The first unit we cover in this class is an introduction to geography and the five themes of geography. Everything we learn in this unit is based on chapter one in the textbook, however, we have activities included in this packet that are outside of the book. This chapter will stress knowledge and skills that will be used in later units. Each chapter in the year should build upon the next and what you learn in this chapter will be important to what we learn for the remainder of this school year.

<table>
<thead>
<tr>
<th>TOPIC</th>
<th>PAGE</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Outline</td>
<td>2</td>
<td>Aug. 17</td>
</tr>
<tr>
<td>If We Made the Rules</td>
<td>3</td>
<td>Aug. 20-21</td>
</tr>
<tr>
<td>Pay It Forward</td>
<td>4</td>
<td>Aug. 22</td>
</tr>
<tr>
<td>Continents and Oceans</td>
<td>5</td>
<td>Aug. 23</td>
</tr>
<tr>
<td>Five Themes Notes</td>
<td>6</td>
<td>Aug. 24</td>
</tr>
<tr>
<td>Direction and Distance</td>
<td>7-8</td>
<td>Aug. 27</td>
</tr>
<tr>
<td>Internet Lesson #1</td>
<td>9</td>
<td>Aug. 28</td>
</tr>
<tr>
<td>Locating Using a Grid</td>
<td>10-12</td>
<td>Aug. 29</td>
</tr>
<tr>
<td>Locating Using a Grid</td>
<td>10-12</td>
<td>Aug. 30</td>
</tr>
<tr>
<td>Introduction to Graphs</td>
<td>Hands on</td>
<td>Aug. 31</td>
</tr>
<tr>
<td>Quiz Latitude and Longitude</td>
<td></td>
<td>Sept. 4</td>
</tr>
<tr>
<td>Orange Activity</td>
<td>13</td>
<td>Sept. 4</td>
</tr>
<tr>
<td>Climate Charts Handout</td>
<td></td>
<td>Sept. 5</td>
</tr>
<tr>
<td>Intro to Latitude and Longitude Activity</td>
<td>14-17</td>
<td>Sept. 6</td>
</tr>
<tr>
<td>Geographer’s Tools</td>
<td>18-20</td>
<td>Sept. 7</td>
</tr>
<tr>
<td>Cartography</td>
<td>21-23</td>
<td>Sept. 10</td>
</tr>
<tr>
<td>Map Projections</td>
<td></td>
<td>Sept. 11</td>
</tr>
<tr>
<td>5 Color Population Map</td>
<td>24</td>
<td>Sept. 12-13</td>
</tr>
<tr>
<td>Orange Activity Presentations</td>
<td></td>
<td>Sept. 14</td>
</tr>
<tr>
<td>Direction and distance Activity</td>
<td>25-26</td>
<td>Sept. 17</td>
</tr>
<tr>
<td>Dancing Matt Handout</td>
<td></td>
<td>Sept. 18</td>
</tr>
<tr>
<td>Review</td>
<td></td>
<td>Sept. 19</td>
</tr>
<tr>
<td>Unit 1 Test</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
COURSE OUTLINE

Mr. Belter’s Expectations

It is my expectation that every student come prepared to contribute to the class in a positive manner on that particular day. It is also my expectation that students participate willingly in class discussions and projects.

Classroom Behavior

It is my expectation that all students act in a civilized manner while in my classroom in accordance with the policy outlined in the student handbook. Above the rules outlined in the handbook, a list of rule will be developed by the class in the first week.

Grading Procedure

Your final grade will be based on 4 different categories. The categories will be weighted as follows: Tests and quizzes will account for 50% of your total grade. Daily Work will account for 20% of your total grade. Maps and activities will account for 20% of your total grade. Current Events will account for the final 10%

This course will be graded using the following scale:

100%-90% A
89%-80% B
79%-70% C
69%-60% D
60% & below-F
IF WE MADE THE RULES

In this activity students have a chance to express how they would like class to run. Students should consider those things that make classes successful or easy to learn in. The relationship between fellow students and the teacher can be defined by the rules developed. It is extremely important to understand that this is not only a list of things not to do, but an example of ways that students can behave positively to effect class.

