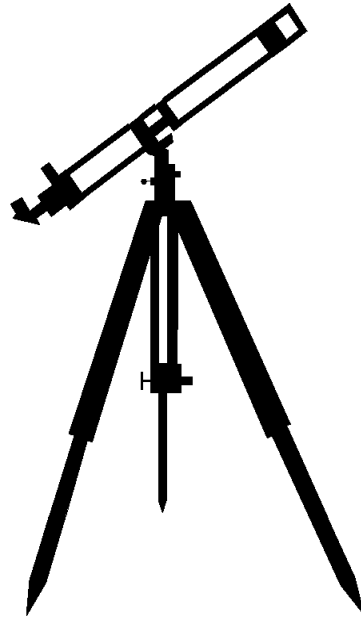




Universe Cycle
The Search for Our Beginnings



FIRST GRADE GEOGRAPHY



1 WEEK
LESSON PLANS AND
ACTIVITIES

UNIVERSE CYCLE OVERVIEW OF FIRST GRADE

UNIVERSE

WEEK 1.

PRE: *Describing the Universe.*

LAB: *Comparing and contrasting bodies that reflect light.*

POST: *Exploring the meaning of stars.*

SOLAR SYSTEM

WEEK 2.

PRE: *Differentiating between a star and a planet.*

LAB: *Discovering the surface of some planets.*

POST: *Comparing and contrasting the planets of our Solar System.*

EARTH

WEEK 3.

PRE: *Comparing night and day.*

LAB: *Exploring rotation on the Earth's axis.*

POST: *Analyzing evidence that the Earth rotates.*

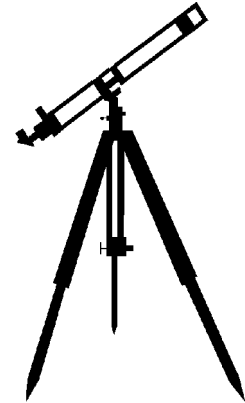
GEOGRAPHY

WEEK 4.

PRE: *Discovering a relief map.*

LAB: *Exploring with a compass.*

POST: *Comparing geographic locations.*



UNIVERSE CYCLE - GEOGRAPHY (1)

PRE LAB

Students identify structures on a relief map.

OBJECTIVES:

1. Discovering a relief map.
2. Exploring different features on the Earth's surface.

VOCABULARY:

bay
geography
globe
map
mountain
peninsula
plain
relief

MATERIALS:

relief maps (world, U.S., or local)
Inflatable World Globe
toy boat



BACKGROUND:

According to folklore, Christopher Columbus was practically the only person of his day who thought that the Earth was spherical in shape. Actually, the ancient Greeks Pythagoras and Aristotle both taught that the Earth was a sphere, and its diameter was calculated within 50 miles of the correct value by Erastosthenes in about 220 BC. Educated people of Columbus' day were aware that the Earth was spherical.

The ancient Greeks used several lines of evidence to demonstrate the spherical shape of the Earth. They noted that the Earth's shadow on the Moon is curved during an eclipse, and ships going out of sight on the ocean disappear from the bottom up, as they move past the horizon. In 1522 the concept was proved to everyone when one of Magellan's ships returned to Europe, completing the first Western circumnavigation of the Earth. Today, pictures from spacecraft clearly demonstrate the spherical shape of the Earth. Students may be used to this concept, from watching media or video games.

We now know that the Earth is not a perfect sphere. Because of its rotation, the Earth actually flattens out at the poles, and bulges slightly at the equator. In reality, the Earth is thus slightly egg or pear shaped.

The Earth also differs from a perfect sphere in that its surface is irregular. These changes in elevation on the Earth's surface, such as mountains, valleys, ocean basins, and plains, are called relief. Relief is intuitively understood by children because they see changes in the Earth's surface whenever they go outside. In contrast, the spherical shape of the Earth is not apparent.

PROCEDURE:

1. Explain that the Earth is spherical in shape. You may wish to show them a globe, and pictures of the Earth from space. Ask the students if they can see the spherical shape of the Earth when they go outside. They should answer no. Discuss that early people thought that the Earth was flat, because it looked that way.

Explain that it took many years for early scientists to determine the shape of the Earth. Go through the reasons of why we know it is spherical. Using the globe and toy boat, show the children why a boat might disappear from the bottom up. Tell them that they can see this if they watch a boat go over the horizon with a pair of binoculars.

2. Explain that the Earth's surface has relief. Introduce the following words to your students. Include any other words that may be appropriate for your region.

HILL - A large "bump" on the surface of the Earth, usually rounded on top. Use a local example that the children might know.

