Weather vs. Climate: Do You Know the Difference?

This lesson is a student-driven, inquiry lesson that focuses on the differences between weather and climate. The lesson is designed to promote discussion about weather and climate and encourages students to use evidence from an article and a video to support their thought processes regarding the differences between weather and climate.

### General Information

- **Subject(s):** Science
- **Grade Level(s):** 6
- **Intended Audience:** Educators
- **Instructional Time:** 1 Hour(s) 15 Minute(s)
- **Resource supports reading in content area:** Yes
- **Keywords:** weather, climate
- **Suggested Technology:** Computer for Presenter, LCD Projector
- **Freely Available:** Yes
- **Instructional Component Type(s):** Lesson Plan, Worksheet, Video/Audio/Animation, Text Resource, Formative Assessment, Student Center Activity
- **Resource Collection:** FCR-STEMLearn Diversity and Ecology

### Attachment

- Weathervs climate cards.doc
- Exitticket.pptx
- T-chart1.docx
- Weathervs.climateworksheet.docx
- EPAweathervs.climatearticle.docx

### Lesson Content

#### Lesson Plan Template: Confirmatory or Structured Inquiry

#### Learning Objectives: What will students know and be able to do as a result of this lesson?

1. Students will be able to define weather and climate.
2. Students will be able to cite examples of weather and climate.
3. Students will be able to differentiate between examples of weather and climate.

#### Prior Knowledge: What prior knowledge should students have for this lesson?

Students should have been introduced to the topic of weather through 5th grade science standards. They were introduced to weather-related topics such as temperature and humidity and the different forms of precipitation. Thus, students should be familiar with the terms associated with weather. Climate may be less familiar to them.

#### Guiding Questions: What are the guiding questions for this lesson?

1. What is the weather in Florida?
2. What is the climate in Florida?
3. How can you tell the difference between weather and climate?

Introduction: How will the teacher introduce the lesson to the students?

- The teacher will prepare the cards prior to the lesson (refer to “Weather vs. climate cards”).
- Each student will be given a card that either has an example of weather or climate on it. There are 19 cards and you may have to make more than one copy of the cards depending on the number of students.
- They will have to move to a side of the room, either the “climate” side or the “weather” side, based on where they think their card belongs.
- Students will then be called upon to justify why they think their card belonged on that side. The students should say “I think my card is weather because...”. This allows the teacher to hear misconceptions.
- The teacher will give nonjudgmental responses to the students’ justifications, so that the learning gains can be compared from the formative assessment to the summative assessment.

I investigate: What question(s) will students be investigating? What process will students follow to collect information that can be used to answer the question(s)?

- Students will watch a short video about climate and weather. The video can be found at: http://studyjams.scholastic.com/studyjams/index.htm. Type “weather vs climate” in the search box at the top right and click “Go”. The video is the first link, and is called “Weather & Climate.”
- After the video, students will be given an EPA article to read silently and individually (refer to “EPA weather vs. climate article”). They will need to underline and mark important facts or key words.
- Students will then be given a worksheet with 8 examples of weather and climate (refer to “Weather vs. climate worksheet”). They will have to classify these examples as either “W” or “C” and reference back to the video and the article to support their answers.
- Finally, students will be grouped into groups of 3-4. They will compare their answers on the worksheet and discuss and debate the answers upon which they did not agree. The objective is to come to a consensus on all answers.

Analyze: How will students organize and interpret the data collected during the investigation?

After all of the groups come to a consensus, they will display their results on a T-chart on the board labeled “weather” on one side and “climate” on the other. One person from each group will come up and record a tally mark corresponding to which number they classified as weather or climate (refer to “T-chart”). Both the teacher and the students can see how well the students grasped the concepts. The teacher now has an opportunity to give feedback, and the class can engage in a whole class discussion about their answers displayed on the T-chart. Students should explain the logic behind their answers.

Closure: What will the teacher do to bring the lesson to a close? How will the students make sense of the investigation?

- Students will complete an exit slip addressing the following Mark Twain quote: “Climate is what we expect, weather is what we get.” They will have to relate this quote to what they have learned. They will need to tie in evidence from the article, video, and worksheet (refer to “Exit ticket”).
- The students will complete the exit slip addressing the following Mark Twain quote: “Climate is what we expect, weather is what we get.”

Summative Assessment

The learning targets will be assessed through an exit slip. This exit slip will have a quote by Mark Twain and will ask students to write a response that explains how the quote relates to weather and climate (refer to “Exit ticket”). They will need to cite specific examples from the text and what they have learned during the lesson.

Formative Assessment

- The teacher must prepare the cards prior to the lesson (refer to “Weather vs. climate cards”). The teacher will also designate one side of the classroom as “Weather” and the other side as “Climate”.
- Each student will be given a card that either has an example of weather or climate on it. There are 19 cards, and you may have to make more than one copy of the cards depending on the number of students.
- They will have to move to a side of the room, either the “climate” side or the “weather” side, based on where they think their card belongs.
- Students will then be called upon, one-by-one, to justify why they think their card belonged on the side that they are standing. The students should say, for example, “I think my card is weather because...”. This allows the teacher to hear misconceptions.
- The teacher will give nonjudgmental responses to the students’ justifications so that the learning gains can be compared to the summative assessment.

Feedback to Students

Students will gain feedback about their performance during their group discussions and after the T-chart activity. The design of this lesson is for the students to use text and their peers to stimulate discussion and understand the difference between weather and climate. The teacher will only guide students who seem to be struggling. This can be done by using guiding questions such as, “How does the article relate time to weather and climate?”

Accommodations & Recommendations

Accommodations:

- ESE or ESOL students should be paired with higher level students so that they can engage in conversation, work with each other, and better understand the content.
- The video and T-chart also serve as visual aids for these students. The teacher may also read the article to these students, if necessary.

Extensions:

After the lesson, students can apply what they have learned about weather and climate and complete the activity at the following link:
WEATHER AND CLIMATE: WHAT'S THE DIFFERENCE?

This activity has students collect weather data over a period of time and compare it to the climate data of that given area. They will graph their results and be able to understand that weather changes on a daily or even hourly basis. Climate is the weather patterns over a period of 30 years.

**Suggested Technology:** Computer for Presenter, LCD Projector

**Further Recommendations:**
The students should be doing most of the talking and discussing of content, while the teacher only plays the role of a facilitator. If the teacher notices that the students are straying far away from understanding the difference between weather and climate, the students can be set back on track with the use of guiding questions.

### Source and Access Information

**Name of Author/Source:** Anonymously Submitted
**Is this Resource freely Available?** Yes
**Access Privileges:** Public
**License:** CPALMS License - no distribution - non commercial

### Aligned Standards

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<thead>
<tr>
<th>Name</th>
<th>Description</th>
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<tbody>
<tr>
<td>LAFS.68.RST.2.4</td>
<td>Determine the meaning of symbols, key terms, and other domain-specific words</td>
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<tr>
<td>LAFS.68.RST.4.10</td>
<td>By the end of grade 8, read and comprehend science/technical texts in the</td>
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<tr>
<td>SC.6.E.7.6</td>
<td>Differentiate between weather and climate</td>
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