Students would be encouraged to......
1.____________________________________________________________
2.____________________________________________________________
3.____________________________________________________________
4.____________________________________________________________
5.____________________________________________________________

Students would not be allowed to......
1.____________________________________________________________
2.____________________________________________________________
3.____________________________________________________________
4.____________________________________________________________
5.____________________________________________________________

Teachers would be encouraged to.....
1.____________________________________________________________
2.____________________________________________________________
3.____________________________________________________________
4.____________________________________________________________
5.____________________________________________________________

Teachers would not be allowed to....
1.____________________________________________________________
2.____________________________________________________________
3.____________________________________________________________
4.____________________________________________________________
PAY IT FORWARD

We will begin the year by discussing exactly what geography and 7th grade social studies will be about. We will watch clips from the movie Pay it Forward to help us begin to understand the importance of social studies to our everyday lives. Along with the small clips of the movie, we will answer questions and discuss the world around us. This is also an opportunity for the class to begin to contribute and share ideas in an orderly fashion. Before watching the clips, think about and answer the following.

1. What is social studies?

________________________________________________________________________

________________________________________________________________________

2. Why, if at all, do you think it is important to learn social studies?

________________________________________________________________________

________________________________________________________________________

3. What, if anything, would you like to or expect to learn in this social studies class?

________________________________________________________________________

________________________________________________________________________

After or while watching the clips, answer the following questions:

1. What do you think Mr. Simonet means by the “Middle School Bridge?”

________________________________________________________________________

________________________________________________________________________

2. How does Mr. Simonet describe social studies?

________________________________________________________________________

________________________________________________________________________

3. Do you believe it is true that the world expects nothing of 11 year olds? Explain.

________________________________________________________________________

________________________________________________________________________

4. What do you think about Trevor’s idea to change the world? Do you think it would work? Explain

________________________________________________________________________

________________________________________________________________________
WHAT ARE CONTINENTS?

With all the drifting and crashing of the continents, it’s a wonder they’ve stood still long enough for people to give them names. The breakup of the ancient super continents left us with seven so-called continents. They are defined as the large unbroken masses of land into which the Earth’s surface is divided. But that provides a lot of leeway and provokes some logical questions. Is Europe really a continent? Why isn’t India one? How can islands be a part of a continent if they’re not connected to the mainland?

From ancient times to relatively recent ones, people acknowledged only three continents: Europe, Asia, and Africa. The next two, North and South America, weren’t recognized until after Columbus’s voyages although evidence proves travelers had visited the America’s prior to Columbus. Australia and Antarctica, which existed only in theory as Terra Australia Incognita since the time of Ptolemy, went undiscovered and unmapped by Europeans for centuries. Australia wasn’t named and put on the maps until the nineteenth century. Antarctica was discovered in 1820, when Nathaniel Palmer, an American whaling captain found islands off the mainland, and a Russian admiral named von Bellingshausen reached the continental mainland of Antarctica in 1821.

Use the map below to label the seven continents and five oceans.
FIVE THEMES OF GEOGRAPHY

[Diagram of a globe with lines radiating from the center]
Have you ever drawn a map in the dirt to show someone where you live? Such drawings were some of the earliest maps. Other early maps were made of sticks tied together, or pieces of wood sewn to a piece of sealskin. People have used maps for thousands of years to show where places are, how far it is from one place to another, and the direction to travel to get from here to there. Maps are important tools. Maps tell us where to catch a bus and where that bus will take us. Maps help us find our friend’s house in a part of town or state to which we are moving.

Direction is one of the most important things we can learn from a map. You use direction every day—left, right, forward, back, up, down. But these directions depend on where you are and which way you are facing. Maps use the directions north, south, east, and west. These directions don’t change. North will always be towards the north pole of the earth. Therefore, if you stand facing the North Pole, east will be to your right hand side, west will be to your left, and south will be behind you.

Usually, north will be at the top of a map. However, this is not always true. You must check to be sure. Mapmakers use a compass rose or north arrow to show directions. In this class we will also call the indication of direction by the term orientation. If there is no compass rose or north arrow, or other symbol north should be at the top of the map. All maps that we will make as a class must include some form of orientation.

