

EDUC Q405
Saturday Science
Spring 2011
Week #5

Learning Objectives:

- Students will explain the relation between Earth's position and our four seasons when looking at the globe and flashlight positioning.
- Students will explain that Earth has a tilt that helps us to determine what season we are in. They will show this by answering formative assessment questions along throughout the lesson.

Indiana Academic Science Standards:

Process Standards (NOS):

- Conduct investigations that may happen over time as a class, in small groups, or independently
- Generate questions and make observations about natural processes.
- Make predictions based on observations.
- Discuss observations with peers and be able to support your conclusion with evidence.

Content Standards:

- **K.2.3** - Describe in words and pictures the changes in weather from month to month and over the seasons.
- **2.2.1** - Construct and use tools to observe and measure weather phenomena such as precipitation, changes in temperature, wind speed and direction.
- **2.2.5** - Ask questions and design class investigations of the effect of the sun heating the surface of the earth.
- **2.2.7** - Investigate how the sun appears to move through the sky during the day by observing and drawing the length and direction of shadows.

Teacher Content Knowledge:

- Teachers need to be able to explain each of the season's characteristics.
- Teachers need to be prepared for any possible question involving the seasons, whether it's the season's weather, temperatures, or typical phenomena that typically occur.
- Teachers need to know the position of the sun for each of the seasons.
- Teachers need to be familiar with common vocabulary that we focus on (rotation, revolution, axis, etc).
- Teachers need to be able to pull together all of the previous weeks' lessons and help the students to understand the driving question that we have been focusing on this whole time: What causes each of the four seasons?

Materials:

Large, wide-mouth container, such as a mayonnaise jar

Hot & cold water (we assume this is already in the room or we can get from bathroom)

Ice cubes (small bucket or small bag is fine)

Small plate to hold ice cubes

Index card

1 bucket or similar large container (big enough for kids to reach hand down into it)

1 lb container of Crisco all-vegetable shortening

4 Ziploc sandwich bags (ones that seal or actually "Ziploc")

4 sheets of poster board

Construction paper (1 booklet is fine)

White paper (computer paper is fine-40 or so sheets is fine)

Glue sticks (about 12)

Scissors (about 12)

Markers (the amount we get every week is fine, about 6-7 boxes) *Yellow markers for sure please 😊

Crayons (the amount we get every week is fine, 6-7 boxes)

Pencils (5-10 for those kids that always want a pencil)

Paper plates (plain white any kind, regular size)

Washable finger paints (red, orange, brown....fall colors if possible, if not, any colors are ok)

4 flashlights

4 globes (standard or smaller size is ok)

Lesson Description:

[We want the last day to tie everything together, as well as include lots of different hands on activities that they will enjoy doing to end things on a very positive note.] ☺

-Students will draw a picture of what rotation and revolution look like individually while we wait for everyone to arrive.

-We will quickly discuss that today will be “summing up” or bringing everything we have learned all together.

- will start with a fun read-aloud about seasons.

-We will be having 4 stations during this class period (fall, winter, spring, summer). Kate will lead the spring group, Allison will lead the Fall group, Jennifer will lead the Winter group, and Whitney will lead the Summer group.

-We will tell the students “Today, you each get to act like you are Earth! You will be rotating going to every season until you make a complete rotation!”

-We are planning on about 15 minutes per station. The goal is to get through 2 stations before break, and then the other two after break. Kids will be divided into even number groups, and each teacher will stay at her designated season station.

-Every group will begin by using the globe and flashlight and showing the amount of sunlight received during that specific season at the beginning of every new group of kids. Next students will experience the activity related to the common weather in each season, which is affected by the amount of sunlight received from the sun.

-Fall activity station: They will be reviewing/focusing on observations. Allison will be showing them a picture of a tree in the fall time. Students will get to make observations and create a finger painting to include all the observations they made.

-Winter activity station: They will be focusing on how animals stay warm in the winter time and make connections to why coats are important during this season. The activity involves a bucket of ice water and Crisco. The kids put one hand in the ice water and tell Jennifer how it felt. They put the other hand in a plastic bag of Crisco. It is a bag, Crisco, and another bag. That way they don't get Crisco all over their hand. That hand stays warm.

-Spring activity station: Students will discuss how their environment changes from winter to spring. Then, they will discuss part of that has been affected by the warm weather and rain. Next they will experience how rain occurs. They will use hot water, ice cubes, index card, and jar to make rain.

-Summer activity: We will be focusing on summer being the time when Earth receives the most direct sunlight. Kids will be creating their own “sun” out of paper plate, cut out hand tracings, and other materials.

-The 4th station, or last station, the kids are at is where they will work to make a poster on just that season. The teacher will help facilitate writing on the poster, making sure to include important aspects.

- How much sunlight Earth receives during that month?

- Weather?
- Environment/nature characteristics?
- Clothing needed?
- Activities?
- Longer daylight time/shorter daylight time?

-Each child will make a representation of that Season on a sheet of white paper to attach to the poster as well.

-We will allow each group to present the poster to the rest of the class.

-Clean up/pass out each kid's folder of papers throughout the program.

Assessment:

Students will be assessed through observation and participation. The teaching team will use formative assessment questions in order to gain more knowledge on the students understanding. When each of the students rotate to each station, they will be doing an experiment or craft involving each of the seasons. They will be assessed on their knowledge of the seasons and their comprehension of where the sun is position on the Earth during each season.

Handouts: (below)

Name: _____

What do Revolution and Rotation look like?