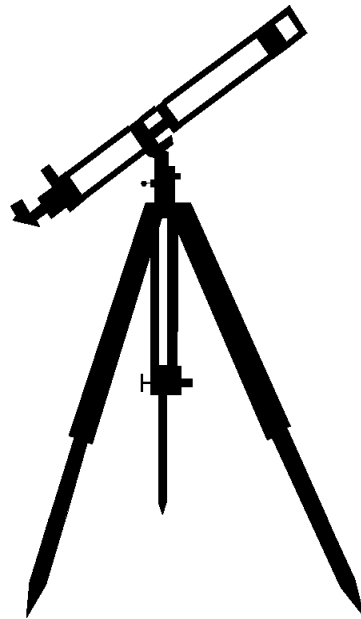




Universe Cycle
The Search for Our Beginnings



SECOND GRADE GEOGRAPHY



1 WEEK
LESSON PLANS AND
ACTIVITIES

UNIVERSE CYCLE OVERVIEW OF SECOND GRADE

UNIVERSE

WEEK 1.

PRE: *Discovering stars.*

LAB: *Analyzing the geometric pattern of constellations.*

POST: *Exploring myths about the constellations.*

SOLAR SYSTEM

WEEK 2.

PRE: *Comparing the 9 planets of our Solar System.*

LAB: *Comparing the distance between planets.*

POST: *Exploring terrestrial and gas planets.*

EARTH

WEEK 3.

PRE: *Comparing the Earth and the Moon.*

LAB: *Exploring the characteristics of the Earth's surface.*

POST: *Exploring the features of the Moon.*

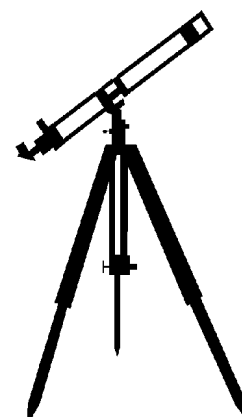
GEOGRAPHY

WEEK 4.

PRE: *Contrasting different types of maps.*

LAB: *Exploring longitude and latitude.*

POST: *Comparing maps and globes.*



UNIVERSE CYCLE - GEOGRAPHY (2)

PRE LAB

OBJECTIVE:

1. Comparing a map with a photo.
2. Contrasting different types of maps.

VOCABULARY:

atlas
map
photo

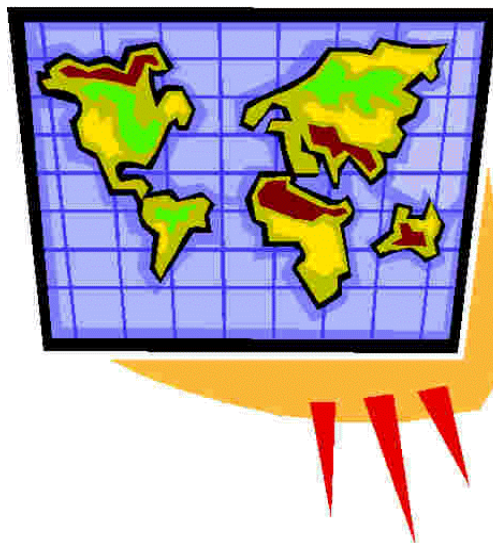
MATERIALS:

Inflatable World Globe
different types of maps or atlases

BACKGROUND:

Hopefully students have learned that maps are very important. Maps are representations of the Earth's surface. Maps are abstractions because they show simplified versions of surface features. They are designed to show detailed information about a limited number of topics. Maps are thus not pictures of the Earth's surface. A map can show many things that a picture cannot show. Maps look different in many ways from a photograph of the Earth. Most maps are two dimensional representations of the three dimensional surface of the Earth, and are drawn on paper. Increasingly, however, computers are providing us with three dimensional virtual maps.

Students look at different kinds of maps.