Fill in the missing directions on these compass roses. Notice that north is not always in the same place.
A map is a drawing of part of the earth. Maps are drawn so that a certain distance on the map represents a much larger distance on the earth. This makes it possible to show the whole earth on a piece of paper the size of this page. Not all maps are the size of this page, of course. Look at the maps on the wall of the classroom. Each map is a different size and shows a different size area of the earth’s surface. What ties them all together is fact that they show the same earth. In order to tell us what distance they represent, each map must have a scale. Here are some examples of map scales. Notice that all lines are the same length, but that each line represents a different distance.

Using a scale to measure distances between places on a map is easy. Use a piece of paper, just put the edge of the paper between the two points you wish to measure. Make a mark on the paper at each point. Then put the piece of paper on the map scale with one mark at zero. Note where the other point falls on the scale. This measurement gives you the distance. If the scale is not long enough mark the paper where it ends on the paper. Then slide the paper to the left to line up the new mark with zero. Do this as many times as necessary. Then multiply the number of spaces between marks times the distance each length of the scale represents. For example, if the scale represents 100 miles, and you marked off three spaces, multiply 3 times 100. The distance between the two points on the map is 300 miles.

Use the following map to answer questions concerning direction and distance that are on the following page.
INTERNET LESSON # 1

Name ______________________________ Hour __________ Due Date __________ Score _______ / _______

Today we will be using Google Maps to take a virtual tour of some cities around the world. We will begin in a very familiar place. After you have logged on to Google Maps, search to find Lawton, Ok. Begin your trip around Lawton by locating the intersection of Euclid Ave and Homestead Dr., near Tomlinson Middle School, 702 NW Homestead Dr. Lawton, OK 73505

1. From the corner of Euclid and Homestead walk east 3 blocks, look north, what bank do you see?

_________________________________________________________________________________

2. What is the approximate address of the bank?

_________________________________________________________________________________

3. How many cars do you see in the parking lot(ignore any you cannot see clearly) around the bank?

_________________________________________________________________________________

4. What are the colors of the cars?

_________________________________________________________________________________

5. Start walking south, 3.5 blocks, look west what is the name of the shopping center?

_________________________________________________________________________________

6. Continue to walk south another 1.5 blocks, what the name of the restaurant/drive inn? What is your favorite drink?

_________________________________________________________________________________

7. Walk north .5 block an turn east on Gore Blvd. Walk approximately 18 blocks and look south what park do you see?

_________________________________________________________________________________

8. Turn south, walk 3 blocks, when was the last time you were a the building on the south side of the street?

_________________________________________________________________________________

9. Walk west on C st, 2.5 blocks, what is on the south side of the street?

_________________________________________________________________________________
LOCATING PLACES USING A GRID

In order to start locating places on a map we must first develop basic skills in using a grid. Reading a map can be very difficult. Suppose for instance I asked you to find the location of Warsaw, Poland on a map. How would you find it? By looking at the map of Poland, you would notice that it seems as though every town's name has a bunch of w's, c's, and z's. You need something to tell you about where Warsaw is located. The something you need is called a grid. A grid is a set of lines used to identify locations on a map. Letters and numbers around the edges of the map label the areas marked on the map. Look at the example below. Place your left index finger on the letter B on the left side of your grid. Place your right index finger on the number 3 at the bottom of the grid. Move your left finger straight across and your right finger straight up until they meet. There should be a wolf at your fingertips.

The five spaces to the right of the letter B are in the row. We call this row B. The five spaces above the number 3 are in a column. We call this column 3. The area where a row and a column meet is called a cell. Notice that only one cell can be at the area where row B and column 3 meet. We call this cell B-3.

