

What is Energy?

Energy is everywhere and it is one of the main reasons we enjoy a comfortable life. By utilizing our abundant, reliable and affordable energy resources, we promote human health, combat poverty, and improve the quality of life for all people.

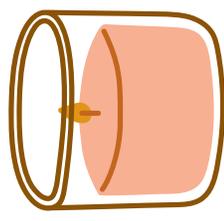
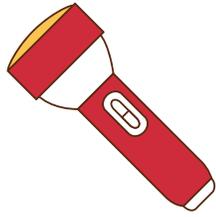
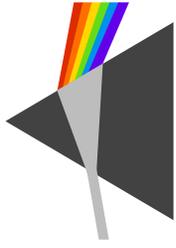
Topic/ Unit	Matter and Energy What is Energy?
TEKS	K.5.B observe, record, and discuss how materials can be changed by heating or cooling. K.6.A use the senses to explore different forms of energy such as light, thermal, and sound.
Materials	Toaster (or piece of plain toast) Flashlight Whistle Prism Ice Cell Phone Coffee cup Candle *** consider printing images of the items if you do not have them available. *** you will also need a surface to knock on and access to see the sun.
I can (EQ)	<ul style="list-style-type: none"> • identify types of energy. • identify examples of energy. • explain how heating and cooling changes objects.
Scaffolded Scripted Questions	What is energy? Where do you see energy around you? How does energy change objects?
Warm Up	Define energy for students using the following definition: Energy is the ability to work.

	<p>Have students stand still and check their pulse. Then have students run in place or do jumping jacks for 30 seconds. Ask them to check their pulse again. Ask them to identify the difference. Then explain their faster heart rate is caused by the movement and work from their activity and that this is an example of energy. Have students return to their seats.</p>
<p>Lesson</p>	<ol style="list-style-type: none"> 1. Explain to students that there are many types of energy. Three specific types are sound, light, and thermal. Sound uses vibration to create energy. Light and thermal both use heat to create energy. Light uses wavelengths to reflect off surfaces to create energy. Thermal energy creates heat through the movement of molecules. 2. Tell students that in today’s lesson, they will observe things in their classroom and home that create energy. 3. Have the students cut out the pictures on the first page of the worksheet. Explain that you will demonstrate to the class the way each item is used to create energy. Students will use observation strategies to sort and categorize each example into their graphic organizer. Use the following leads to generate observation and discussion. <ol style="list-style-type: none"> a. Set your cell phone to ring and vibrate. (sound) b. Stand near a window with the lights off. Either close the blinds or ask students what would happen in the room if the blinds were closed. Explain that although they are using the example of the sun as an example of light energy, the sun not only provides light, but also heat to the earth. (light) c. Show students a coffee cup. Ask students if hot or cold drinks belong in a coffee cup. Ask students to name ways they can identify if a liquid is hot or cold (touch or sight as with steam or boiling liquids). d. Blow a whistle (sound). e. Turn off the lights and turn on a flashlight. (light) f. Light a candle. Ask students to name other examples of where they use fire in their life. Students may mention a campfire or a fireplace. Discuss the purpose of these. Explain that like the sun, fire can be used as energy in a variety of ways. Not only does fire provide heat, but it can also provide light. g. Knock on a door. Explain that the vibrations made by your fist when it hits the door is how the knocking sound is generated. (sound) 4. As you discuss the toast and the ice, ask students what changes they notice as a result of heat. Explain to students that heat can change matter. To reinforce this point, ask students to name other changes in water and other liquids as they are

	heated or cooled. Examples may include steam produced through cooking and ice cream that is made by putting milk and cream in the freezer.
Assessment	Give students brightly colored sticky notes. They can work individually, in pairs, or in groups. Have students identify other examples of energy in the room, placing a sticky note on each example. Ask each student what type of energy their example represents and ask them why they chose that type of energy as their answer.

Types of Energy

Cut out the squares below. Then, as your teacher shows you how each object is used as energy, glue the square onto the correct type of energy onto the chart on the next page.



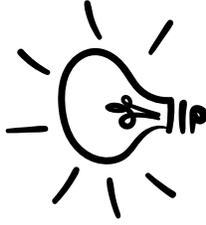
Types of Energy

Name:

SOUND



LIGHT



THERMAL



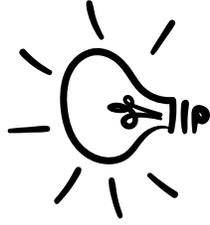
Types of Energy

KEY

SOUND



LIGHT



THERMAL

