

Energy Transfer

Summary

These are introductory activities to help students understand energy pathways and transfer.

Time Frame

1 class periods of 90 minutes each

Group Size

Small Groups

Materials

- ["term" cards](#)
(attached). One set per student group)
- equipment to demonstrate energy transfer such as:
 - battery
 - flashlight
 - voltmeter
 - electric motor
 - solar panel
 - white paper
 - markers or crayons
 - student sheet (attached)

Instructional Procedures

Part 1:

- Students need to be seated in groups of 3-4. Handout student sheet.
- Read introduction with students and directions.
- Hand out the sets of energy term cards printed below
- Ask students to put the cards in groups and name or classify the groups.
- Have a member of each group report on what their groups were and what types of energy they put in them.
- Explain that scientists classify energy based on the following categories:
 - Electrical
 - Mechanical
 - Chemical
 - Nuclear
 - Light
 - Sound
 - Heat
- Have students define each category then reorganize their cards into the new groups.
- Have a group share what cards and in each group and check for accuracy.

Part 2:

- Demonstrate for students an energy transfer such as a battery in a flashlight hitting a solar panel being read by a voltmeter. Identify each type of energy (light to electrical to mechanical). You may wish to discuss that energy is lost in each transfer.
- If you have the equipment and want students to connect the pathway, provide them with enough equipment and give them time to do it.

Part 3:

Explain to students that energy flows through ecosystems. The sun is the source and it can flow through a variety of pathways.

Give students time to diagram an energy pathway through an ecosystem. They should draw each step and write down what type of energy is being transferred.

To enrich the assignment, have students include the steps in producing human food (energy from fossil fuels for farm equipment and transportation, light and heat energy in a store, mechanical energy to go get the groceries etc.)

Assessment Plan

Scoring Guide

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1. Students participate in activity and add input to group4
2. Students complete data tables and answer questions.....4
3. Students draw picture map of energy transfer through ecosystem and include at least 4 steps.....
.....4

Bibliography

Lesson Design by Jordan School District Teachers and Staff.

Authors

[Utah LessonPlans](#)