

Grade 6 Science
Earth's Changing Climate Unit
Family Letter

Dear Families,

Your student is about to start **an Earth Sciences unit called Earth's Changing Climate**. This unit is part of the Amplify Science program, which is the SPS adopted middle school science curriculum. Amplify Science is split up into units about different areas of science. In each unit, students start by wondering about something that happens in the real world. They investigate, talk, read, write, and think like real scientists and engineers in order to figure out how and why that thing happens. We hope you can enjoy discovering new ideas along with your student!

Earth's climate is changing, with average temperatures increasing by about 0.8°C since 1880. While the increase may sound small, the result is not. One of the many observable changes is that ice on Earth is vanishing, which is the anchoring phenomenon for this unit. **In this unit, students adopt the role of climate scientists who help the fictional World Climate Institute research causes of ice loss and climate change with the goal of educating the public about their findings.**

In order to delve into the mechanism of climate change, students investigate with a computer simulation, data, physical models, and scientific articles. They refute claims based on common misconceptions and learn how energy from the sun interacts with Earth's atmosphere and surface. They learn that the relationship between the amount of energy absorbed affects global average temperature and that the increase in Earth's temperature correlates with changes in the amount of certain types of gases in the atmosphere and discover that this is the cause of Earth's energy imbalance. Through further investigation, they learn that specific human activities, including increased combustion of fossil fuels and greater numbers of livestock kept for the benefit of humans, are responsible for increasing amounts of carbon dioxide and methane in the atmosphere. Along the way, students learn some of the effects of climate change, some possible solutions, and compare our current climate change to other climate changes in Earth's history.

In this unit, students are investigating the causes and effects of climate change, including melting ice on Earth's surface. You may wish to ask your student:

- "What did you figure out in your science lesson today?"
- "How does that help you understand why the ice on Earth's surface is melting?"

Answering these questions can help students understand more deeply and keep them interested in learning more. To get more ideas for Earth's Changing Climate, you can go to the Amplify Family Resources website at amplify.com/amplify-science-family-resource-intro.

Thank you for helping to support your student in their science learning during remote learning!

Your Child's Science Teacher