STEM@CGI

SCIENCE - TECHNOLOGY - ENGINEERING - MATHEMATICS

Climate Change Pt 3

Ages 11-18

CGI

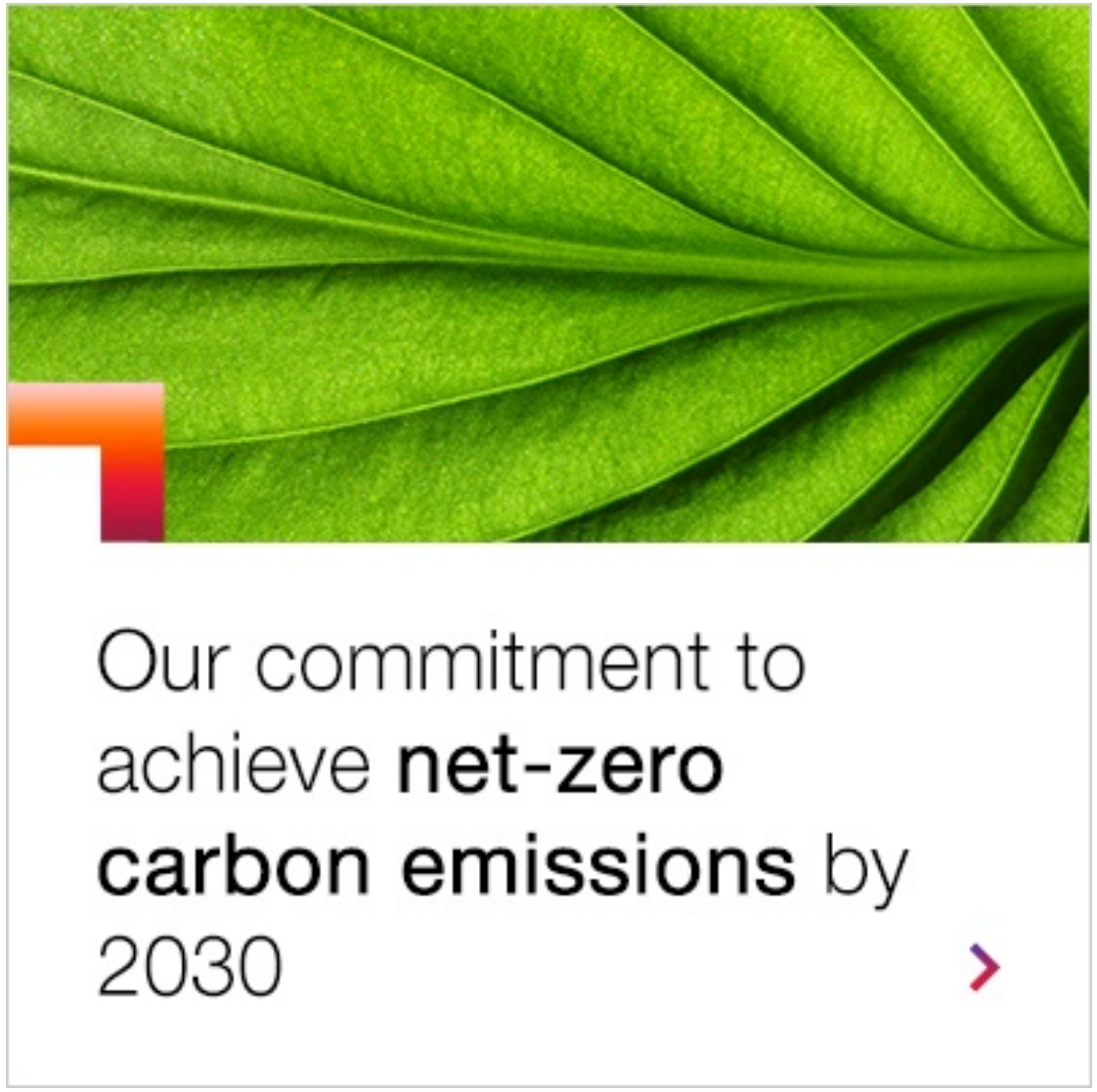
What's happening NOW?

Check out these links on how CGI is working on Climate Change around the world!

[CGI commits to net-zero carbon emissions by 2030 | CGI.com]

[Four keys for environmental regulatory collaboration | CGI United States]

[Combining technology and community engagement to improve air quality | CGI.com]



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Part 3
What does climate change have to do with me?

