

**Weather and Climate  
 Aligned Lesson 1**

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<p><b>Related Unit: Weather and Climate ESS2-1, ESS2-2</b></p>	<p>Lesson Length: 7 days</p>
<p><b>Library of Congress Primary Sources</b></p>	<p><b>Materials/Supplies/Resources</b></p>
<div style="text-align: center;">  <p><b>Earthquake picture</b></p> <ul style="list-style-type: none"> <li>• <a href="https://www.loc.gov/resource/cph.3a21575/">https://www.loc.gov/resource/cph.3a21575/</a> Hurricane picture</li> <li>• <a href="https://www.loc.gov/item/ggb2005019464/">https://www.loc.gov/item/ggb2005019464/</a> Tornado picture</li> </ul> </div>	<ul style="list-style-type: none"> <li>• paper</li> <li>• pencil</li> <li>• computers or other media</li> <li>• <b>Open Ed Video: What is Weather?</b> (shows weather vs. Climate) or <b>Study jams: Weather and Climate.</b></li> <li>• Science notebooks</li> <li>• Note cards or sticky notes</li> </ul> <p><b>Books:</b></p> <p>National Geographic: Extreme Weather    Extreme Weather Systems    Natural Disasters: What and Why?    Why does it happen: Tornadoes, Hurricanes, and Typhoons    See Inside Weather and Climate</p>
<p><b>Enduring Understandings</b></p>	<p><b>Essential Questions</b></p>
<ul style="list-style-type: none"> <li>• Climate describes patterns of typical weather conditions over different scales and variations. Historical weather patterns can be analyzed. (ESS2-1)</li> <li>• A variety of hazards result from natural processes; humans cannot eliminate</li> </ul>	<ul style="list-style-type: none"> <li>• How does the climate of a region affect daily life? (ESS2-2)</li> <li>• How can analyzing weather patterns help us understand the weather? (ESS2-1)</li> </ul>

<p>hazards but can reduce their impacts. (ESS2-2)</p>	
<p><b>Transfer Goals</b></p>	
<ul style="list-style-type: none"> <li>● Analyzing and interpreting data ESS2-2</li> <li>● Using mathematics and computational thinking ESS2-2</li> <li>● Asking questions (for science) and defining problems (for engineering) ESS2-1, ESS2-2</li> <li>● Engaging in argument from evidence ESS2-2</li> <li>● Obtaining, evaluating, and communicating information ESS2-1, ESS2-2</li> </ul>	
<p><b>Learning Objectives</b></p>	
<p><b>I CAN STATEMENTS</b></p>	
<ul style="list-style-type: none"> <li>● I can use book and other media to gather information about climates in different regions of the world (e.g., equatorial, polar, coastal, mid-continental).</li> <li>● I can use books and other reliable media to gather information about different climates within regions of the world.</li> <li>● I can gather information about an area’s average temperatures and precipitation during various months over several years or an area’s average rainfall and temperatures during the rainy season over several years).</li> <li>● I can combine obtained information to provide evidence about the climate pattern in a region that can be used to make predictions about typical weather conditions in that region.</li> <li>● I can use the information I found to describe*: <ul style="list-style-type: none"> <li>○ Climates in different regions of the world.</li> <li>○ Examples of how patterns in climate could be used to predict typical weather conditions.</li> <li>○ That climate can vary over years in different regions of the world.</li> </ul> </li> <li>● I can draw a graph to represent data</li> <li>● I can solve how many more and how many less problems</li> <li>● I can write an opinion piece on topics or texts.</li> <li>● I can write an informative text to examine a topic</li> <li>● I can write a narrative to develop real or imaginary experiences.</li> </ul>	
<p><b>Engage: How can I get students interested in this?</b></p>	
<ul style="list-style-type: none"> <li>● Teacher will show pictures from LOC (Library of Congress) that show different structures that have been affected by natural disasters.</li> <li>● Students will use their Primary source analysis tool to make observations. * provided in folder</li> <li>● Teacher will allow students to turn and talk and share observations</li> <li>● Teacher will guide students to reflect on the pictures, students will guide students to write reflections on Primary Source analysis tool.</li> <li>● Students will share reflections with their shoulder partner</li> <li>● Teacher will guide students to write their questions on the Primary Source Analysis Tool.</li> <li>● Students will share questions with their shoulder partner</li> </ul> <p>* This could take one class period or 1 hour.</p>	

