

Strand 8.4	Standard 8.4.4 Episode 2	Anchor Phenomena There are factors that affect regional climates and global temperatures.
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Title Episode 2 Causes of Climate Change	Time 1-2 45 minute class periods	CCCs <u>Systems and System models</u> <u>Cause and effect</u>	Practices Developing and using models, Obtaining evaluating and communicating information
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Episode Snapshot:

What are the causes of climate change? Students will read an article to **obtain and evaluate information** that helps to identify the possible causes of climate change. They will use the information to help them draw a diagram/**model** of what was happening that is causing climate change.

Gathering:

Have students list as many causes of climate change as they are familiar with. Write them on the board. Give students the link or a printed out version of the article on nasa's website <http://climate.nasa.gov/causes/> (this is a [shortened version](#)) Have students read through and make a list of all the causes they can find in the article. Once the class is finished have students add the ones the class originally missed to the class list. I would separate out some of the major greenhouse gases, ie methane & carbon dioxide come from drastically different places though the result is similar.

Have students work in pairs to pick one of the causes of global climate change from off the board. If necessary have some double up on topics but for the most part try and have each topic covered by someone.

Reasoning:

Using the article and other resources as necessary have the students **obtain information** and develop a labeled diagram/drawing/**model** (this could be done on a large construction or legal sized paper so that the students can see it better when they present) or explanation about what is happening with the factor in the earth system causing climate change as listed in the article. Encourage students to use other references besides just the article. Let them know that in their diagram it must include

1. Where the cause is coming from (possibly multiple sources)
2. What is the basic science behind how is it causing climate change
3. Is this a natural cause, a human made cause or both?

Communicate:

Have each pair present a 1 minute explanation of where the particular cause comes from, why it causes an increase in temperature, and if it is natural or human made or both. Hold the students listening responsible either by having them write a 1 sentence summary for each or by having them pick 5 of the presentations to write on.

Teacher note: It is not necessary that they know every cause in detail but instead to be familiar with some of the causes and that some are man made and some are nature processes but the result in the climate overall is similar.

Assessment: Students diagrams or explanations will be used by the teacher to see that the student is understanding the many causes of climate change. Diagrams should be clear on what is happening. They don't need to be complicated to explain for example that carbon dioxide traps in heat from the sun.

Materials, resources, handouts, etc: Article either printed or the digital version.

<http://climate.nasa.gov/causes/shortened version>

Large paper for the students to draw their diagrams on.

Internet or other resource to find out more information about the cause they chose.