Energy Review: Practical and Technical Perspectives—
What is Energy?

Activity Summary

AUTHOR: Erin Sturtz

DESCRIPTION: Students will take a short field trip around the school to identify different types of energy.

GRADE LEVEL(S): 4, 5, 6, 7, 8

SUBJECT AREA(S): Energy

ACTIVITY LENGTH: 50 minutes

LEARNING GOAL(S): To access prior knowledge about different forms of energy

STANDARDS MET:
Oregon:
6.1P.2 Compare and contrast the characteristic properties of forms of energy.

Next Generation Science Standards:
4-PS3-2 Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.

MS-PS3-2 Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.

MS-PS3-5 Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.

OTHER MATERIALS LIST:
• “Energy Mini Field Trip” student handout
Vocabulary:
• Potential energy: energy due to an object's position
• Kinetic energy: energy of motion

Student Background:
▪ Students should already have experience with types of energy and waves
▪ Prior knowledge of electricity and magnetism
▪ May have prior knowledge of kinetic and potential energy from physics

Educator Background:
• Teachers should be comfortable with the concepts of potential and kinetic energy and examples of each

Lesson Details:
1. Warm Up: 5-10 minutes
   In small groups have students brainstorm the following questions. Have one student write down all responses:
   • What is energy? How can you identify energy?
   • What are different types of energy?
   Have each group share their answers and write down a compiled list on the board. Once all groups have shared, give students a formal definition, such as “the ability to make change” or “capacity to do work.”

2. Energy Mini Field Trip: 15-20 minutes
   Give the “Energy Mini Field Trip” handout to students and have them turn to the Forms of Energy page. Briefly talk about the difference between potential and kinetic energy and different examples of each.
   Explain to students that they will be walking around the school with a partner looking for as many examples of energy as they can find. At this point accuracy in naming the types is not important.
Give each team a timer to keep track of when they need to come back to the classroom. Escort students either around the outside of the school or throughout the interior, visiting a computer lab, library, gymnasium, band room, cafeteria, etc.

3. Field Trip Debrief: 5-10 minutes

Start discussion about the different types of energy found. At this point do not put answers into categories, simply keep a class list. Point out that some of their examples could fall into more than one category.

4. Follow-Up Questions/Homework: 10 minutes

As students finish categorizing, have them answer the follow up questions on the back of their sheet. Whatever they do not finish they can complete for homework.