Practice using the grid by locating the following cells and executing the instructions:

a. Locate cell D-1 and draw a circle.
b. Locate cell A-4 and draw a star.
c. Locate cell C-2 and draw a triangle.
LOCATING PLACES USING A GRID

Use the map on the previous page to create an index or key. Use the nine locations that are on the map as a starting point. Also include seven different locations of your own (i.e. the church near the school, your home or friends home, baseball field, different stores, etc.). Mark the locations on your map and include them in the index.
## INDEX

<table>
<thead>
<tr>
<th>Coordinates</th>
<th>Point of Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. D-4</td>
<td>Tomlinson Middle School</td>
</tr>
<tr>
<td>2.</td>
<td>Hampton Inn</td>
</tr>
<tr>
<td>3.</td>
<td>Sheridan Mall</td>
</tr>
<tr>
<td>4. F-3</td>
<td></td>
</tr>
<tr>
<td>5. C-1</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Wal-Mart</td>
</tr>
<tr>
<td>7.</td>
<td>Long John Silvers</td>
</tr>
<tr>
<td>8. C-5</td>
<td></td>
</tr>
<tr>
<td>9. A-3</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td></td>
</tr>
</tbody>
</table>
Every cartographer is faced with the problem of transforming the curved surface of the earth onto a flat plane with a minimum of distortion. The systematic transformation of locations on the earth (spherical surface) to locations on a map (flat surface) is called projection.

It is not possible to represent, on a flat map, the spatial relationships of angle, distance, direction and area that only a globe can show faithfully. As a result, projection systems inevitably involve some distortion. There are an infinite number of possible map projections, all of which distort one or more of the characteristics at the globe in varying degrees. Each projection represents the earth's round surface in a different way and has a different purpose.

The orange activity is an example of how the earth's round surface can be represented on a flat surface. The steps are as follows:

1. Imagine the orange as the earth and note where different continents and oceans would be located.
2. Peel the orange and attempt to keep the peel in one piece.
3. Place the peel on your blank piece of paper and flatten it out. You will be creating a map of the world with your peel as an outline. The area that the peel covers represents the entire area of the surface of the earth. All land masses and water should be accounted for on the map.
4. Begin your map of the world by locating and drawing the following important lines of latitude and longitude.
   a. Equator
   b. Prime meridian
   c. International date line
   d. Tropic of Cancer
   e. Tropic of Capricorn
5. Continue by drawing and labeling the seven continents as well as the oceans.
   a. North America
   b. South America
   c. Europe
   d. Asia
   e. Africa
   f. Australia
   g. Antarctica
6. Include TODALS on your map.
   a. Title
   b. Orientation
   c. Date
   d. Author
   e. Legend
   f. Scale
The grid system we just learned about gives us a way to locate the exact position of different places on a map. A similar system covers the entire earth so that at any given point we can be said to have an absolute or exact location. We know that a grid is made up of two sets of lines. These lines cross each other. The grid system we use on earth is known as latitude and longitude. Use the following chart to begin to understand the basics of latitude and longitude.

**What is latitude? How is it measured?**

Lines of latitude are imaginary lines that run completely around the globe-full circles. If you travel along any of these lines you are going east and west. The equator is numbered 0° degrees or 0°. The equator divides the world into two halves or hemispheres: the Northern Hemisphere and the Southern Hemisphere. All places that are north of the equator are said to have north latitude. All of the places south of the equator are said to have south latitude.

All lines of latitude are parallel. This means that no matter how far two lines of latitude are extended they would never meet. Because of this fact, sometimes lines of latitude are also called parallels. In order to prevent maps from becoming too cluttered with lines, map makers show only a few degree lines of latitude, generally 10° or 20° degrees apart. The diagram below shows lines of latitude that are 10° apart. Starting from 0, the equator, the lines of latitude are numbered north and south to 90°. The North Pole is 90° N, and the South Pole is 90 S. Identify the latitude of the following locations on the simple diagram.

![Diagram of latitude lines]

You can easily determine how many degrees separate one place from another place. For example, M is on the 50 N line of latitude; C is on the 10 N line of latitude. By subtracting, we find that M is 40 further north than C. How many degrees of latitude separate the following?

- E from J? __________
- M from H? __________
- L from G? __________
- A from C? __________
- D from B? __________
- K from I? __________
What is longitude? How is it measured?