DIFFERENT TYPES OF MAPS

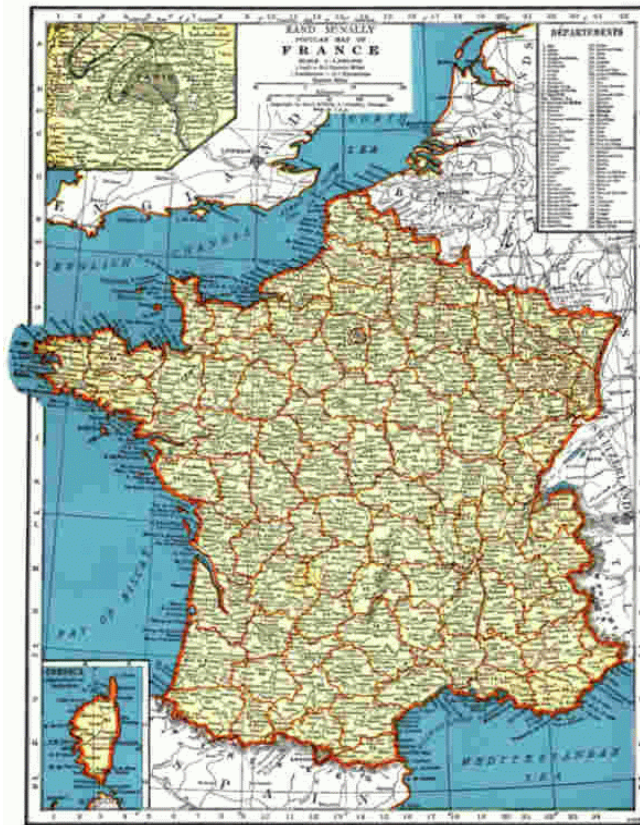
road map
bus route map
topographic map
map of parks
map of cities
vegetation maps
historical maps
"war" maps
map to friends house
map to different businesses
treasure map
star and Solar System maps

PROCEDURE:

1. Explain what a map is to the students. Emphasize to them that maps are usually some kind of representation of the Earth, or part of its surface, and that maps have a particular purpose. If you have an atlas available, this is a good time to show it to the class. Explain that it is a collection of maps to help people locate different features or places.

2. Have the students list the maps with which they are familiar. They may think of unusual sources, such as maps in video games. List the maps on the board.

3. Have the students look at many different representations of the Earth. Be sure to include maps, photographs, and a globe. Ask the students to find the map, globe, or picture that best represents the Earth. Unless you have an extraordinary flat map, the globe is the most realistic. However, if you are trying to find something in a city, a globe is not detailed enough. Flat maps, globes, and photos all have their place.



A political map of France.

4. Ask the students to bring a "map" from home that they would like to share with the class. Tell them that if they do not have a road map, they can get a map from a newspaper, telephone book, or sometimes advertisements from a local business. You may wish to create a map display with the material that the students bring to class.



UNIVERSE CYCLE - GEOGRAPHY (2)

LAB

Students plot their room in longitude and latitude.

OBJECTIVE:

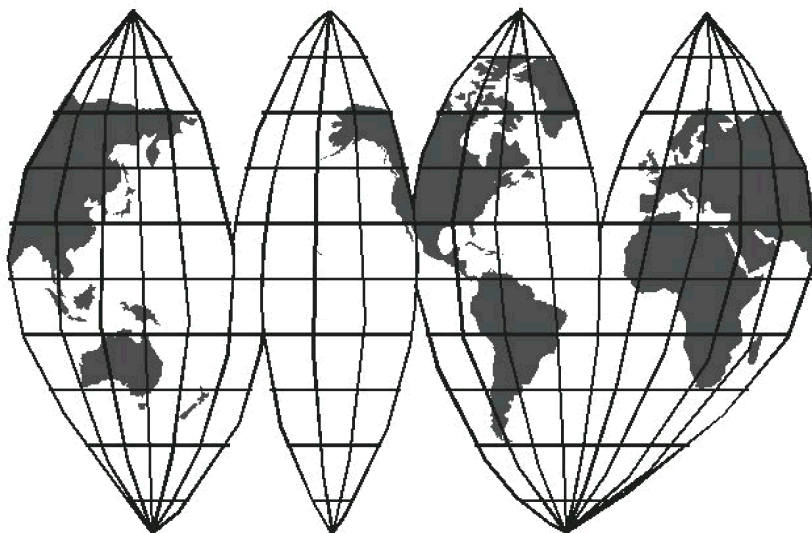
1. Discovering location.
2. Exploring longitude and latitude.

