

Weather vs. Climate Board Game

Background

Weather and climate are among the most dynamic and complex systems on Earth, systems in which humans are not just affected, but also play a role. The National Research Council's Committee on Science Education Standards and Assessment and the American Association for the Advancement of Science Benchmarks for Climate Literacy, section 4-b suggest that students begin learning how to log weather and identify patterns in climate as soon as early elementary school. One of the foundational concepts in this area of Earth science is understanding the difference between weather and climate, and this interactive game provides serves as a vehicle for educators, both formal and informal, to introduce the differences between weather and climate.

How to Play

Divide images into color-coded sets and work through each set one at a time. Have the students decide which image represents weather and which represents climate, and attach to the board under the appropriate category.

Suggested Introduction

Weather is the condition of the atmosphere outside at a given time – rain, snow, sunshine—and climate is the long term average of those conditions.

What do you think the weather is like in Alaska?

(They may say, "Probably cold, snowy, icy")

And what do you think the weather is like in Hawaii?

("Sunny, warm, hot")

How do you know that Alaska is cold, and Hawaii is warm?

("That's what it usually is" or "Because Alaska is always cold!")

*You're right! An area's **climate** is what it's usually like in that location. It's usually cold in Alaska and usually warm and tropical in Hawaii.*

But, is it possible for Alaska to sometimes have a warm day or Hawaii to have a cool day?

("Yes!")

*Exactly! That is because of **weather**, which changes daily. Sometimes it rains, sometimes it is cloudy, but what we expect, or the **climate**, follows long-term predictable patterns. Lets play a game to practice telling the difference between weather and climate!*

Game Answers

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Would you be able to live in Igloo in your city? (No!)
Why not? (Because it would melt! It's too warm!)
So do you think the people who build this igloo built it because of the weather or climate? (Climate!)
Does it ever snow at your house? (Sometimes!)
Is that weather or climate taking place? (Weather!)

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Where do camels usually live? (In the Desert! Where it is hot!)
If they like to live where it is sandy and hot, why don't live on the beach? (Because it isn't always that hot at the beach!)
So do camels live where they do because of weather or climate? (Climate!)
When do you go to the beach? (When it's warm!)
So do you go when the weather is right, or when the climate is right? (Weather!)

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Does it ever rain where you live? (Yes sometimes!)
So it doesn't rain all the time? (No!)
So when it rains sometimes, do you think that is an example of weather or climate taking place? (Weather!)
What if it did rain all the time, such as where these monkeys live. Where do you think the monkeys live? (In a rainforest!)
If rains all the time in a rainforest, do you think that is an example of the weather or the climate? (Climate!)

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Why are the forecasts different for each day? (Because each day has different weather!)
Why are the forecasts different for each season? (Because of the climate!)

Suggested Conclusion:

Good Job! So in your own words, can you explain to me what the difference between weather and climate is?

Why do you think it is important to see how weather and climate changes?

At NASA, we think it is important to study weather and climate so that we know not just how to prepare tomorrow, but how all humans can prepare in the future if the climate changes.