To locate places exactly on a globe or map it is necessary to have north-south lines—lines of longitude—that cross with the east-west lines of latitude. Once it is known where the lines cross, any place on the globe can be given an exact location. Lines of longitude are imaginary lines that extend from the North Pole to the South Pole. Lines of longitude are not parallel. All the lines meet at the North Pole and the South Pole. All of same-numbered east or west lines of longitude are equidistant apart at the equator. All lines of longitude are measured east or west of the prime meridian.

Prime meridian is another way of saying the 0° line of longitude. Lines of longitude are often shown on maps as being 10° apart at the equator. Sometimes they are shown as being 15° apart, or even 30° apart. How they are spaced and numbered depends on the purpose of the map. The numbering of the lines continues for 180° to the east and 180° to the west, for a total of 360°, a full circle. The prime meridian and its continuation on the other side of the world, 180°, divide the world into two equal parts: The Eastern Hemisphere and the Western Hemisphere.

Identify the missing numbers and the longitude of the following points on the map.
Directions: Use the map on the next page to find the latitude and longitude for the following...

<table>
<thead>
<tr>
<th></th>
<th>Latitude</th>
<th>Longitude</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>How far?</td>
<td>N or S?</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Directions: Use the latitude and longitude coordinates from the maps to find the following ....

<table>
<thead>
<tr>
<th></th>
<th>City</th>
<th>Continent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>40 N</td>
<td>116 E</td>
</tr>
<tr>
<td>2</td>
<td>15 S</td>
<td>47 W</td>
</tr>
<tr>
<td>3</td>
<td>45 N</td>
<td>77 W</td>
</tr>
<tr>
<td>4</td>
<td>60 N</td>
<td>11 E</td>
</tr>
<tr>
<td>5</td>
<td>3 S</td>
<td>38 E</td>
</tr>
<tr>
<td>6</td>
<td>35 S</td>
<td>19 E</td>
</tr>
<tr>
<td>7</td>
<td>51 N</td>
<td>1 W</td>
</tr>
<tr>
<td>8</td>
<td>19 N</td>
<td>99 W</td>
</tr>
</tbody>
</table>
THE GEOGRAPHER’S TOOLS

Maps and Globes
A geographer’s tools include maps, globes, and data that can be displayed in a variety of ways. The oldest known map is a Babylonian clay tablet created about 2,500 years ago. The tablet is about four inches high and shows the Babylonian world surrounded by water. Over the centuries, mapmaking evolved into a very complex task. However, a map’s function has remained the same to show locations of places, landforms, and bodies of water, and where they are in relation to other parts of the earth.

Two Dimensions or Three
A globe is a three-dimensional representation of the earth. It provides a way to view the earth as it travels through space. But since the earth is a sphere, we can see only one half of it at any time. For certain tasks, globes are not very practical because they are not easily portable. People often prefer to use maps, which are two-dimensional graphic representations of selected parts of the earth’s surface. Maps are easily portable and can be drawn to any scale needed. The disadvantage of a map is that distortion occurs as the earth’s surface is flattened to create the map. A cartographer, or mapmaker, reduces some types of distortion by using different types of map projections. A map projection is a way of drawing the earth’s surface that reduces distortion caused by presenting a round earth on flat paper.

Types of Maps
The three types of maps are general reference maps, thematic maps, and navigational maps. A general reference map is sometimes called a topographic map, which is a representation of natural and man made features on the earth. Thematic maps emphasize specific kinds of information, such as climate or population density. Sailors and pilots use the third type of map—navigation maps.

The Science of Mapmaking
A cartographer decides what type of map to create by considering how the map will be used. Keeping that purpose in mind, he or she then determines how much detail to show and what size the map should be.

Surveying
The first step in making a map is to complete a field survey. Surveyors observe, measure, and record what they see in a specific area. Today, most mapping is done by remote sensing, the gathering of geographic information from a distance by an instrument that is not physically in contact with the mapping site. These data are gathered primarily by aerial photography or by satellites. The data gathered includes information such as elevation, differences in land cover, and variations in temperature. This information is recorded and converted to a gray image. Cartographers then use these data and computer software to construct maps.

