



Unit 6 Energy & Matter

Grade 8 Science

Unit Length and Description:

7 Instructional Weeks

Students will use models to describe the atomic composition of molecules and describe how synthetic materials come from natural resources. Students will also undertake a design project focused that either releases or absorbs thermal energy by chemical processes, and a device that minimizes or maximizes thermal energy transfer.

Science Standards:

- 8-MS-PS1-3** Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.
- 8-MS-PS1-6** Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes.
- 8-MS-PS3-3** Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.
- 8-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.

Enduring Understandings- Unit Anchor Phenomenon:

In 2011, the Great East Japan Earthquake caused catastrophic damage. Despite the massive devastation, people in one small area continued to receive power.

Essential Questions- Reflective Summaries:

- Describe that synthetic materials come from natural resources and impact society.
- Design a project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes.
- Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.
- Make a claim supported by evidence that when the kinetic energy of an object changes, energy is transferred to or from the object.