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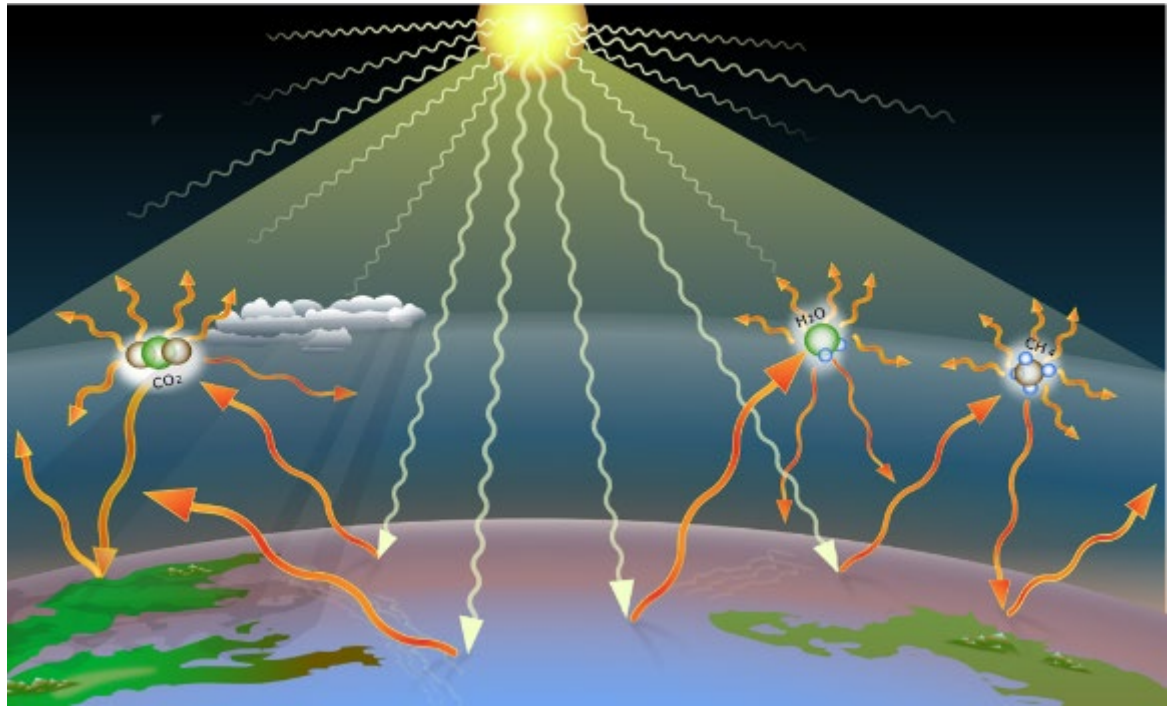
What does climate change have to do with me?



Greenhouse effect by A loose necktie is licensed by CC-BY-SA-4.0

GAS. What Gas?

Greenhouse gases are naturally trapped by the ***ozone layer*** and heat up the atmosphere to keep the earth from bitter cold. However, too much heat can be dangerous for life to thrive.

These gases contain carbon dioxide (CO_2) and methane (CH_4). Too much of these gases can get trapped around the earth causing the temperature to rise.

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How does carbon dioxide expand and increase temperature?

Purpose:

- To observe that carbon dioxide expands and gives off heat.

Materials:

Part 1-

- Bottled soft drink
- 9 in. balloon

Part 2-

- Clear drinking glass
- antacid tablet
- Thermometer

Carbon dioxide is used in certain types of fire extinguishers. "Englisches Institut Fire Safety Training" by heraldpost is licensed under CC BY-NC 2.0.

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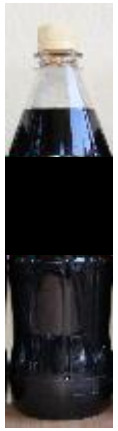
How does this work?

Procedure:

Part 1- (might be best to do this part outside)

1. Remove the cap from the soft drink bottle.
2. Pour out about half of the soda
3. Stretch the mouth of the balloon over the mouth of the bottle
4. Hold the balloon securely around the bottle's mouth and shake the bottle vigorously
5. Continue to hold the balloon securely and hold the bottle upright.
6. Observe that the carbon dioxide released from the soda expands the balloon.