**Explore:** What tasks/questions can I offer to help students puzzle through this?

- Students will view the video weather & climate on [www.studyjams.com](http://www.studyjams.com)
- Students will take notes on the difference between the two in their science notebooks. \* Guide students to listen and write down the difference between the two. Teacher may need to stop and discuss along the way. Items that are important may include:
  1. The difference between weather and climate (have student write a definition)
  2. The 6 elements of weather
  3. What drives the difference between weather and climate? (answer: the amount of precipitation and temperature determine the climate of a particular place. \* teacher may need to provide definitions and elements to support special education students.
- Teacher may read a book about the weather and climate: ***See Inside Weather and Climate by: Katie Daynes and Russell Tate***
- After reading selection teacher may have students write down their own definition and two examples of each to be used as a summative. (1 point for each,  $\frac{3}{4}$  correct could represent mastery.) if mastery not reached teacher may need to provide extra support. which could include: Anchor chart with important elements, another read aloud, video or class discussion
- Students will be broken up into groups to research a specific region (any or all regions can be given, or broken down by the natural disaster teacher is guiding students to learn about i.e. hurricanes, tornadoes, earthquakes
- Groups will record the following data: average temperature, climate, amount of precipitation, most frequent disasters. (Information can be put in Science notebooks or teacher can create a google classroom slide for each group to report. (See created attachment in folder)
- Students will discuss recorded information and look for any patterns that may be present
- Students can create a bar graph of the average temperature in their region during a given month and compare that to another region from ( students can compute how many more or less inches of rain in a given time period. (creating a graph may need to be reviewed) 3.MD.B3
- Students can use the following websites to complete activity

<http://www.weatherwizkids.com/kids-questions.htm>

<https://www.ready.gov/kids/know-the-facts>

<https://www.esa.int/esaKIDSen/Naturaldisasters.html>

Possible questions that students can discuss/ answer while researching:

1. Do you believe climate plays a role in where people decide to live? Why or why not?
2. How does climate affect daily life?
3. Why is understanding a climate of a particular area important?
4. Have students discuss their graphs and findings (3.MD.8)
5. What regions get more precipitation and why?
6. How would your life be if you lived in a different area with a different climate? Explain.

(Teacher should allow students to share their answers in small groups. While sharing, teacher will walk around to check for misconceptions and clear them up as a whole class after discussion.)

\* 3-D learning occurs during this section

**This portion of the lesson should take 1-2 days or 2- 60 min blocks.**

**Explain:** How can I help students make sense of their observations?

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- Have the students reflect upon their experiences and the Primary Source(s).
- Have the students write down questions they wondered about and want more information on.
- Include questions\* and/or strategies teachers can utilize to help students connect their experiences to the essential question(s) and enduring understanding(s).
- Approximate how long this portion of the lesson should take.
- Students can use the PowerPoint (questions/slides already made, see folder) that they created to present the information to the class. (while presentations are going on audience will write questions that they still have about the region or natural disaster).
- Students can share results to class and clear up any misconceptions.
- Teacher can pose questions: Think about the pictures from the beginning of the unit, how would/could they change depending on the year of the disaster?
- Would the images damage still hold true today? Why or why not?
- How can images from the past help us prevent future disasters?

\* Questions from above can be answered orally, in their science notebooks or as an exit ticket.

- \*Questions should be of higher order, to encourage student explanations and

**Extend/Elaborate:** How can my students apply their new knowledge to other situations?

- Describe how the students will apply their new knowledge to new or similar situations.
- Include how the teacher can help the students make relevant connections to their observations, address misconceptions, and extend students' learning.
- Approximate how long this portion of the lesson should take.
- Give audience/other groups a notecard that they are still unclear about after the presentation for the group to research and answer at the end of the lesson/unit (students can choose up to 1 or 2 questions to address) or teacher can assign higher order question.
- Students could also tie writing into this by creating a report to share out information - **writing** options could be **research** based or opinion based (In your **opinion** what is the most interesting thing that you learned?) or **Narrative** (write a story about a person experiencing this natural disaster. (Teacher/Class could also read: *I Survived: Joplin Tornado* to tie in more Common Core standards. (use rubric to grade any writing, rubric in folder.) W.3.1, W.3.2, W.3.3

\* This part of the lesson could be take 1 to 2 days.

\*3-D learning occurs

**Evaluate:** How can I help my students self-evaluate and reflect on the learning?

- Identify how students and the teacher can assess understanding.
- Describe how the lesson activities can help students demonstrate achievement of the learning objectives.
- Include examples (or descriptions) of evidence related to each learning objective.
- Approximate how long this portion of the lesson should take.
- For final assessment students will create a region flip book, pamphlet or poster describing the following items.
  - Climate of specified region
  - average temperature over the course of 6 months (should be in graph form)
  - average rainfall/precipitation over the course of 6 months (should be displayed as a graph)
  - students can list the pros and cons of that particular region as to if a person should live there and why.

\*use the rubric in the folder to assess understanding.

\* 3-D learning occurs during this section

This part could take 1-2 days.