Satellites
Today, geographers rely heavily on satellites to provide geographic data. Two of the best-known satellites are Landsat and GOES. Landsat is actually a series of satellites that orbit more than 100 miles above the earth. Each time a satellite makes an orbit, it picks up data in an area 115 miles wide. Landsat can scan the entire earth in 16 days.
Geostationary Operational Environment Satellite (GOES) is a weather satellite. This satellite flies in orbit at the same speed as the earth’s rotation. By doing so, it always views the same area. It gathers images of atmospheric conditions those are useful in forecasting the weather.
Geographic Information Systems

The newest tool in the geographer’s toolbox is Geographic Information Systems (GIS). GIS stores information about the world in a digital database. GIS has the ability to combine information from a variety of sources and display it in ways that allow the user to visualize the use of space in different ways. When using the system, geographers must look at a problem and decide what types of geographic information would help them solve the problem. The information could include maps, aerial photographs, satellite images, or other data. Next, they select the appropriate Layers of information. Then, GIS creates a composite map combining the information.

Global Positioning System

A familiar tool of geographers is GPS or Global Positioning System. It was originally developed to help military forces know exactly where they were on the earth’s surface. The system uses a series of 24 satellites called Navstars, which beam information to the earth. The exact position—latitude, longitude, altitude, and time—is displayed on a hand-held receiver. Hikers, explorers, sailors, and drivers use GPS devices to determine location. They are also used to track animals. Geographers use a variety of other tools including photographs, cross sections, models, cartograms, and population pyramids. These tools help geographers to visualize and display information for analysis.

They are looking for patterns and connections in the data they find.

How long ago was the first map created? What function of maps has remained the same over time?

1. A 3 dimensional representation of the earth is called a ____________________.

2. A 2 dimensional representation of the earth or selected potions of the earth’s surface is called a?

3. What advantages do maps have compared to a globe? __________________________

4. What is distortion? What things on a map can be distorted? __________________________

5. What is a cartographer? __________________________

6. The process of putting the round earth on a flat surface is called ____________________.

7. What are the 3 types of maps mentioned in the text? __________________________

8. Based on what you know and what you read in section 2, how do you think mapmaking has changed over time? __________________________
Maps have guided humans through the world for almost all of time. They are considered one of the longest lasting and simplest forms of communication. Maps can contain an enormous amount of power. Power is the ability to do work. Which is what maps do: They work. They work in at least two ways. In the first, they operate effectively. They work, that is.... they don’t fail. On the contrary, they succeed, they achieve effects, and they get things done. Hey! It works! But of course to do this maps must work in the other way as well, that is, toil, that is labor. Map sweat, they strain, they apply themselves. The ends achieved with so much effort, the ceaseless reproduction of the culture that brings them into being.

Maps are representations and simplifications of the earth’s surface. Each map is made with a specific purpose in mind. Each map is intended to show something. What the map shows is a choice mad by the cartographer or person making the map?

Compile a list of possible reasons to make or use a map. Be creative and try to be as specific as possible.

In order to communicate, every map must include six essential components. On every map that we will make in this class we must include

**TODALS.**

T_____________________________
O_____________________________
D_____________________________
A_____________________________
L_____________________________
S_____________________________
**PLANAR PROJECTIONS**

A planar projection is a projection on a flat surface. This projection is also called an azimuthal projection. It distorts size and shape. To the right is a type of planar projection.

The azimuthal projection shows the earth so that a line from the central point to any other point on the map gives the shortest distance between the two points. Size and shape are distorted.

**CONICAL PROJECTIONS**

A conical projection is a projection onto a cone. This projection shows shape fairly accurately, but it distorts landmasses at the edges of the map.

Conical projections are often used to show landmasses that extend over large areas going east and west.
Cylindrical Projections

A cylindrical projection is a projection onto a cylinder. This projection shows the entire earth on one map. Included here are three types of cylindrical projections.

In the cylindrical projection called Mercator, the shapes of the continents are distorted at the poles and somewhat compressed near the equator. For example, the island of Greenland is actually one-eighth the size of South America.

The cylindrical projection called homologous is sometimes called an "interrupted map," because the oceans are divided. This projection shows the accurate shapes and sizes of the landmasses, but distances on the map are not correct.

