

Climate Science in a Nutshell

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TEACHER RESOURCE GUIDE

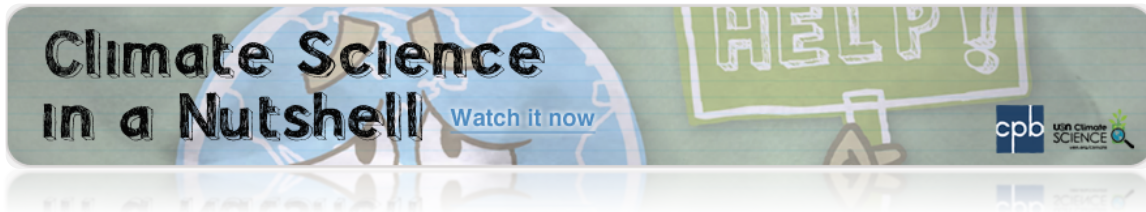
EPISODE 9: CLIMATE OF THE FUTURE IS IN OUR HANDS

Brief Description

We already know that Rapid Climate Change is happening, but how bad could it get? The answer lies with us, human beings. That's because the decisions we make now will determine if the effects of Rapid Climate Change are mild or extreme. Scientists who study the climate tell us that if we continue to add carbon to the atmosphere at the current rate, the Earth will get a lot warmer in the coming years and decades. They use big, brainy computers to simulate what the climate will look like in the future.

Keywords/Key Concepts

Atmosphere	The air that surrounds the Earth.
Carbon Emissions	Carbon that is released into the air through the burning of fossil fuels such as coal, gas or oil.
Celcius	A temperature scale on which the freezing point of water is 0 degrees and the boiling point of water is 100 degrees (also known historically as centigrade).
Climate	A region of the earth having specified climatic conditions, the average course or condition of the weather over a period of years.
Fahrenheit	A scale of temperature on which water freezes at 32° and boils at 212°
Carbon Dioxide	A gas that is produced by all animals and plants during respiration and used by plants during photosynthesis. Carbon dioxide is also the by-product of burning fossil fuels.
Temperature	Degree of hotness or coldness measured on a definite scale.



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 9: How Bad Could it Get?

We already know that Rapid Climate Change is happening, but how bad could it get? The answer lies with us, human beings. That's because the decisions we make now will determine if the effects of Rapid Climate Change are mild or extreme.

Scientists who study the climate tell us that if we continue to add carbon to the atmosphere at the current rate, the Earth will get a lot warmer in the coming years and decades. They use big, brainy computers to simulate what the climate will look like in the future.

Some of these computer simulations have already started to come true. For instance, as predicted, places in higher latitudes, like Canada, Russia, and the Arctic are warming more rapidly than tropical places, such as Thailand or Colombia. Other scientific predictions are coming true, too, like an increase in big, destructive storms; increased drought in dry regions, and longer, hotter heat waves.

These things are happening now, but it could get worse, and that spells trouble for all of us. Scientists say that as the temperature rises over the next century water will be more scarce, crops will be far more difficult to grow, storms will become more and more destructive, and many coastal areas will be underwater as the oceans rise.

In a nutshell, if we don't take action on climate change soon, we'll be living on a different planet -- a planet that's very unfriendly to life. In fact, scientists predict that if Earth's temperature rises more than 3.5 degrees celsius, or 6.3 degrees fahrenheit, as much as 70 percent of species on Earth could become extinct.

There's no getting around some of the effects of Rapid Climate Change, but the good news is that we can avoid the worst effects. To do that, we have to reduce the amount of carbon dioxide we're putting in the atmosphere.

Scientific measurements tell us that our atmosphere is at 392 parts per million of carbon dioxide. Every year, that number goes up by about half a percent. Over time, that small percentage really starts to add up.

To get rapid climate change under control and to make sure the planet remains livable, we need to stop that yearly rise, and bring carbon dioxide levels back down to 350 parts per million.

How do we get there? That will take good decisions by governments around the world, as well as everyday people.

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