total amount is divided up.

Let's say that you're studying Brazil, and you need to find out how most of the people in that South American country earn their living.

A circular chart can quickly tell you.

Well over half of all Brazilian workers earn their living in service jobs or in agriculture.

Which occupational area has the smallest number of workers in Brazil?

Obviously, transportation and communication.

"Pictographs" are the last kind of visual device we'll discuss. Sometimes called "picture graphs," they have small drawings, or symbols, that represent specific data.

All pictographs have a key that explains what those symbols mean. Here, one wheat stalk represents 10 million metric tons of wheat.

From this graph, you can tell at a glance that China produces the most wheat of the countries and region compared to it – the European Union, the United States, and India.

If you quickly count the stalks, you can see that it produces 110 million metric tons of that grain.

In short, then, charts, maps and globes show data in a way that can help us understand many different aspects of geography quickly and efficiently.

But before we can use them, we need to understand some basics

– scale, parallels of latitude, lines of longitude (or meridians), map projections, directions, the meaning of colors and what's on a graph's vertical and horizontal axes.

Globes, maps and graphs - they are very useful tools we can all use.

WEB RESOURCES

Map Projection Overview

http://www.colorado.edu/geography/gcraft/notes/mapproj/mapproj.html

An excellent resource from the University of Colorado that explains map projections with a series of illustrations and text.

Graphs and Stories

http://www.nottingham.ac.uk/education/shell/graphs.htm

The School of Education at the University of Nottingham, in the UK, has devised graph games on this outstanding site. Perfect for extended activities and extra credit, especially for more capable students.

GLOBES, MAPS
&
GRAPHS

- **FIND PLACES ON GLOBES USING LATITUDE AND LONGITUDE LINES**
- **FIND PLACES ON MAPS USING A GRID SYSTEM**
- **NAME SEVERAL TYPES OF MAP PROJECTIONS AND EXPLAIN THEIR BENEFITS AND SHORTCOMINGS**
- **EXPLAIN "SCALE"**
- **DISCUSS THE MEANING OF COLORS AND SYMBOLS ON SPECIAL PURPOSE MAPS**
- **READ AND INTERPRET 4 KINDS OF GRAPHS**

Name ________________________

Pre-Test

Directions: Place a “T” in the space next to the statement if it is true, and an “F” if it is false.

___ 1. The earth’s surface area covers 42 million square miles.

___ 2. The second number of a ratio represents a real object.

___ 3. North, east, south and west are known as “intermediate” directions.

___ 4. Lines of latitude run east and west.

___ 5. There are 360 minute lines between each line of latitude.

___ 6. The areas between the tropics and the Arctic and Antarctic circles have four seasons – summer, fall, winter and spring.

___ 7. The standard reference meridian is known as the International Date Line.

___ 8. The main benefit of Mercator projection maps is that they show true shapes far to north and far to the south.

___ 9. Physical relief maps often use oranges and browns to depict mountains.

___ 10. On horizontal bar graphs, numerical data almost always lie along the horizontal axis.

___ 11. Multiple line graphs often compare trends.

___ 12. Circle graphs show parts of a whole.

Name ________________________

Vocabulary List

Directions: Define the words and terms on the blank spaces.