VOCABULARY:

east
equator
latitude
longitude
north
south
west

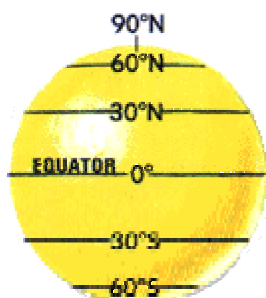
MATERIALS:

Inflatable World Globes
lab sheet



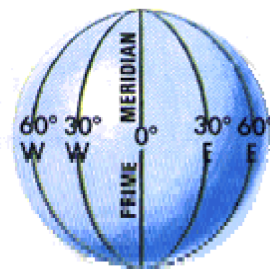
BACKGROUND:

Describing your location is very important if you want to tell someone where you are. On a map, the east-west lines of latitude and the north-south lines of longitude give every point on the map a unique location. They divide the Earth into a grid, that is visible on the inflatable globes. Each line in the grid is given a "number" which helps us to locate our position.



Latitude

Lines of latitude are parallel to each other. They run east-west around the globe. We measure latitude starting at the equator. The distance from the equator to the North Pole is 1/4 of the distance around the Earth. So the North Pole is at 90 degrees north latitude. Lines of longitude converge in the north and south pole and are not parallel. This distance is measured in degrees. Earth, as a circle, is divided into 360 degrees (360°).



Longitude

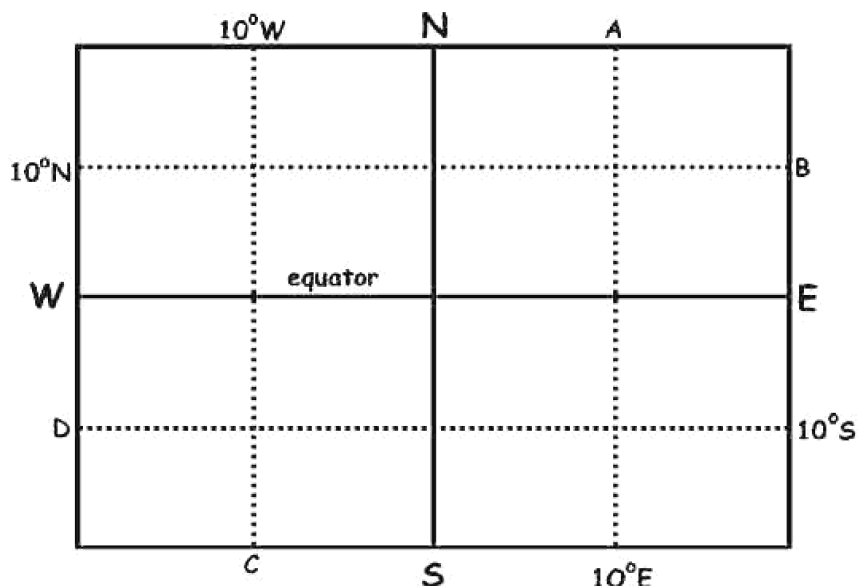
In this exercise students start to think about how to locate themselves. They are introduced to the terms and meaning of

latitude and longitude. However, rather than working with these terms in detail, the main thrust of the lab is to get the students to recognize geographic directions.

