

Climate Science in a Nutshell

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TEACHER RESOURCE GUIDE

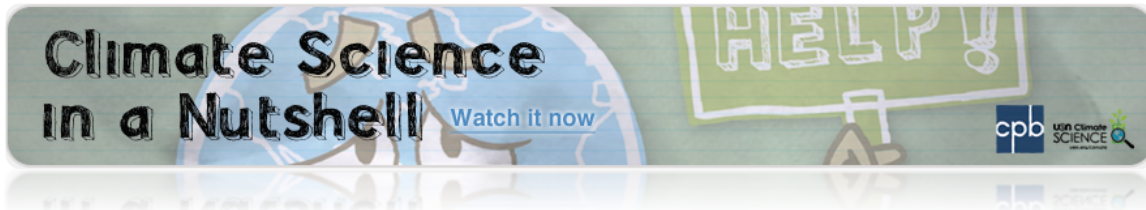
EPISODE 7: CLIMATE CHANGE AROUND THE WORLD

Brief Description

From extreme weather to threatened ways of life, the effects of climate change are real, and they are happening right now around the globe. As the Earth warms, the atmosphere contains more energy and moisture. These drive extreme weather, such as crippling heat waves, heavier rains and more powerful hurricanes. It even causes severe drought in some places -- because a warming Earth increases evaporation, too, drying out some places and causing a lot more dust and particles to get in the air. In the mountains of the American West, warming temperatures are already having a big effect on the delicate balance of life.

Keywords/Key Concepts

Climate	A region of the earth having specified climatic conditions, the average course or condition of the weather over a period of years.
Drought	A prolonged period of abnormally low rainfall; a shortage of water.
Fahrenheit	A scale of temperature on which water freezes at 32° and boils at 212°
Temperature	Degree of hotness or coldness measured on a definite scale.
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 7: Climate Change around the World

From extreme weather to threatened ways of life, the effects of climate change are real, and they are happening right now around the globe.

As the Earth warms, the atmosphere contains more energy and moisture. These drive extreme weather, such as crippling heat waves, heavier rains and more powerful hurricanes. It even causes severe drought in some places -- because a warming Earth increases evaporation, too, drying out some places and causing a lot more dust and particles to get in the air.

In western Russia, a heat wave in the summer of 2010 brought temperatures to 100 degrees Fahrenheit [38 C] for weeks, the highest temperatures in 130 years of record keeping. Other historic documents show that it was the worst heat wave in 1,000 years. The heat triggered massive forest fires that choked the capital, Moscow, with toxic smoke, killing as many as 700 people a day.

Meanwhile, in western Uganda, much of the snow and ice on the highest mountains of the region have largely melted in just the last 20 years, and yearly rains that farmers here depend on have largely stopped. To grow their crops, farmers are moving their fields ever higher up the mountains. And because of warmer weather, mosquitoes -- which couldn't live in the region before -- are now common, bringing diseases like malaria.

And in the Northeastern US, maple syrup is in trouble. Maple syrup comes from the sugar maple, which requires consistently cold temperatures in the winter to produce syrup. As the winters warm, the harvest season for syrup has gotten shorter and shorter. Scientists predict that in a few generations, sugar maples will be gone from the U.S. entirely.

As the planet warms, stories like these will become more common. Rapid Climate Change increases the probability that bigger storms, and longer droughts and hot spells will occur every year. Plus, our basic necessities -- like food and water -- depend on a steady and reliable climate. Rapid Climate Change puts them under threat.

Now, you might wonder; if Rapid Climate Change is happening, why does it still get really cold and snow in the winter? Keep in mind that climate is about trends -- average weather over many years. Single weather events like a cold snap or a big snow can still happen, even as the Earth's average temperature goes up and up. Colder events just get less frequent, and warmer ones get more frequent – and that's exactly what scientists have observed.

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