

Science Lesson Plan

Date: 4/20/23	Subject: Science (Weather and Climate)	Grade: 3rd grade
Lesson Topic: Making observations and analyzing climate in different regions of the world		Class/Group Size: Class of 21-24 <ul style="list-style-type: none">● 4 students per investigation team
Instructional Location: Third grade classroom		
I. Learning Objectives		
Central Focus of Lesson: Different regions of the world experience different climates: <i>Through looking at pictures of each season from different regions around the world, students will gather information by making observations and answering questions regarding patterns they notice about the different CLIMATES each region has</i>		
		3-ESS2-2.

Lesson Objective:

Obtain and combine information to describe climates in different regions of the world.

SWBAT collect make observations and novice similarities and differences between different climates of regions around the world by looking at pictures or each region at different times of year

Compare and contrast climate observations made between regions of the world to better understand that different regions experience different climates

Science & Engineering Practice:

Obtaining, Evaluating, and Communicating Information

Obtaining, evaluating, and communicating information in 3–5 builds on K–2 experiences and progresses to evaluating the merit and accuracy of ideas and methods.

- *Obtain and combine information from books and other reliable media to explain phenomena.*

Key Vocabulary: Climate, regions around the world, patterns, seasons, predictions, Tundra, Temperate, Oceanic, Desert

II. Lesson Consideration

Prior Academic Learning and Prerequisite Skills:

Students have done a deep analysis of the current season we are in and the weather (temperature, precipitation, sunny days etc.) experienced this week. They learned about what average temperature refers to and have learned about how different cities around the world experience different weather patterns across the year: this mainly serves as the basis for understanding of the concept of climate, as CLIMATE is defined as **the long-term pattern of weather in a particular area. Climate is the long-term pattern of**

weather in a particular area. Weather can change from hour-to-hour, day-to-day, month-to-month or even year-to-year. A region’s weather patterns, usually tracked for at least 30 years, are considered its climate.

The previous lesson touched on some of the different climates around the world: naming them and defining them; Tundra, Temperate climate, Oceanic climate, and the desert climate

Misconceptions

- Students may have trouble understanding “region of the world” as a larger body of land that experiences similar weather patterns across and extended period of time
 - The definition of regions will be embedded within the lesson and questions surrounding this concept will be answered accordingly
- Students may still need support understanding that different places around the world experience different temperatures from the region they are currently living in year-round.
- That every region experiences the same or similar temperature patterns.
 - That the seasons cause the temperature to change; ex. Winters in NJ are the same as winters in another city in a different region of the world.
 - That seasons present the same across the United States and or that the whole world has the same seasons

III. Assessment

Evidence and Formative Assessment of Student Learning: *Teachers provide opportunities for students to demonstrate understanding/show what they are learning throughout the lesson. Multiple and varied methods (i.e. speak, write, illustrate, act out, play, etc.) and continual opportunities for assessment allow students equitable access to the curriculum and instruction and modes for communicating their understanding of it. Assessments should be intentionally aligned with learning objectives.*

Assessment Strategy #1

Description of Assessment Strategy #1:
informal discussion (turn and talk) following the introductory questions

Evidence of Student Understanding:

Turn and Talk #1:

How would you describe the relationship between weather and climate?

Turn and Talk #2:

In prior classes , we have talked about why it is important to record weather data in different cities. Based on our discussion about how climate is simply weather patterns experienced in an area over time, why do you think it is important to record climate information each year?

Student Feedback:

students will also be given immediate feedback in the discussion as the teacher facilitates the discussion and prompts students to respond to one another. If students' need assistance, additional guiding questions should be used to prompt discussion.

Assessment Strategy #2

Description of Assessment Strategy #2:

Students will be asked to fill out a recording sheet to keep track of their observations as they travel from station to station for each climate.

- *Students will be asked to share their main takeaways of the lesson on a post-it note and stick it on the white board before*

Evidence of Student Understanding:

Students will be asked to discuss in their small groups what they observe about the similarities and differences of the climates they have decided each region belongs 3 mins

- Are the climates the same across different regions of the world?
- Which ones are similar and which ones are different
 - Explain your thinking using the observations we have made at each of our stations today

Student Feedback:

The representation of the observation data will be collected and assessed by the teacher for accuracy. Students will also be given immediate feedback in the discussion as the teacher facilitates the discussion and prompts students to respond to one another. If students' need assistance, additional guiding questions should be used to prompt discussion.

IV. Knowledge of Students

Building on Personal/Cultural/Community Assets:

During our observations throughout the procedure of this lesson, students will have the opportunity to explore the immediate environment they are currently living in (in their town, starting our weather observations at the micro level, then a different regions from around the world at each station: here we can integrate family and community members the children in the class value to ask them what parts of the US they have visited or have even lived in. Further, we will work to make connections between the weather we have observed between the US regions/ other regions around the world that have similar and different weather and climate. Again, this is an opportunity to ask students where they or their families are from and will further open doors to communicate with the family members of the students: as an extension of the initial lesson, we could have students' parents or other important family members to come in and talk about what the weather and climate is like in the part of the world or country they are from! This work will

have the goal in mind of validating and celebrating cultural and regional differences in our classroom. Talking about the students' background and where they and their families are from can also give way for the children to take pride in the regions of the world they are from as they learn to talk about their countries or states in both the ways that are important to them and eventually, using the science terminology they will acquire throughout this lesson.

