



Be an Energy Hero!

Lesson Summary:

This hands-on, engaging lesson uses visuals, movement, activities, and models to teach students about the difference between weather and climate, the basics of climate change, and simple ways to use less electricity.

Essential Question:

- How is electricity use connected to our changing climate?

Learning Objectives:

- Students will understand the difference between weather and climate.
- Students will recognize that climate change is rising global temperatures due to increased greenhouse gases in our atmosphere.
- Students will explore what our community is doing to reduce greenhouse gases and identify ways they can use less electricity.

Activities:

- Students are introduced to climate change through visuals and guided discussion.
- Students play “I Notice, I Wonder” while investigating a piece of coal, then learn how it is transformed into electrical energy.
- Students work in small groups using solar panels to power a fan, then compare renewable and non-renewable energy sources.
- Students read examples of energy use, add greenhouse gases to a globe model, and identify simple ways they can use less electricity while removing greenhouse gases from the model.

In Preparation for our Visit:

- The Sonoma Water educator will arrive at your classroom 10-15 minutes early to set up their teaching materials.

- The Google Slideshow presentations will be emailed to you. We would greatly appreciate it if you could have our presentation open when we arrive. Lesson 1 requires sound. If you do not have a computer, please let us know so we can make other arrangements.
- If possible, it would be helpful to have a small table or desk near the front of the room for the educator to set hers or his teaching materials on.
- Have your students clear everything off of their desks before the lesson begins.
- Please do not leave your classroom while the Sonoma Water educator is teaching.
- Review [vocabulary](#) with your students.

Materials Provided by Sonoma Water Educator:

- A class set of compostable bamboo toothbrushes that says, “Saving water, saves energy”.
- Electricity Conservation Worksheet (*Document coming soon*)
- Teacher evaluation and stamped envelope (Digital option: [Be an Energy Hero Program Evaluation](#))

Additional Resources to Extend Learning:

Videos for Third Graders:

- [How is Coal Formed? - Geography for Kids \(1:51\)](#)
- [Climate Change - What is the Greenhouse Effect? \(2:29\)](#)
- [Weather vs. Climate: Crash Course Kids \(4:32\)](#)
- [One Small Change - Ireland elementary school kids rap about climate change \(3:17\)](#)
- [Climate Change \(according to a kid\) \(2:11\)](#)

Videos for Teachers:

- [Energy 101: Electricity Generation \(5:18\)](#)
- [Formation of Fossil Fuels \(2:25\)](#)
- [Climate 101 With Bill Nye \(4:33\)](#)
- [Climate Change 101 with Bill Nye and National Geographic \(4:09\)](#)
- [5 Things You Need to Know About Climate Change \(1:05\)](#)
- [Renewable Energy 101 National Geographic\(3:16\)](#)
- [KPIX 5 News Station - Teaching about Climate Changes makes an Impact](#)

Websites:

- [Kids' Crossing](#)
- [Study Jams](#)
- [NASA Earth's Climate is Warming](#)

- [NASA Climate Change How Do We Know](#)
- [NASA Vital Signs](#)
- [Climate Kids](#)
- [CLEAN - a Collection of Climate and Energy Education Resources](#)