Antarctic Circle ____

Arctic Circle ____

axis ____

cardinal directions ____

complex ____

data ____

diameter ____

distortion ____

equator ____

hemisphere ____

Lambert's projection____

latitude ____

longitude ____

lowland ____

map key ____

map legend ____

Mercator projection ____

meridian ____

metric ____

north pole ____

parallel ____

ratio ____

Name ______________________

Vocabulary List, Page 2

scale ____

south pole ____

tilling ____

Tropic of Cancer ____

Tropic of Capricorn ____

tropics ____

upland ____

Name ________________________

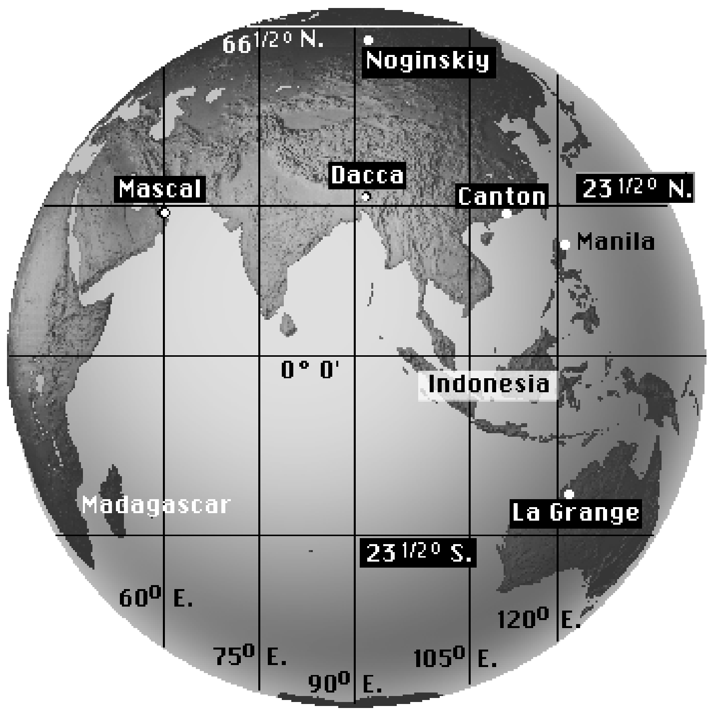
Viewer's Concept Guide

Directions: Fill in the blank spaces.

1. Scales are stated as a ____.
2. The second number of a ratio represents the ______________________________.
3. The cardinal directions are ___________________, ______________________, ___________________________ and __________________________________.
4. In the real world there are about ____________ miles between parallels of latitude.
5. The Tropic of Capricorn is located at ________ and the Tropic of Cancer is located at ____.
6. Seasonal weather with four seasons are found ____________________________.
7. The Prime Meridian is located at ______________ degrees __________ minutes.
8. Mercator projection maps give a true representation of _____________________.
9. Broken lines with two dots between them often depict the border between _______ ____.
10. Small-scale maps often use __________________ and ___________________ in their grid system.
11. In horizontal bar graphs, data on the horizontal axis give ___________________.
12. The wedges in circular graphs show how __________________________________.

Name ________________________

Using Globes

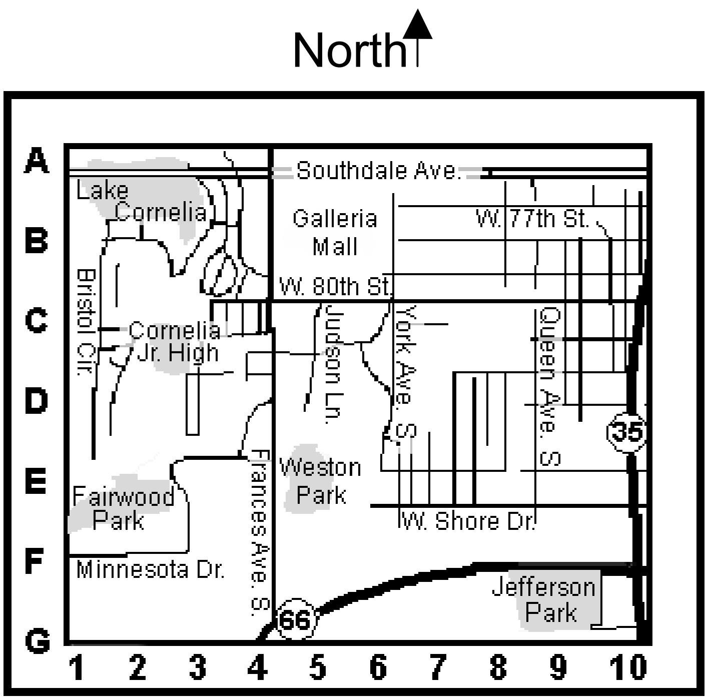


Directions: Using the globe above and what you learned in the video, answer the following questions.