Photo by Deeana Creates from Pexels



"Coca Cola" by Like the Grand Canyon is licensed under CC BY-NC 2.0

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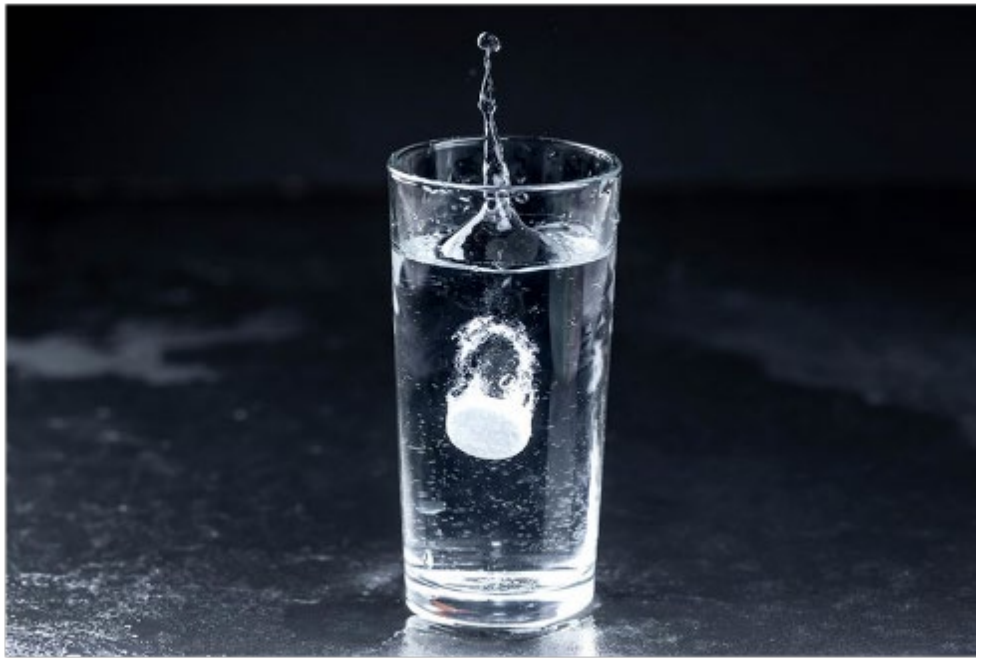
How does this work?

Procedure:

Part 2-

1. Fill a clear drinking glass half way with water.
2. Place a thermometer into the water and measure the temperature of the water.
3. Add the antacid tablet to the water and use the thermometer to gently stir to begin dissolving the tablet.
4. Hold the thermometer in the water as the tablet continues to dissolve; note the temperature of the water every 5 seconds.



"Effervescent tablet falls in a water glass" by wuestenigel is licensed under CC BY 2.0

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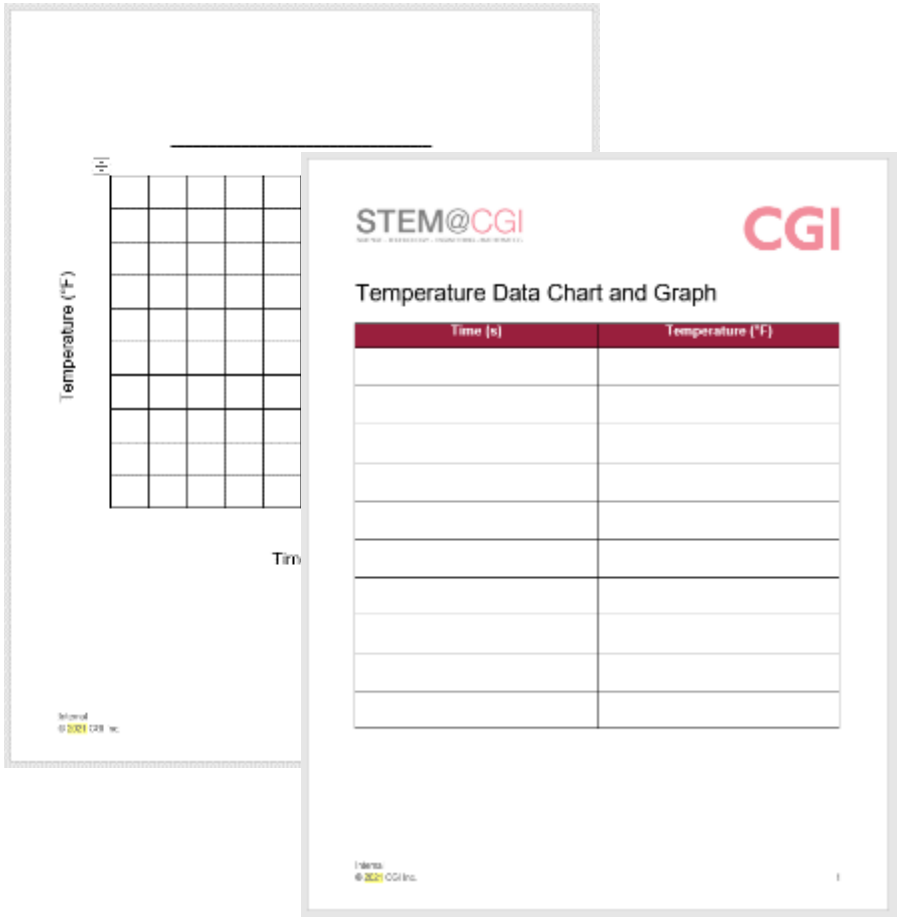
Temperature data and graph template

Scientists always document what they have learned from their experiments! You can too!

Use the temperature data and graph template found in the supplemental materials for this pack to record the temperature of the antacid as it dissolves in the water.

Graph the data on the chart provided. Make sure to include a title!

STEM@CGI at Home Activity Pack



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Credits

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Our commitment

We are passionate about helping students in our communities become the next generation of information technology professionals.

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Insights you can act on

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