

What is Climate Change?

An At-Home STEM Lesson Plan Crafted by BGCH STEM Specialist Chaelee Dalton



Alaska's Muir Glacier in August 1941 (Left) and August 2004 | Credit: [USGS](#)

This week, we continue our unit on climate and climate change! Today we will build on our lessons about climate to zero in on climate change, why it changes, and how climate change is measured.

Next week, we will culminate our climate unit with activities that focus on climate activism and what we can do to respond to climate change and protect our planet.

If your child cannot read, read the text out loud to them. Ask them the questions and have them respond and/or solve on a separate sheet of paper.

If your child can read, simply give them the second page of this handout and have them read the text out loud or in their head.

Materials: Blank paper, pen or pencil, internet access/YouTube, flashlight/phone flashlight

Addresses NGS Standards:

2-ESS1-1

2-ESS2-3

3-LS4-4

4-ESS2-2

5-ESS3-1

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Credit: [USGS](#)

These two pictures were taken at the same place, Alaska's Muir Glacier. The left (black and white) photo was taken in August 1941. The right (color) photo was taken in August 2004.

What are some differences between the glacier in the two pictures?

Write on a separate paper or below:

In the first photo, _____, but

in the second photo, _____.

What might have changed in the environment between the two pictures?

Why might the glacier's change be a sign of **climate change** rather than a change in the **weather**?

I think the glacier's environment has changed because _____.

I think this is a sign of climate change because _____.

We know that **climate** is the **typical weather of a region**, measured over **30 years**. Climate **can change**, too. However, because it is **long term and regional**, we need to look at the **very long term** to observe changes in the world's climate.

Next, watch this [video](#) about the ice change in the Arctic, a **polar climate**. Then, watch this [video](#) to find out why the melting of ice and glaciers matters.

One pattern or trend I observed in the video is _____.

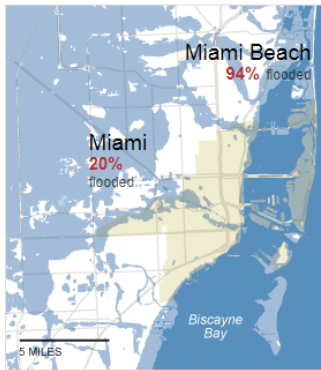
One reason why ice and glaciers melting matters is _____.

New Orleans 88% flooded



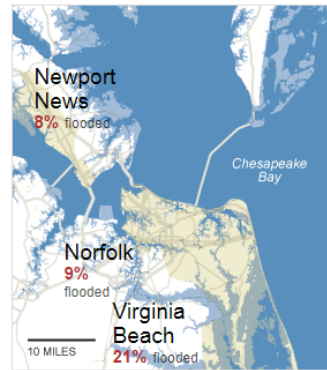
If levees breach, almost all of the city would flood. The surrounding region is also mostly flooded.

Miami



Much of suburban Miami and the area's barrier islands, including Miami Beach, are submerged.

Virginia Beach-Norfolk



Large areas of low coastal wetlands disappear.

One effect of the glaciers melting at the poles is the sea level rising in the rest of the world. Go to this [interactive](#) to find out what would happen in some major U.S. cities if the sea level rose 5 feet, 12 feet, or 25 feet.

How much of New York would flood if sea levels rose 5 feet? ____ %

New York City has about 9,000,000 people living in it. If everyone is distributed in the city equally, how many people would be affected by the flooding? _____ people.

How much of New Orleans would flood if sea levels rose 5 feet? ____%

New Orleans has about 400,000 people living in it. If everyone is distributed in the city equally, how many people would be affected by the flooding? _____ people.

Throughout these activities, we have observed some current and future effects of **climate change**, but **what causes climate change?**

Watch [this video](#) to learn more about how the earth stays warm.

Then, based on the video, circle **TRUE** or **FALSE**

Greenhouse gases are bad for the earth. **TRUE** or **FALSE** because

_____.

The earth's temperature is increasing at the fastest rate in earth's history. **TRUE** or **FALSE**



because _____.

Next week, we will learn more about what we can do to address climate change and the warming of the earth!