1. What island country lies on the equator? ____________________________________
2. What island touches the Tropic of Capricorn? ________________________________
3. What three cities lie close to the Tropic of Cancer? __________________________
4. What two cities lie close to 120° E. longitude? ________________________________
5. What city lies closest to the Arctic Circle? ___________________________________
6. What is the approximate distance between La Grange, Australia and Manila, in the Philippines?____
7. What city lies near the intersection of 60° eastern longitude and 23 ½° northern latitude? ____
8. What city lies at approximately 112° eastern longitude?______________________

Name ________________________

Using Small Scale Maps



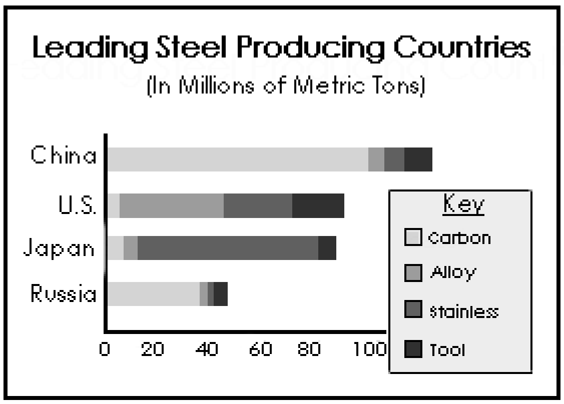
Directions: Using the small scale map above and what you learned in the video, answer the following questions.

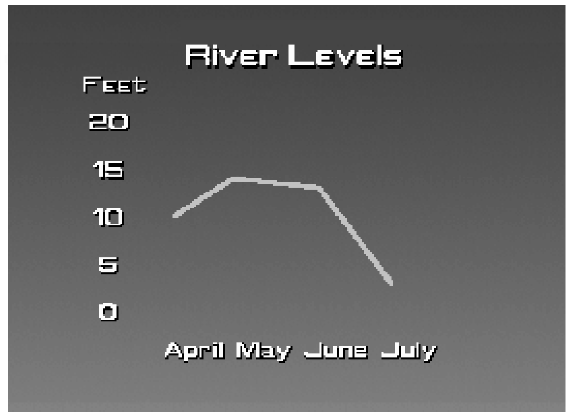
1. What shopping mall is located at B-5? ________________________________
2. What park is located at E-5? ____________________________________
3. If the map scale is 1 inch:1 mile, how many miles would you travel if you took highway 66 from Jefferson Park, exited at Francis Avenue S., and turned right to Galleria Mall? ______________________
4. If you walk three miles per hour, how long would it take you to get to Galleria Mall if you walked from the western edge of Lake Cornelia along Southdale Ave. to the mall?____
5. The science class at Cornelia Jr. High will take a field trip to Lake Cornelia to gather water samples. What north-south street are they likely to take to walk to the lake? ____.
6. Name the letter-number coordinates where highways 35 and 66 intersect. ____
7. What two streets intersect near E-9? ________________________________

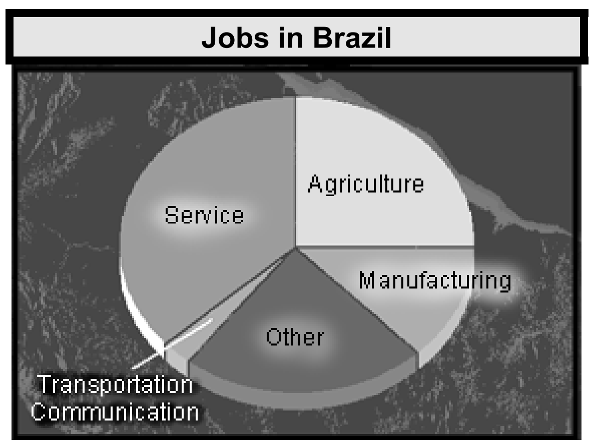
Name ________________________

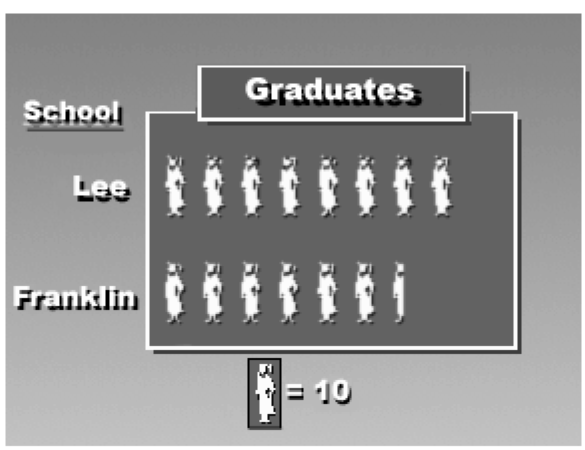
Graphs, Page 1

Directions: Using the graphs and charts below, answer the questions on the next page.









