Physical Science - Energy

Standards

- MS-PS1-4. Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.
- MS-PS1-6. Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes.
- MS-PS3-3. Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.*
- MS-PS3-4. Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample.
- MS-PS3-1. Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.
- 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.

Vocabulary

- Energy
- Kinetic Energy
- Potential Energy
- Thermal Energy
- Law of Conservation of Energy
- Work
- Conduction
- Convection
- Radiation

Learning Objectives

1. Explain the difference between kinetic and potential energy.
2. Provide an example of kinetic and potential energy in a real life situation.
3. How is energy transferred?
4. What is Conduction? Convection? Radiation?
5. Provide an example of conduction, convection, and radiation.