PROCEDURE:

1. Have the students look at the Inflatable World Globes. Have them find the lines that go from the North Pole to the South Pole (longitude lines) and the lines that go across the globe, parallel to the equator (latitude lines). Tell them that these lines help to find where you are on the Earth's surface. Explain that without these lines, it would be difficult to find locations.

Explain that the lines can look all the same if you do not somehow make a system that identifies them.

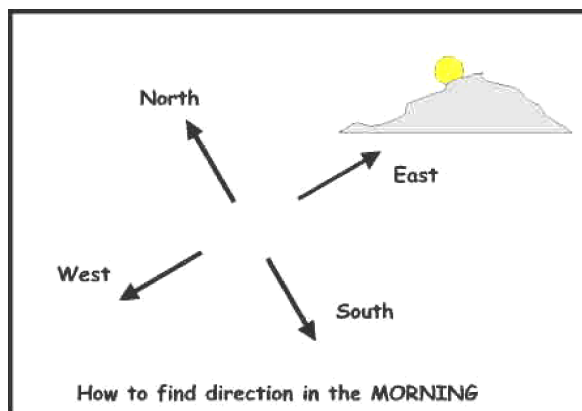


2. Explore the directions of North, South, East and West with the class. Ask the students how they would recognize these directions. Use the diagram below to show them some simple clues for finding these directions. Draw it on the board as you explain the following information:

a) The Sun and Moon both appear to rise in the eastern sky and appear to set in the western sky (we say “appear” because it is actually the Earth rotating that causes this effect). East and west are thus opposite directions.

b) If you are facing the east, your left hand points to the north and your right hand points to the south. These directions are opposite too.

Have the class locate north in the classroom by using this method. You may wish to determine North in advance, by either locating the Sun in the morning or by using a compass. The idea is for students to learn the general direction of north. Tell them that north is not “up” and south is not “down”. This common misconception makes it seem that north is toward space and south is inside the Earth. Make sure the students understand that geographic directions run along the Earth's surface.



3. To better illustrate how to divide a map into sections, hang string in the classroom to symbolize lines of longitude and latitude (if you do not want to use string you may want to use the floor tiles as a guide, if your room has them). Longitude lines will go from north to south. Latitude lines will go east to west. As shown in the diagram below, divide the classroom into four sections, using N-S and E-W lines. Label the E-W line "Equator". Further divide each quarter of the classroom with two more strings. Label these as show in the diagram. Put up signs to illustrate how to identify the lines. This simplifies latitude and longitude, but gives the students a feeling of how the system works.

