

Noreen Casabar

Name of Lesson: Changing Weather in the Seasons

Grade Level: Kindergarten

Science Concepts and Conceptual Understanding:

- There are four seasons in a calendar year (Spring, Summer, Fall and Winter).
- The weather changes during the seasons.
- Weather change can be described in terms of temperature.
- Thermometers measure temperature (in degrees Fahrenheit or Celsius). As the temperature increases the reading on the thermometer also increases (ie. on a hot day the temperature will be higher than on a cold day).

Possible Misconceptions:

- We experience seasons because of the earth's changing distance from the sun (ie. closer in the summer, farther in the winter).
- One degree of temperature is smaller on the Celsius scale than on the Fahrenheit scale.
- Heat is a substance.
- Temperature is a property of a particular material or object. (ie. Metal is naturally cooler than plastic).
- The temperature of an object depends on its size.
- Heat and cold are different, rather than being opposite ends of a continuum.
- Heat only travels upward.

Science Process/Inquiry Skills:

- Students are *observing* when we go outside and talk about the weather and temperature.
- Students are *hypothesizing* when they provide explanations about their season that are consistent with they have observed and experienced.
- Students will be *predicting* when they determine what the temperature (both inside and outside the classroom) will be in a month.
- Students are *interpreting* by seeing patterns among students drawing and ideas in their season groups.
- Students are *communicating* their ideas through drawings and explaining their ideas aloud to group members and the rest of the class.

List of Materials:

- Bag of items used in the different seasons (i.e. hat, gloves, scarf, sunglasses, shorts, sunscreen, artificial flowers [spring] & leaves [fall], snowflake cookie cutter, etc)
- Crayons/markers/colored pencils
- White paper labeled with seasons (6/season)
- One digital thermometer (for teacher use)
- Temperature recording sheet [attached]
- Rubric (drawing, sentence, temperature) [attached]

Safety Precautions:

- Appropriate use of materials; not using crayons, markers etc to disrupt other students.
- Students should not run towards the road when going outside to measure temperature.

Instructional Objectives: Students will be able to...

- Draw picture illustrating weather during the seasons
- Explain their drawing (written and orally)
- Describe the weather in each season using words such as (hot, cold, sunny, snowy, etc)

K.2.3: Describe in words and pictures the changes in weather from month to month and season to season

Lesson Procedures

1) Engage Phase:

First, the teacher will tell all of the students to come to the carpet. She will begin the lesson by asking the students, "Raise your hand if you can tell me what the name of one of the seasons is?" The teacher will then call on a student for his/her answer. Whether a student is correct or not, the teacher will ask the other students if they agree with the students' response. After the class discussion, the teacher will write the seasons on the board. The teacher will then tell the students that she brought a bag of clothing that someone might wear during the different seasons. She will then instruct the students that she is going to pull out the articles of clothing one at a time and the students, as a whole class, are going to decide what season the article of clothes goes into, making sure that everyone is in agreement. The teacher will pull out the first article of clothing and ask, "Can any tell me what season they think this [name of clothing] would go into?" She will call on a particular student for their answer. The teacher will then ask the student why he/she is deciding to place that item of clothing in that particular season. * *"How does it feel in (the particular season)?"* She will then ask the rest of the class if they agree. If all the students agree the teacher will then write the word on the board under the season that the student chose. After all the articles of clothing have been discussed, the teacher will then ask the class if there are any that they would like to move. If the students do choose to move something, then the teacher will ask them why they decided to move the item.

Some **[Attention- focusing]** productive questions for this phase: **How does it feel in (the particular season)?* Have you seen anyone wearing a heavy coat in the summertime?

2) Explore Phase:

Teachers will randomly hand out a piece of blank paper to each student. On the top of each paper, one of the seasons will be written. Each season will be color-coded and written on the board to help students identify which season they have.

Students will work individually and draw a picture of themselves and what they would wear during their assigned season. Students may also draw weather features of the season.

After drawing their individual pictures, students will form groups based on their seasons. Students in each season group will discuss their pictures and ideas with other members in their group. Teacher will walk around the class observing and listening to the different group.

For example; students in the spring group would hopefully draw light jacket, capris, and flowers. Students in the summer group would hopefully draw t-shirt, shorts, a swimsuit, sunglasses and the sun. Students in the fall group would hopefully draw long pants and leaves. Students in the winter group would hopefully draw coats, hat, scarf, gloves, etc in a snowy setting.

Some **[Comparison]** productive questions for this phase: How are the pictures in your group alike? How does the clothing you drew and the weather (temperature) during your season go together?

3) **Explain Phase:**

After a brief discussion, all the students will come to the carpet and form a circle. Students in each season group will sit next to their group members. The teacher will call on each season group (one at a time) and the students in that group will stand up and hold their pictures. Each student (from that group) will say one idea that their group talked about. Once every student has shared, the students will sit down and another season group will share.

After the class discussion, students will return to their desks and write (at least) one sentence explaining why they drew what they did in their season picture.

* Some **[Reasoning]** productive questions for this phase: How would you explain your picture to someone who didn't know what the weather was like in your season? Why do you think you need to wear what you drew during your season?

4) **Elaborate Phase:**

To extend the idea of the relation of changing weather to the different seasons, we will measure the temperature inside the classroom and compare it to the temperature outside the classroom. Students will record their temperatures on the worksheet (attached). Then, students will predict what the temperature would be in a month from now, May. Would it be warmer or colder? Students will write it down on your sheet.

Some **[Action]** productive questions for this phase: What will happen to the weather in May (a month from now)? How will it change?

5) **Evaluate Phase:**

Students will be evaluated on their completed work from the Explore (drawing of student in their assigned season), Explain (sentence) and Elaborate (temperature measurements- actual & predicted) phases using the attached checklist.

Evidence of Journaling:

- During the Explore Phase, students will draw a picture of themselves in a particular season.
- During the Explain Phase, students will be writing one sentence explaining why they drew certain elements (clothing, weather) in their season picture.
- During the Elaborate Phase, students will record the two measured temperatures for the day (inside and outside the classroom) and the two predicted temperatures for a month from now (inside and outside the classroom).

Evidence of group work:

- During the Explore Phase, students will work in their season groups talking about their drawings.
- During the Explain Phase, the class will come together and each season group will share their ideas to the rest of the class.

Lesson Modifications for Diverse Learners:

If a student has difficulty writing a sentence explaining why they drew elements in their picture (clothing & weather), he/she could orally describe their picture to one of the teachers.

If a student has difficulty predicting a temperature reading for a month away, student could decide whether he/she thought it would be warmer or cooler and color the temperature boxes (on the handout) - predicted inside & outside- red or blue respectively to represent their idea of the changing weather.

References:

Youtube video: From the California Academy of Science "Why do we have different seasons?"

visit www.calacademy.org/educators

Youtube video: "Season on Earth/videos for kids/#aumsum

What does it feel like outside?

Name: _____

Temperature 	Inside 	Outside 
Today		
May		

What does it feel like outside?

Name: _____

Temperature	Inside	Outside
		
Today		
May		