

Carbon is Changing the Climate

Suggested Age / Grade Level	Concepts Covered	Duration
Grades 5+, Ages 10 to 13	<ul style="list-style-type: none">Scientific evidence supporting climate changeImpact of COVID-19 on climateEffective ways to control climate change	Video time: 3 minutes Online simulations: 30 minutes Activity time: 1 hour Total: Around 2 hours

Overview

Climate change has affected our modern world in so many ways, and it will continue to be a pressing issue in the future. Therefore, understanding the consequences of climate change and the most effective ways to combat them will be an inevitable topic of discussion with the next generation. This resource will help students learn what climate change really is and review the scientific evidence behind climate change. It will also show them the most impactful ways to make a difference.

Learning Goals

- To learn and review the strength of the scientific evidences supporting climate change from trustworthy sources
- To think about the impact of quarantine and COVID-19 on climate currently
- To review methods that can control climate change and think about which will make the most impact

Activities

Climate 101

<https://kids.nationalgeographic.com/videos/spectacular-science/#/1019900995730>

This resource is an educational video explaining the basics of climate change, including an introduction to the greenhouse effect.

Interactive Climate Time Machine (10 to 20 minutes)

<https://climate.nasa.gov/interactives/climate-time-machine>

This resource is an interactive simulation. It shows the changes in the size of the arctic sea ice, the rise in sea levels, as well as the increase in global carbon dioxide levels and temperatures.

Sun S'mores & Solar Oven! (1 hour)

<https://climatekids.nasa.gov/smares/>

This resource is a hands-on activity requiring 30 minutes of the set-up time and 30 minutes to warm the S'mores. The learning objectives include identifying the role of solar energy and how heat can be trapped in a concentrated area. Consider relating this concept back to the greenhouse effect and the video shown in the beginning.

On a bright sunny day, the activity requires:

1. A cardboard box with a lid (you can use an empty tissue box)
2. Aluminum foil
3. Plastic wrap
4. A glue stick
5. Any kind of tape
6. A long stick at least a foot long (you can use a ruler or a straw)
7. A box cutter (requires adult supervision, but scissors will work with more effort)

To prepare the smores, you will need crackers, marshmallows, chocolate bars and an aluminum pan to place the S'mores in (you can cover a small container with aluminum foil alternatively).

Coronavirus and CO₂ Emissions (10 - 20 minutes)

<https://www.bloomberg.com/graphics/2020-how-coronavirus-impacts-climate-change/>

This resource is an online newspaper article with graphics showing the effect of quarantine on climate change. The article looks at the worldwide decrease in carbon emissions, earth vibrations, air pollution, and noise pollution as a result of the coronavirus and a worldwide quarantine situation.

Curbing Climate Change Quiz! (10 - 20 minutes)

<https://edition.cnn.com/interactive/2019/04/specials/climate-change-solutions-quiz/>

This resource is an online quiz on climate change solutions. The quiz asks you to rank which climate change solutions from each category you think are most effective and explains the correct answer with supporting evidences.