Energy

- Instruct students to replace the figure and repeat the last two steps with the color paddles.
- Allow adequate time for students to complete the activity.

Facilitation Questions

- What do you observe when the flashlight is held above the figure? Below? Behind? In front of? Beside? *Students should describe how the position of the shadow changes as the light is moved to different locations. Encourage students to use the following sentence stem to answer: "When I held the flashlight (position word) the figure, the shadow _____."*
- What do you observe when you shine the flashlight through a color paddle? *The light appears to be the same color as the paddle.*
- What colors did you create by overlapping the paddles? *Yellow and blue make green. Red and blue make purple. Yellow and red make orange.*
- What do you observe when a color paddle is placed between the flashlight and the figure? *Students should describe how the color changes and how the amount of light changes when something is blocking the light.*
- What sense did you use to make observations? *I used my sense of sight to make observations of light.*
- What form of energy did you observe? *We observed light energy.*

Materials

For teacher

- 9" x 13" aluminum baking dish
- hair dryer, 1600–1857 W
- hot glue gun and glue sticks
- old, broken crayons, unwrapped
- tape
- timing device
- 4 sheets of white cardstock

For each student

- safety goggles

Activity 3

Advance Preparation

Prepare two pages by hot-gluing 4–6 crayons or crayon pieces of different colors in a circle at the center of two sheets of cardstock. Prepare two additional pages by hot-gluing crayons or crayon pieces of different colors in a line near the top of two sheets of cardstock.

Teacher Note

Because students will be using a hair dryer to melt crayons, you may want to review the appropriate way to use a hair dryer. Students should refrain

from pointing the hair dryer in any direction other than at the crayons. Safety goggles should be worn to protect the eyes. Remind students not to touch melted crayons as they will be hot.

This activity must be carried out in small, teacher-led groups. The time it will take to melt the crayons will depend on the amount of heat given off from the hair dryer and on the brand of crayons used. Most crayons will show some change after 1 minute, with drastic change occurring by 5 minutes. Each student should hold the hair dryer for about 1 minute. It is not necessary, but you may wish to elevate one side of the tray as the crayons begin to melt.

Teacher Instruction

- Divide the class into groups of 4–6 students.
- Tape a prepared sheet of cardstock to the bottom of the baking dish.
- Call a group to your small-group area.
- Ask the following: What do you predict will happen to the crayons when the hair dryer is blown on them?
- Prompt students to share their predictions with the group using the following sentence starter: “I predict that the crayons will . . . ”. Write the sentence starter on chart paper or white board and record student responses.
- Instruct students to put on their safety goggles.
- Model how to turn the hair dryer on high, point it at the crayons, and hold it 5–7 centimeters away from the crayons.
- Allow each student an opportunity to hold the hair dryer for 1 minute.
- Allow students to observe how the heat energy changes the crayons.
- Prompt students to describe their observations to the group using the following sentence starter: “I notice that the heat energy from the hair dryer . . . ”. Write the sentence starter on chart paper or white board and record student responses.
- Repeat until every student has taken part in creating melted crayon art.

Download Kinder_Explore_Energy from Drop Boxes in your Science Academies for Grades K–4 Project Share group to use on a SMART or Mimio interactive whiteboard.

Energy

Before

During

After

Energy

Facilitation Questions

- What caused the crayons to change? *Heat energy from the hair dryer melted the crayons.*
- Did the colors mix as the crayons melted? If so, what new colors could you make? *Yes, the colors mixed. New colors will vary based on the two original colors.*
- What sense(s) did you use to make observations? *I used my sense of touch to feel the heat and my sense of sight to see the effects of heat.*
- What form of energy did you observe? *We observed heat energy. Some students may also recognize the observation of sound and light energy.*
- What other ways could we melt the crayons? *Student responses will vary and may include leaving them in a hot car or in sunlight.*