



# ENERGY CAUSES CHANGE

## Grade 3 | 60 Minutes

### Teacher's Guide

#### Description

In this hands-on field trip students explore “investigation stations” to learn about how energy can cause change on Earth. Topics to explore will include thermal, electrical and magnetic energy.

**Adult chaperones recommended:** 4 – 6

#### Content Standards

Subject	Gr	Standard	Objective/"I can" Statements
Physical Science	3	<ul style="list-style-type: none"><li>• All objects and substances in the natural world are composed of matter.</li><li>• Matter exists in different states, each of which has different properties.</li><li>• Heat, electrical energy, light, sound and magnetic energy are forms of energy.</li></ul>	<ul style="list-style-type: none"><li>• (Pre trip) I can recognize the three states of matter,</li><li>• I can explain that energy can create motion or cause change</li><li>• I can identify objects in the environment and determine what type of energy each has.</li></ul>

## Pre-Trip Activities

### Vocabulary

energy	magnetic energy
electrical energy	properties
matter	thermal energy
sound energy	

### Book

Energy Makes Things Happen by Kimberly Brubaker Bradley. Harper Collins, 2003.

## Other Activities

Play the game "Solid, Liquid, Gas" where students model the motion of molecules in a solid (stand still), liquid (move around slowly), and gas (move quickly). The teacher directs students by announcing when heat is applied and solid melts, when water boils causing evaporation, etc. Alternatively, students could use an online interactive that models matter changing state.

## Post-Trip Activities at School

Identify objects with energy in the environment (e.g., moving water, windmill, water wheel, sunlight) and determine what types of energy they have.

## Extension Activities

Design, construct and test a small boat or aircraft that can move in different directions (or against the flow of air/water) in nature. Document the forms of energy and resulting motion as the boat or aircraft is being demonstrated to an authentic audience.