

Climate Science in a Nutshell

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TEACHER RESOURCE GUIDE

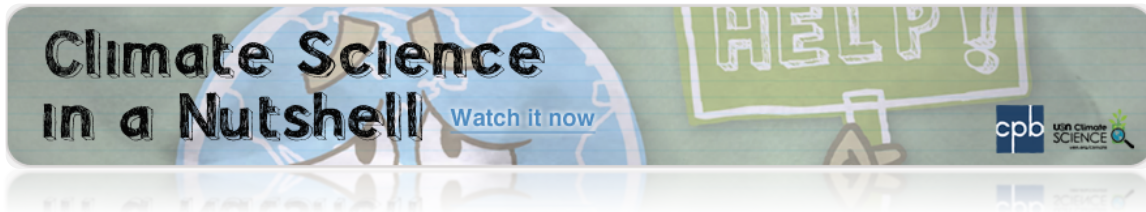
EPISODE 2: WHAT IS CLIMATE?

Brief Description

People are experiencing climate, which is related to the weather, but there's an important difference. That difference is really just a matter of time. Weather happens day to day, even hour to hour, and is still pretty unpredictable. Climate happens over longer periods of time -- 30 years and longer -- and is usually predictable. In a nutshell, climate can be described as the average weather over time.

Keywords/Key Concepts

Atmosphere	The air that surrounds the Earth.
Climate	A region of the earth having specified climatic conditions, the average course or condition of the weather over a period of years.
Cloud	A mass of tiny droplets of water that condense from the air.
Ice	Frozen water, a brittle, transparent crystalline solid.
Land	The part of the earth's surface that is not covered by water.
Ocean	A large, deep body of salt water.
Weather	The state of the atmosphere with respect to heat or cold, wetness or dryness, calm or storm, clearness or cloudiness.



TEACHING IDEAS WHEN USING VIDEO IN THE CLASSROOM

While watching television is often seen as a passive viewing experience, there are ways to turn it into a springboard for student interaction. Here are some general teaching strategies that enhance the use of video materials in your classroom by targeting specific skill sets.

- **Predicting**
- **Viewing Comprehension**
- **Listening Practice**
- **Speaking Practice**
- **Discussion**

PREDICTING

With picture and audio on:

- Use the pause control to stop a scene and have students predict what will happen next.
- Use the pause control to stop after a particular line of dialogue and have students predict the next line.

With audio off:

- Have students predict the situation and characterizations based on viewing an entire scene without the sound.
- Have students predict lines of dialogue after viewing an entire scene without the sound.
- Have students predict individual lines of dialogue by using the pause button to stop the scene.

With picture off:

- Have students predict the situation and characterizations by listening to the soundtrack without watching the picture.

VIEWING COMPREHENSION. You can check students' understanding of the situation in the following ways:

Before watching:

- Give students specific things to look and listen for before they watch a scene.

While watching:

- Freeze-frame the scene by using the pause button and check students' understanding

While watching or after watching:

- Have students answer comprehension questions you devise.

After watching:

- Give students cloze scripts and have them fill in missing words in dialog lines.

LISTENING PRACTICE. Have students focus on the dialogue contained in a scene by listening for particular vocabulary words, structures, or functional expressions:

TV Dictation:

- Have students write dialogue lines as they view them, using the pause control to stop the scene after each line.

Cloze Scripts:

- As students view a scene, have them fill in missing words in a cloze script you have created.

SPEAKING PRACTICE

Role Plays:

- Have students role play a scene, practicing the lines of dialogue for correct intonation and emphasis.

On-Location Interviews:

- Have students circulate around the classroom and interview each other using questions contained in the video segment. Students can then report to the class about their interviews.

Information Gap:

- Have half the class see a segment without audio and the other half hear it without the picture. Students from each half of the class then pair up, talk about the situation and characters, and act out the scene.

Strip Dialogue Scenes:

- Write dialogue lines on separate strips of paper, distribute them randomly, and have students recreate the scene by putting the lines together.

DISCUSSION

- Have students discuss the scene, plot and characters' actions, thoughts, and feelings.
- Have students think about what the characters in the scene are thinking but not saying. Students can create these interior monologues, present them to the class, and discuss any varying opinions about characters' inner thoughts during the scene.
- Have students tell which characters they identify with and explain why.

Adapted from *Side by Side TV Reference Guide*.



Episode 2: What is Climate?

At this very moment, all around the world, people are experiencing all kinds of weather.

People are also experiencing climate, which is related to the weather, but there's an important difference. That difference is really just a matter of time. Weather happens day to day, even hour to hour, and is still pretty unpredictable. Climate happens over longer periods of time -- 30 years and longer -- and is usually predictable. In a nutshell, climate can be described as the average weather over time.

Here's how climate works: When energy from the Sun interacts with the atmosphere, oceans, land, ice, clouds, and living things on earth, it creates the climate. These interactions are complex, and they don't happen the same way all over the planet. That's why different parts of the Earth have different climates.

For example, many parts of Utah have warm, dry summers and cold, mostly sunny winters with a few big snowstorms. Meanwhile, a place like Thailand is hot and humid year-round, with periods of heavy rain, called monsoons.

But the Earth's climate is now changing. You may hear your grandparents talk about snow piled up to their waists when they were kids, or being able to ski later in the year than they can now. People are also noting that spring is coming earlier and weather seems to be more extreme all over the world.

Over the whole history of the Earth -- about 4.6 billion years -- the climate has actually changed many times. For example, the entire planet was covered with ice at one point. There have also been times when there wasn't any ice at all.

The important thing for life on Earth, though, is that these big climate changes have always happened gradually, over many thousands, or even millions, of years. That has given plants, animals, and people plenty of time to adapt to these changes.

But here's the thing: Scientists who carefully study today's climate have noticed something out of the ordinary happening. The Earth's climate is now changing faster

than it ever has before, and living things can't adapt that fast. The reason is simple: the Earth is rapidly warming up.

Scientists now know that certain things that humans do are causing this fast change in the climate. Before we talk about the human role in climate change, though, let's learn about the ways the Earth is telling us it's warming up. That's in the next video!



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