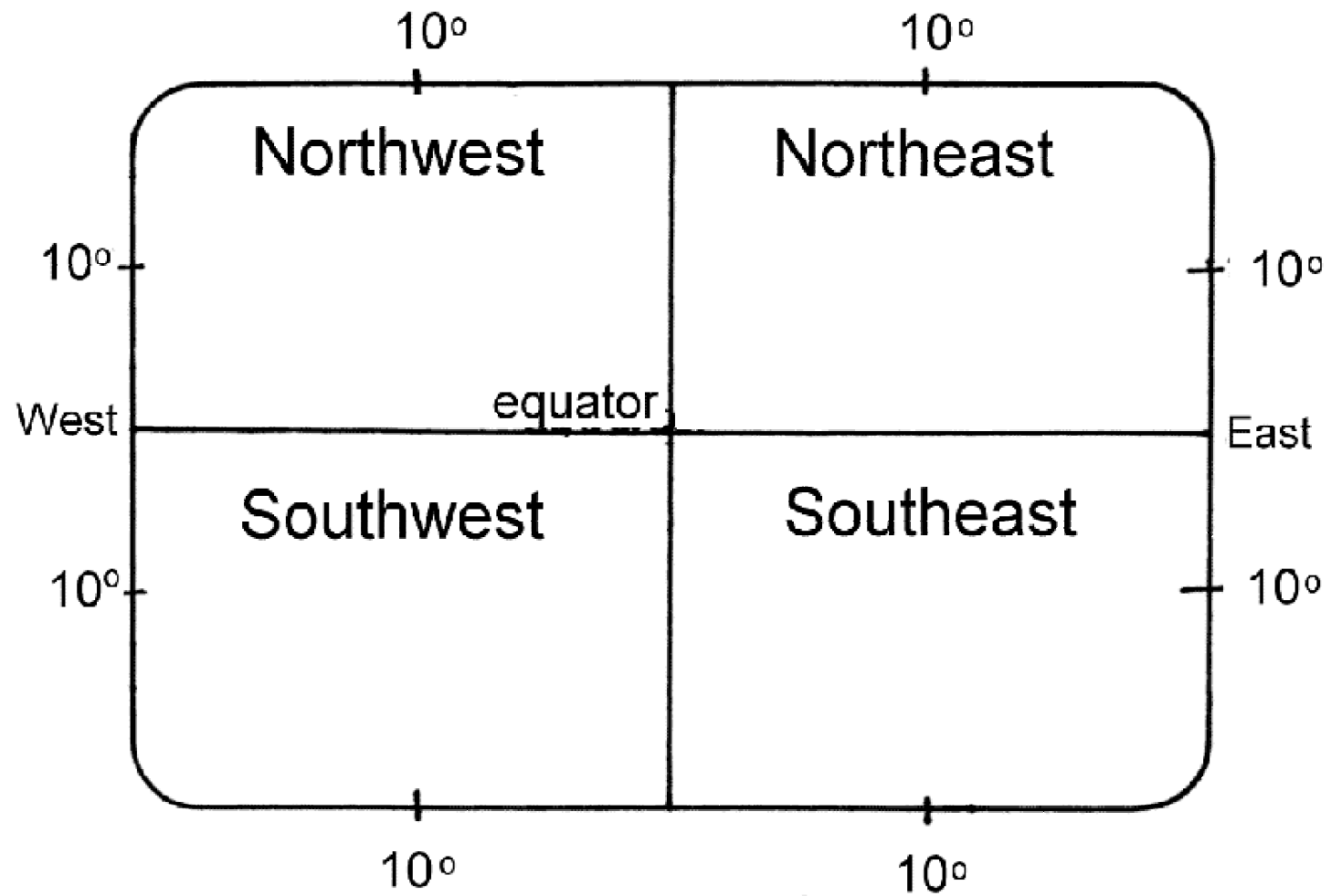
You may wish to have the students put up the string and signs. If you have crepe paper left over from another project, you may want to decorate the classroom with latitude and longitude streamers.

4. Have the students try to find their desk on the lab sheet. Go over that the N10E longitude line refers to line A, N10E latitude would refer to line B, S10W longitude is line C, and S10W latitude is line D. The students should not try to plot points, which is an upper level skill. They should just try to get a sense of direction.

If the students are having a hard time, try to have them remember that "N" latitude means from the equator north, "S" latitude means going south from the equator. "E" longitude a line east of the N-S line in the classroom. "W" longitude is a line west of the same N-S line.

5. Have them locate other different items in the class so they start to fill up the grid with items that are in the classroom.

UNIVERSE CYCLE - GEOGRAPHY (2) LAB



UNIVERSE CYCLE - GEOGRAPHY (2)

POST LAB

Students make a puzzle map of the world.

OBJECTIVES:

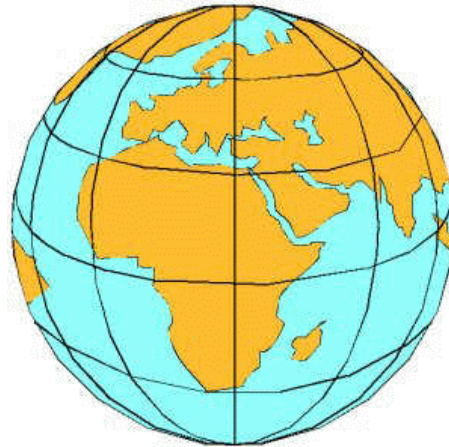
1. Discovering how to read a globe.
2. Comparing maps and globes.