A Robinson projection is a type of cylindrical projection, commonly used in textbooks. It shows the entire earth with nearly the true sizes and shapes of the continents and oceans. However, the shapes of the landforms near the poles appear flat.
<table>
<thead>
<tr>
<th>Projection Name</th>
<th>Drawing (Looks Like)</th>
<th>Used For What (BestQuality)</th>
<th>Distortions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planar (Azimuthal)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cylindrical (Merecator)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cylindrical (Interrupted)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Robinson</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The five color population map is an example of a special purpose map called a choropleth map.

1. Plot the data on the graph. Before we locate countries or label anything on the map, we must determine what our categories will be. Use the data from the countries ranked by population to create a line graph that shows the distribution of the countries.

2. Create 5 categories (Groups), when all the data has been plotted, create 5 categories by looking for gaps in the data. Categories should indicate that the nations of that color have something in common.

3. Locate nations on the map, and color them based on the category (population size) they are in. After you have created 5 groups, begin locating all countries in group #1 and color all of them the same color. It is necessary to write the name of each country on the map, and color the country based on the group it falls into. Latitude and longitude are include to help in locating each country.

4. Include all essential parts of the map.
Title
Orientation
Date
Author
Legend
Scale

<table>
<thead>
<tr>
<th>Country</th>
<th>Population</th>
<th>Continent</th>
<th>Latitude</th>
<th>Longitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 China</td>
<td>1,339,170,000</td>
<td>Asia</td>
<td>40 N</td>
<td>100 E</td>
</tr>
<tr>
<td>2 India</td>
<td>1,184,597,000</td>
<td>Asia</td>
<td>20 N</td>
<td>80 E</td>
</tr>
<tr>
<td>3 Nigeria</td>
<td>158,259,000</td>
<td>Africa</td>
<td>10 N</td>
<td>10 E</td>
</tr>
<tr>
<td>4 Japan</td>
<td>127,380,000</td>
<td>Asia</td>
<td>40 N</td>
<td>140 E</td>
</tr>
<tr>
<td>5 France</td>
<td>65,447,374</td>
<td>Europe</td>
<td>45 N</td>
<td>0</td>
</tr>
<tr>
<td>6 Thailand</td>
<td>63,525,062</td>
<td>Asia</td>
<td>15 N</td>
<td>100 E</td>
</tr>
<tr>
<td>7 South Korea</td>
<td>49,773,145</td>
<td>Asia</td>
<td>35 N</td>
<td>130 E</td>
</tr>
<tr>
<td>8 Spain</td>
<td>46,951,532</td>
<td>Europe</td>
<td>40 N</td>
<td>4W</td>
</tr>
<tr>
<td>9 North Korea</td>
<td>23,991,000</td>
<td>Asia</td>
<td>40 N</td>
<td>127 E</td>
</tr>
<tr>
<td>10 Mozambique</td>
<td>23,406,000</td>
<td>Africa</td>
<td>18 S</td>
<td>35 E</td>
</tr>
</tbody>
</table>
DIRECTION AND DISTANCE ACTIVITY

Name ______________________________ Hour _________ Due Date __________ Score _______ / _______

1. What on the map indicates direction? _______________________________

2. What on the map indicates distance? _______________________________

3. If you were in Lawton, in which direction would you travel to reach each of the following destinations?
   Use directions such as *northwest* when necessary.
   
   A. Burkburnett, Texas
   B. Frederick, Oklahoma
   C. Duncan, Oklahoma
   D. Vernon, Texas
   E. Altus, Oklahoma
   F. Ft. Sill, Oklahoma
   G. Marlow, Oklahoma
   H. Anadarko, Oklahoma
   I. Electra, Texas
   J. Waurika, Oklahoma
   K. Chickasha, Oklahoma
   L. Hobart, Oklahoma

4. Using the scale on the map, find the distance between the following locations.
   
   A. Lawton and Hobart
   B. Burkburnett and Marlow
   C. Ft. Sill and Vernon
   D. Duncan and Altus
   E. Electra and Frederick
   F. Chickasha and Waurika
   G. Hobart and Vernon
   H. Marlow and Lawton
   I. Hobart and Altus
   J. Duncan and Anadarko
   K. Electra and Lawton