

Energy

Explore

Activity 1

Teacher Note

The items listed in the materials list are suggested items only. You can substitute items that are similar in size, shape, and material for those on the list. Be sure to have a variety of sounds for students to match. Any small opaque containers will work if you do not have access to plastic eggs.

Depending on your students, you might choose to lead or model some or all of these activities before asking your students to work through them in small groups or independently. Use the facilitation questions, as a whole class or individually, to debrief the activity and check for understanding. This can be done orally and written as a classroom science notebook entry to model how a scientist might record his or her observations.

At the completion of the three activities in the Explore section, it may be necessary to facilitate a discussion with a small group of students to revisit any misconceptions or to clarify understanding. Interactive scaffolding support at this point can help students re-examine the activities and participate in an active evaluation of their understanding.

Advance Preparation

Prepare each Sound Explore Set by filling the eggs with one of each material listed. Place the other material in one of the ice cube tray sections. Cover the prepared ice cube trays with plastic wrap and secure with tape.

Teacher Instruction

- Display one Sound Explore Set.
- Invite a student volunteer to shake one of the eggs and to place the egg on the section of the ice cube tray that contains what they think is inside the egg.
- Invite another student volunteer to do the same thing.
- After you feel the activity has been sufficiently modeled, divide the class into groups of 4–6 students.

Materials

For teacher

- Materials for Sound Explore Sets:
 - 10 small, colored plastic eggs
 - ice cube tray
 - plastic wrap (to cover ice cube tray)
 - tape
 - 20 items (2 of each type) such as beans, centimeter cubes, cotton balls, craft pompons, marbles, paper clips, pieces of pasta, pencil-top erasers, pennies, rice, and small rocks

For student groups

- 1 Sound Explore Set

Energy

- Pass a set of materials to each group.
- Instruct student groups to work together to match the sounds of the eggs to the materials in the ice cube trays. Remind students not to open the eggs until they have been matched to items in the ice cube tray.
- After each group has finished matching, show students how to carefully open one egg at a time to check their work.

Facilitation Questions

- Which sense(s) did you use to match the materials in the eggs to the materials in the ice cube tray? *I used my sense of hearing to listen to each egg, my sense of touch to hold each egg, and my sense of sight to check that I properly matched the egg to the object I thought was in it.*
- How did you decide what was in each egg? *I shook each egg and listened to the sound. I felt how heavy each egg was and predicted how it might match the heaviness of an object in the ice cube tray.*
- What did you hear? *I heard soft sounds, hard sounds, sounds like a bouncing ball, and sounds like a rock would make.*
- What form of energy did you observe? *We observed sound energy.*
- How were the sounds different? *Some of the sounds were soft, some were sharp, some were loud, and some were quiet.*
- How many of the sounds did you guess correctly? *Answers may vary.*
- Which eggs did you match incorrectly? Why do you think that happened? *Answers will vary.*

Activity 2

Teacher Note

Because students will be using flashlights, you may want to review the appropriate ways to use a flashlight. Students should be advised to refrain from shining the light in each other's eyes.

It is recommended that students work in groups of 2–3 as you complete this activity as a whole class.

Materials

For teacher

- Materials for file folder tents:
 - 3 dark-colored, letter-size file folders
 - packaging tape
 - 1 sheet of white paper

For student groups

- 2–3 flashlights
- 1 file folder tent
- 1 set of color paddles
- 2–3 plastic animals or figures