



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

Activity Summary

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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

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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.

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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.

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