Grouping Strategies:

Grouping strategies include: **heterogeneous grouping**

- For this lesson, students will work in their table groups. These groups were heterogeneously formed using an informal assessment of students' comfortability with related discipline-specific concepts.
- placing an advanced english speaker that is also be bilingual in the same group as a ELL student to address possible translation that may be needed when students are doing group investigations

Planned Supports:

Drawing on your students' background knowledge and experiences, can be an effective way to bridge those gaps and to make the content more accessible. This article offers a number of suggestions to classroom teachers as they find ways to tap into the background knowledge that students bring with them. It is tempting to view your students as the experts, and it is certainly important to draw on what they have to offer to the class, but it is also important to discuss whether they feel comfortable doing so beforehand, and to avoid putting them on the spot – particularly about cultural, political, or religious subjects that might be particularly sensitive. This can take the form of:

- Looking for resources that go beyond the textbook that will engage students and involve them in the learning process so that they find elements they can connect to and learn from.
- Use literature, stories, and folktales from other cultures as a way of encouraging students to connect what they are reading to their own experiences.
- Use storytelling in the classroom.

Efforts that teachers make to add a rich, cultural dimension to the curriculum will enhance student learning and comprehension, and create excitement in the classroom: providing the support individual students may need to foster a comfortable environment where students feel safe and

respected. This, in turn, allows students to be able to focus on understanding content that is made accessible to them by implementing the detailed supports below.

ELL students:

Scaffolding, Word walls, Sentence/paragraph frames, Bilingual dictionaries/translation
Think alouds, read alouds (instructions for activities), Highlight key vocabulary, Annotation guides,
Think-pair- share/ Turn and talks, Visual aides, Modeling, use of Cognates wherever possible,
extended wait time/ time for answering formative or summative assessment questions

Special Education accommodations: Word walls, Visual aides, Graphic organizers, Multimedia,
Leveled readers, Assistive technology, Notes/summaries, Extended time, Answer masking, Answer
eliminator, Highlight/Color contrast

Advanced Students: Curriculum compacting, Challenge assignments, Enrichment activities, Tiered
activities, Independent research/inquiry, Collaborative teamwork, Higher level questioning,
Critical/Analytical thinking tasks, Self-directed activities

V. Lesson Plan Details

Compose a detailed outline of the lesson procedures including instructional strategies, learning tasks, key questions, key transitions, student supports, assessment strategies, and conclusion. Your outline should be detailed enough that another teacher could understand them well enough to use them. Include what you will do as a teacher and what your students will be doing during each lesson phase. Include a few key time guidelines.

Lesson Introduction – “Before”:

Powerpoint Review: Climate is the long-term pattern of weather in a particular area. Weather can change from hour-to-hour, day-to-day, month-to-month. A region’s weather patterns, usually tracked for longer period of time, like year to year, are considered its climate.

Turn and Talk #1:

How would you describe the relationship between weather and climate?

Allow for possible student responses–

Thank you for sharing your ideas. I heard a lot of good thinking! Weather and climate are related because climate is simply normal weather patterns for an area over a very long time.

Slides on different kinds of climates: descriptions and pictures of each provided in the slides

- ***Tundra***
- ***Temperate***
- ***Oceanic***
- ***Tropical***
- ***Desert***

In prior classes , we have talked about why it is important to record weather data in different cities.

Turn and Talk #2:

Based on our discussion about how climate is simply weather patterns experienced in an area over time, why do you think it is important to record climate information each year?

**Number of
Minutes**

Thank you for sharing your ideas in class! Today we are going to do some more investigations about different regions of the world and see if we can conclude what climate they might have by look at pictures across a year

Learning Activities - "During":

- Students will be asked to move around the stations in the room, spending about 3 minutes at each station to make observations by looking at images of each region in January, april, July, and September
- At each station the students will fill out the respective region section of their graphic organizer handed out prior to the start of the lesson:

Using the pictures in Center #1, draw inferences about the climate in Little Diomedede, Alaska, New Brunswick, NJ, Tasmania, Australia, Ecuador, and Sahara, North Africa during the months of January, july, and september (September and april sections of graphic organizer not shown in example below)

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July			
City	Observations	What the weather is like?	Why did you n that inferenc
Little Diomedede, Alaska			
New Brunswick, NJ			

Tasmania, Australia				
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January

City	Observations	What the weather is like?	Why did you make that inference?
Little Diomedes, Alaska			
New Brunswick, NJ			

Tasmania, Australia				
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Students will be asked to discuss in their small groups what they observe about the similarities and differences of the regions based on the pictures provided o 3 mins

-What climate would you say this region has based on what we discussed in the beginning of class?

- Is the climate the same across the regions you looked at?
- If not, explain the similarities and differences you noticed
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Closure - "After";

Students present their ideas to the class and will be asked to place their region on a map in the front of the classroom (6 mins)

- Does the region you looked at differ or is it more similar to the climate patterns you observe in New Brunswick, NJ?
 - Why do you think that is? HINT look at where your region is on the earth!
- Do you think the pictures show us the weather patterns day to day?
- Did you observe that your region has a big change in temperature between January & July?
- Are temperatures during winter, spring, summer and fall months similar to the ones we have in New Brunswick?

Students come back as a whole class and share answers to the discussion questions. Today we learned about the different climates in different regions around us and that we can describe climate as weather patterns we notice from year-to year (not just day-day). For our next class, we will put all of our ideas together about weather and climate to create our final project about different weather patterns and climates around the world!

Extension:

Students may be given time to research a region of their choosing (namely a home country or one a family member. Or loved one may be from) to see if they can investigate what climate category that region would belong to