Name ________________________

Graphs, Page 2

Part I Leading Steel Producing Countries

1. What kind of graph is this called? ____
2. What are three other kinds of similar graphs? ________________, ____________ and ____
3. Which country makes the smallest amount of stainless steel? __________________
4. Approximately how much more carbon steel does China make than the US? ______ ____
5. Which country makes the most tool steel? _________________________________

Part II River Levels

1. What kind of graph is this called? ____
2. What is the name of a similar graph? ______________________________________
3. In which month was the river at its highest levels? ___________________________
4. Which month shows the steepest decline in water levels? _____________________
5. Approximately how many feet deep was the river at the beginning of July? _______

Part III Jobs in Brazil

1. What kind of graph is this called? ____
2. If there are 100 million job holders in Brazil, about how many make their living at agricultural jobs there?____
3. What classification has the most jobs? _____________________________________
4. What classification has the least number of jobs? ___________________________
5. If there are 100 million job holders in Brazil, about how many more agricultural workers are there than manufacturing workers? ______________________________

Part IV Graduates

1. What kind of graph is this called? ____
2. Each figure stands for how many graduates? _______________________________
3. Which school has the most graduates? _____________________________________
4. How many graduates does Lee School have? ________________________________
5. How many fewer graduates does Franklin have than Lee? ____________________

Name ________________________

Post Test

Part I

Directions: Place a “T in the space next to the statement if it is true, and an “F” if it is false.

___ 1. In the ratio 1:7, the model is seven times larger than the real thing.

___ 2. The scale of a map or globe generally is found in its key.

___ 3. There are 93 million feet in the earth’s diameter.

___ 4. The cardinal directions are north and south, but not east and west.

___ 5. North is normally pointed up on maps and globes.

___ 6. West is normally pointed to the right on maps and globes.

___ 7. A grid system on maps and globes is composed of meridians and parallels of longitude.

___ 8. Lines of longitude run north and south.

___ 9. The key reference meridian is the Greenwich Line.

___ 10. The Tropic of Capricorn lies at about 23 ½ degrees southern latitude.

Part II

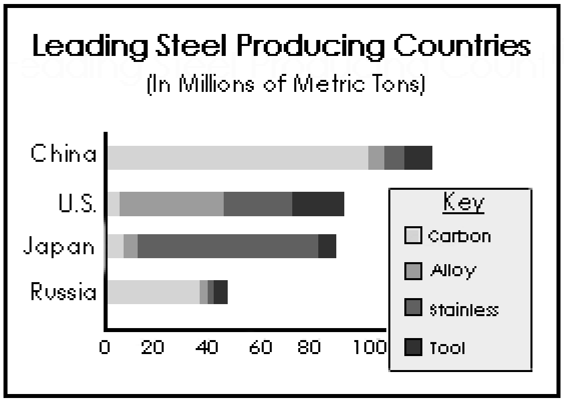
Directions: Place the letter of the best definition next to the word.

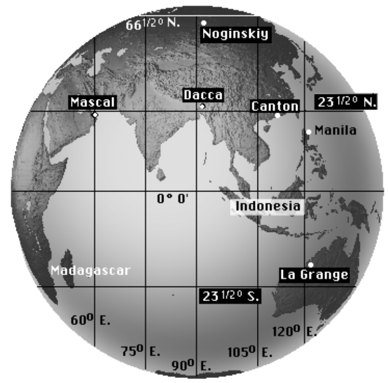
Word	Definition
1. ___ Mercator projection	a. Half a sphere
2. ___ Minute	b. Distorts far to the north and far to the south
3. ___ Hemisphere	c. Lies at 66 ½ ^{o} S.
4. ___ Tropics	d. Lies between 23 ½ ^{o} N. and 23 ½ ^{o} S.
5. ___ Antarctic Circle	e. Subdivision of meridians and parallels of latitude