VOCABULARY:

equator
latitude
longitude

MATERIALS:

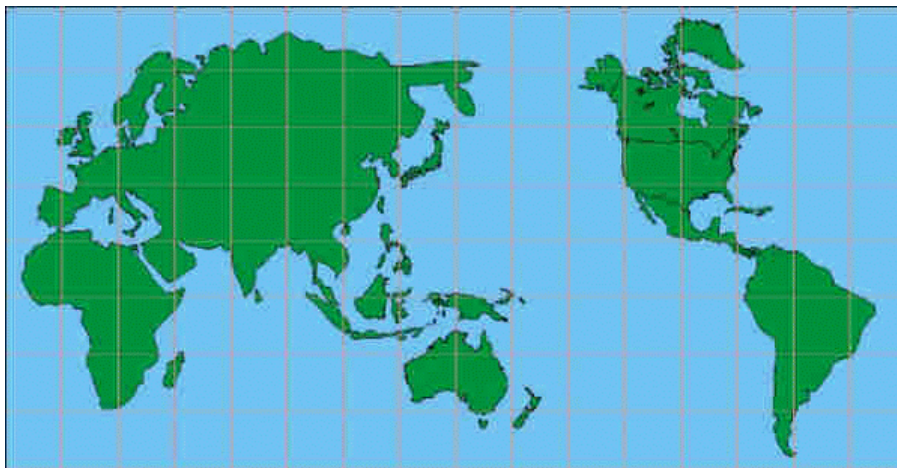
Inflatable World Globes
flat map
worksheet
Internet



BACKGROUND:

The planet Earth is approximately spherical in shape. In terms of maps, this means that a globe most accurately portrays the shape of the Earth's surface. The Earth's shape also effects the appearance of latitude and longitude lines. As the cartoon globe above shows, latitude (East-West) lines remain parallel from the Equator to the poles. In contrast, longitude lines converge at the poles.

Flat maps distort the shape of the Earth because they are two dimensional



projections of the real three dimensional surface. For example, a common flat map, called the Mercator projection, keeps lines of both latitude and longitude parallel. It thus distorts the areas on the map. For example a Mercator projection map makes Greenland look bigger than South America,

when the opposite is really true. There are many different types of flat maps.

PROCEDURE:

1. Review latitude and longitude. Remind students that latitude lines run East-West, and longitude lines run North-South. Explain that these lines are the basis for locating where you are on the Earth's surface.

2. Show the students a globe and a flat map (or project the map examples on the following pages). Ask them to describe the differences between them. Point out that the globe is a much more accurate model of the real Earth, in terms of shape and distance. Have the students try to distinguish some of the ways that flat maps distort shapes on the "real" Earth. For instance, on a flat map, Greenland looks very large, often bigger than South America. In reality it is much smaller. Have the students look for other distortions.

The main objective is for students to look and compare different types of maps. You can compare and contrast any of the points of a globe on a flat map depending on your background and the interest of the students.

You may want to use the following link to Hammond World Atlas Corp. who shows the different types of maps through animation.

<http://www.hammondmap.com/start30.html>

3. Have the students compare latitude and longitude lines on the globe and the different maps. They will see that longitude lines converge at the poles on the globe. Near the poles on the flat maps, they remain parallel, and are distorted.

You may want to make a chart of the student's observations.

	LATITUDE	LONGITUDE
globe	horizontal lines, that are somewhat the same thickness	go from north to south pole, evenly space all over the Earth
flat map	horizontal lines that are thicker in the north and south region	equal lines, from north to south vertical

4. You may want students to use the worksheet and put in longitude and latitude and then cut out their own puzzle of the world.

UNIVERSE CYCLE - GEOGRAPHY (2) - POST LAB

