

Sustainable Energy Field Research

Grades K-2: Personal and Home



Resources developed by San Mateo County Office of Education's (SMCOE)
[Environmental Literacy and Sustainability Initiative \(ELSI\)](#) • Designed in 2018, last updated April 2021

Purpose and Overview of Field Research Activity

Field Research is the collection of data and observations. In this type of field research, the purpose is to help students investigate what is going on with an environmental topic in their local context (home, school, or community). Parents and Educators, *see overview video to Field Research guides [here](#). Some pre-literate students may need help to complete this field research but can participate in discussions. You may want to use [books from this list](#) in your lessons to help explain complex concepts.*

- **What materials do students need for doing field research?** The most important thing students will need is this document outlining the field research activities. Depending on the focus it might also be useful to have a clipboard, or pencil/pen, paper or journal, gloves, binoculars, etc. **You can print this document to have students write on the page, or make a digital copy and help students type their answers into the boxes.**
- **How long will it take students to do this field research?** Field research tasks may range from 30 minutes → 3 hours depending on the topic and activities. Observations and data collection may also be done as a one-time collection, or pattern-based data collection may take place over multiple days. It is recommended that students break the field research up into multiple activities based on each section.



Background information for this Field Research Task:

The simplest definition of energy is "the ability to do work". Energy is how things change and move. It's everywhere around us and takes all sorts of forms. It takes energy to cook food, drive to school, and jump in the air.

This field research will focus on the energy that we use in our homes, schools, and buildings for electronics and heating. In this field research, students will investigate some basic definitions about energy, where energy comes from, and how we all use energy. There will also be time to think about how to reduce the overall energy footprint to be more eco-friendly for the planet.



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PERSONAL & HOME ENERGY WALK-THROUGH



Step 1: Do an energy walk-through of your home.

→ Humans use energy to live comfortably however that impacts the land, water, air, and other living things on Earth. Explore where in your home you use energy.

Materials: Print worksheet or field journal, pencil

Directions: Use the images below and walk through your home to find sources of energy.













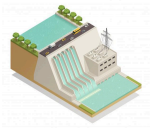



→ Put a tally mark under each source to count how many of those you use.



Safety: *Electricity is dangerous. This activity should be done at a walking pace and with an adult. Children should not play with sources of electricity.*

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HOME ENERGY WALK-THROUGH

Tally	Household Items			
(Examples: I, III)	Washing machine 	Lights 	Household heater 	Television 
Tally:				
	Electrical outlets 	Laptop 	Phones 	Refrigerator 
Tally:				
	Oven 	Toaster 	Stove 	Microwave 
Tally:				
Home Energy Sources				
What forms of energy does your home use? → Circle your answer	Wind 	Solar 	Hydropower 	
	Nuclear 	Natural Gas 	Fossil Fuel 	

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Step 3: Reflection on Home Energy Walk-Through



→ Discuss with an adult or write in your field journal.

A) Draw or write a way you use energy:
(Example: Watch TV)

B) Counting: Add up all the tallies from your walk-through. What is the TOTAL number of items you found that use energy?

C) Draw or write a way you save energy:
(Example: Turn off lights when I leave the room)

D) How did this activity make you feel?

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HOME ENERGY CONSERVATION

Step 1: Tips on Energy Saving



Directions: Watch these videos on home energy conservations to learn easy ways to lower your energy use.

- [Energy Thieves](#)
- [Four Energy Actions!](#)

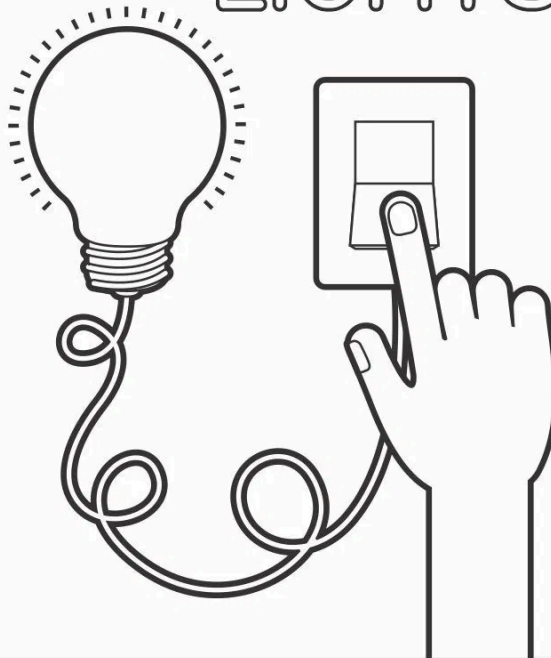
Step 2: Energy Conservation Campaign



Directions: Help your home save energy with a conservation campaign.

- Use the image below as a reminder to turn off lights
- OPTIONAL: Be Creative! Find other ways for your home to save energy.

TURN OFF THE
LIGHTS



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Step 3: Reflection on Home Energy Conservation

→ Discuss, draw, or write responses in your field journal to the following questions.

A) Did you find anything that was not on the energy walk-through list of items? If YES draw them here or in your field journal:

B) Did you find any places where you could save energy? How can you save energy?
Example: I can save water by taking a 5 minute or less shower.

C) How did this activity make you feel?

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You've Completed the Energy Field Research!

Great job! You've learned how different forms of energy, conducted a household energy audit, and created an energy conservation campaign. Reducing our energy usage is a step we can all take towards reducing the greenhouse gas emissions that enhance climate change. Discuss the lessons you've learned from this Field Research with the folks in your life and implement solutions into your daily activities to reduce your carbon footprint. Check out the [resources curated by the San Mateo County Office of Education](#) to explore more aspects of the waste and consumption system.