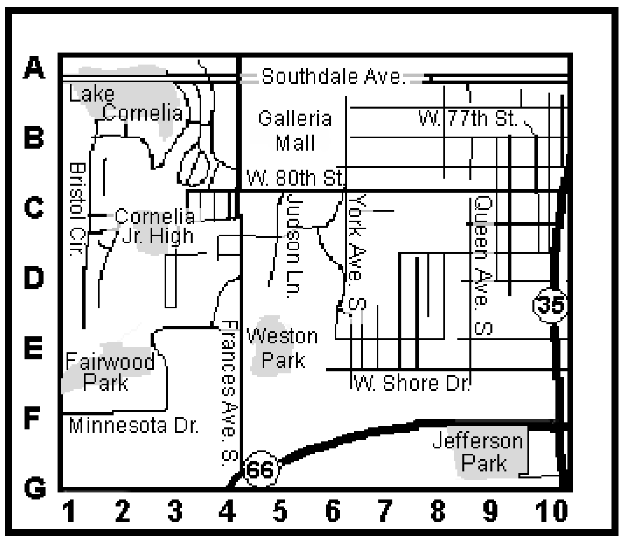
Name _______________

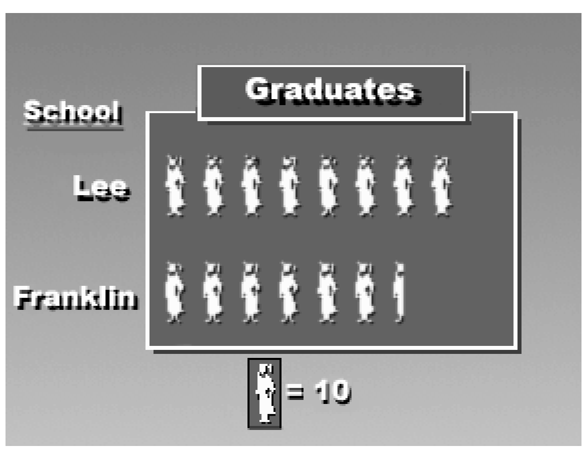
Part III

Directions: Using the illustrations below, fill in the blanks on the next page.









 Name _______________

Part III (Continued)

1. China's combined output of carbon and alloy steel is _________________________,
2. The United States' combined output of carbon and alloy steel is roughly equal to the total steel output of ____.
3. Japan's total steel output is about _______________________________metric tons.
4. On the picture of the globe, ___________ lies at 90^0 E. and 24^0 N.
5. The ______________________ is the name given to the latitude line located at 0^0 0'.
6. Mascal, Dacca and Canton are three cities located near 23 ½ ^{0} N. latitude, also known as ____.
7. On the small scale map, ________________________ is located at F-1, F-2 and F-3.
8. If you were traveling on Highway 35, you would exit on ________________________ to travel directly, in a straight line, to Galleria Mall.
9. There are _______________more graduates at Lee School than at Franklin School.
10. Each figure equals _____________ graduates.

Part IV

Directions: Circle the letter next to the word or phrase that most accurately completes the sentence.

1. Lambert projection maps

   a. are distorted far to the north and far to the south.
   b. often show areas in the middle latitudes.
   c. are less distorted than Robinson projection maps.
   d. show only North America.

2. On physical relief maps, browns and dark oranges often show

   a. rivers.
   b. plains.
   c. lowlands.
   d. mountains.

 Name _______________

3. On political maps, broken lines with one dot between them often show

   a. boundaries between states and provinces.
   b. boundaries between countries.
   c. boundaries between cities and suburbs.
   d. boundaries between land masses and coast lines.

4. Small scale maps

   a. show relatively small areas, such as cities or portions of cities.
   b. show true directions, but often distort far to the north and far to the south.
   c. are often used in atlases to show continents and hemispheres.
   d. none of the above.

5. On horizontal bar graphs, the information on the horizontal axis shows

   a. things to be compared.
   b. the title.
   c. the basis of comparison.
   d. numerical data.

6. On vertical bar graphs, the information of the horizontal axis shows

   a. the key.
   b. the title.
   c. the basis of comparison.
   d. numerical data.

7. Multiple line graphs

   a. normally show parts of a whole.
   b. compare trends.
   c. show a single trend two or more ways.
   d. none of the above.

8. Circular graphs

   a. show trends.
   b. are sometimes called “pie charts.”
   c. show parts of a whole.
   d. b. and c.

9. Pictographs

   a. always have a key.
   b. never have a key.
   c. are sometimes called “pie graphs.”
   d. show trends.