MOUNTAIN - A larger "bump" than a hill. A raised area is called a mountain if it is more than 2000 feet above its surroundings. A smaller "bump" is a hill.

VALLEY - A low, flat area between mountains or mountain ranges.

BAY - A protective, wide dent in the shore of an ocean or lake.

PENINSULA - Land that sticks out into the water, surrounded by water on 3 sides.

PLAIN - A flat area that extends over hundreds of miles.



3. Have the students explore the relief maps. Let them use their fingers to find examples of the vocabulary words listed above.

UNIVERSE CYCLE - GEOGRAPHY (1)

LAB

Students learn to read a compass.

OBJECTIVES:

1. Exploring how to use a compass.
2. Discovering how to find directions.

VOCABULARY:

compass
east
north
south
west

MATERIALS:

compasses
Inflatable World Globes
"post it" stickers
bar magnets
pencil
worksheet



BACKGROUND:

Geophysicists theorize that circulation of molten metal in the Earth's outer core generates the Earth's magnetic field. At the present time, the field is oriented so that the north end is positive, and the south end is negative. These are called, respectively, the North and South Magnetic Poles. They are not the same as the geographic poles, which mark the ends of the Earth's rotational axis. The magnetic poles actually move around constantly. It is easiest to say that the Magnetic North Pole is near the geographic North Pole.

The compass is a device that helps us locate north and south. A compass consists of a small needle which is free to swing horizontally. A small magnet is attached on one end of the needle and the other end is balanced so the needle swings easily. The magnet pulls the needle to line up with the Earth's magnetic field. One end of the needle (often colored red) thus points north, while the other end points south. Once the needle points to north, you move the North position on the compass to coincide with the needle. Then you can see the directions easily.

PROCEDURE:

1. Ask the students which way is north. Many will say "up," as if the north pole is in the sky. Describing the direction of the north pole is difficult, because north, in and of itself, describes location.

Give each student or student group an inflatable globe. Have them put a "post it" sticker with a "N" on it on the North Pole and an sticker with an "S" on the South Pole.

Ask them again if north is up. It should now be clearer to them that north and south are directions on the Earth's surface.

2. Give each student or student group a compass. Explain how the compass works. Review the notation on the compass. Let them experiment with them briefly, learning that the needle always points the same direction.

3. Give each student or group a bar magnet, and have them experiment with the compass and magnet. Tell them which side of the magnet is north and which is south. The needle will line up with the north end of the magnet. This works on the same physical principle as the Earth's magnetic field. However, the local magnetic field of the magnet is stronger than the Earth's magnetic field, so the compass "feels" it more and lines up with it. Discuss why this happens with the class.

4. Now that the students have found North and South, tell them that East is half way between North and South on the right side of the compass, and that West is half way between North and South on the left side.

Have the students put the compass on the worksheet where it is labeled "compass." Have the students put the bar magnet at each of the lines, with the North end point outward. Go over what happens, and why, at each position.

