

Global Precipitation Measurement Mission

Name _____ Date _____ Period _____

Climate Change Online Lab - Student Capture Sheet

Activator:

What is a vital sign? (Think of a doctor’s office or medical television show.)

Explore: What would be a vital sign for Earth’s climate health?

Research

1. Go to the page, “Climate change: How do we know?” (<http://climate.nasa.gov/evidence>) Look at the graph and read the text.

a. Look at the graph at the top of the page. Around what decade did the average CO₂ levels reach their highest ever? _____

b. What tool has enabled scientists to collect data on a global scale? (The big picture.)

c. What does CO₂ do to heat in the atmosphere? _____

d. List the nine pieces of compelling evidence that our climate is changing rapidly. (Tens of years rather than thousands or millions.)

2. Go to <http://climate.nasa.gov/causes> and read about our “Blanket around the Earth.”

a. List the 5 heat trapping gases that contribute to the greenhouse effect.

3. Go to <http://climate.nasa.gov/> and list the five key indicators that NASA scientists use as indicators of climate change (along the bottom of the page)

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Click on the title of **your** assigned key indicator at the bottom of the page and read the interactive graph(s) and text to help you begin your research. If you can, also view the interactive time series that goes along with the reading.

(Key Indicator)		
What trend do you notice in the graph(s)?	What does this trend mean for our current climate?	What NASA missions contribute to the monitoring of your key indicator?

Go to the website list to find out more information for your key indicator.

Answer the following questions to help you prepare your poster/presentation.

In order to check the 'health' of this key indicator, what do climate scientists measure?			
If this key indicator continues on its current trend, what effect will it have in the future for Earth? <i>(Describe below how each of the Earth System spheres will be affected.)</i>			
Hydrosphere <i>(How will Earth's waters be affected?)</i>	Biosphere? <i>(How will Earth's living things be affected?)</i>	Atmosphere? <i>(How will Earth's atmosphere be affected?)</i>	Lithosphere? <i>(How will Earth's lands be affected?)</i>

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Poster Walk/Presentation Capture Sheet

As you move from poster to poster, or listen to presentations, fill in this capture sheet with notes about the other groups' key information. (If someone else does the same topic as you did, try to find something in their project that is not in yours and make a note of it.)

Poster/Presentation 1

Key indicator: _____

What is the current trend for this key indicator?	What do changes in this key indicator mean to our present climate?
What NASA missions are currently studying this key indicator?	In order to check the 'health' of this key indicator, what do climate scientists measure?
List one way that humans can help make this key indicator 'healthier' for our future?	

Poster/Presentation 2

Key indicator: _____

What is the current trend for this key indicator?	What do changes in this key indicator mean to our present climate?
What NASA missions are currently studying this key indicator?	In order to check the 'health' of this key indicator, what do climate scientists measure?
List one way that humans can help make this key indicator 'healthier' for our future?	

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Poster/Presentation 3

Key indicator: _____

What is the current trend for this key indicator?	What do changes in this key indicator mean to our present climate?
What NASA missions are currently studying this key indicator?	In order to check the 'health' of this key indicator, what do climate scientists measure?
List one way that humans can help make this key indicator 'healthier' for our future?	

Poster/Presentation 4

Key indicator: _____

What is the current trend for this key indicator?	What do changes in this key indicator mean to our present climate?
What NASA missions are currently studying this key indicator?	In order to check the 'health' of this key indicator, what do climate scientists measure?
List one way that humans can help make this key indicator 'healthier' for our future?	

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Poster/Presentation 5

Key indicator: _____

What is the current trend for this key indicator?	What do changes in this key indicator mean to our present climate?
What NASA missions are currently studying this key indicator?	In order to check the 'health' of this key indicator, what do climate scientists measure?
List one way that humans can help make this key indicator 'healthier' for our future?	

Poster/Presentation 6

Key indicator: _____

What is the current trend for this key indicator?	What do changes in this key indicator mean to our present climate?
What NASA missions are currently studying this key indicator?	In order to check the 'health' of this key indicator, what do climate scientists measure?
List one way that humans can help make this key indicator 'healthier' for our future?	

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Poster/Presentation 7

Key indicator: _____

What is the current trend for this key indicator?	What do changes in this key indicator mean to our present climate?
What NASA missions are currently studying this key indicator?	In order to check the 'health' of this key indicator, what do climate scientists measure?
List one way that humans can help make this key indicator 'healthier' for our future?	

Poster/Presentation 8

Key indicator: _____

What is the current trend for this key indicator?	What do changes in this key indicator mean to our present climate?
What NASA missions are currently studying this key indicator?	In order to check the 'health' of this key indicator, what do climate scientists measure?
List one way that humans can help make this key indicator 'healthier' for our future?	

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Applying what you've learned:

Read the article about the Global Precipitation Measurement mission.

In your own words, describe how the data that will be gathered by GPM will help scientists to better understand how our climate is changing.

- Be sure to include ...
 - ...the mission's goals.
 - ...the type of data that the mission will be gathering.
 - ...how the data will help scientists better understand our changing climate.