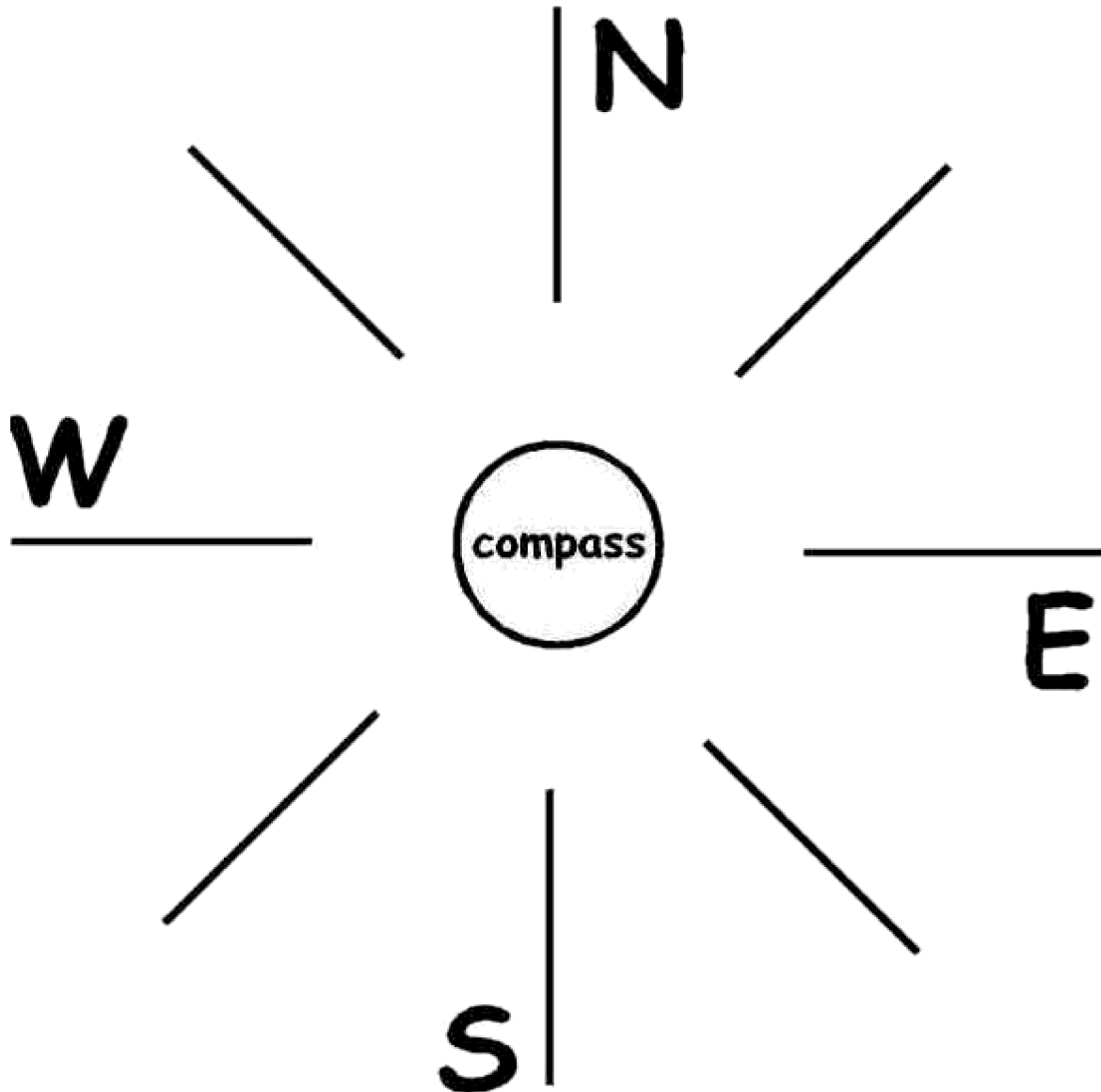
5. Ask the students from what direction the Sun appears to rise (the East). Ask them if they can use this knowledge to find North, West, and South. Go over this carefully with the students. West would be directly opposite east. North would be left of east-west line and south would be right of the east-west line. Ask the class in what direction the Sun sets (the West). Ask them what direction the Sun moves in the sky (East to West).

6. You may want to go outside to find where north and south are located from the school. Ask students, in what direction the Sun rises? That is the first clue of east. Where does the Sun set? In the west. They can figure north and south from these two pieces of observation. So students can locate the general direction without a compass.

Note: be sure to store the compass and magnets separately, so as not to demagnetize the compasses. A compass works best outside, when there is no interference of electricity or metal.

UNIVERSE CYCLE - GEOGRAPHY (1) LAB

Put the Compass in the Center of the Circle. Put the Bar Magnet along Each Line. What Happens to the Compass Needle?



UNIVERSE CYCLE - GEOGRAPHY (1)

POST LAB

Students identify places on a world and U.S. map.

OBJECTIVES:

1. Exploring north and south on a map.
2. Comparing geographic locations.

VOCABULARY:

geography
map
north
south

MATERIALS:

worksheet
crayons
World Placemats
U.S. Placemats
bingo chips



BACKGROUND:

It takes students time to learn geographic locations around the world. Just one exposure to a location does not guarantee that a student will remember it forever. Familiarity, with a globe and maps allows students to visualize and keep locations in mind.

PROCEDURE:

1. Give the students the World and United States placemats. Make sure students recognize that the U.S. map is an enlarged portion of the world placemat.

Have the students locate different geographic locations. As you name each location, say a little about the area. As the students find each location, have them put a “bingo chip” on the area. If you have students from another country, locate those areas.

Here are some examples:

A. Find Egypt. This is the area where the Egyptians made pyramids from large rocks many, many years ago.

B. Find Hawaii. This is a state of the United States. It is found in the Pacific Ocean.

C. Find Mexico. This country is located in the southern portion of North America.

2. Have the students color the worksheet. Have them locate South America, Europe, Africa, Asia, and the Atlantic and Indian Oceans on the world placemat.

You may want to tell students that most maps are made such that the North direction is always up and South is always down. East would then be on the right and West would be on the left. The North direction is often indicated by a labeled arrow somewhere on the map.

UNIVERSE CYCLE- GEOGRAPHY (1) POST LAB

On the globe below, color the land brown, and the water blue. Label North, South, East, and West. Label Africa, Europe, Asia, Indian Ocean, and Atlantic Ocean.

