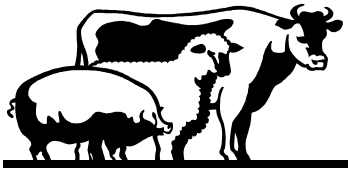
SIMPLY SOUND

BENCHMARK AND TASKS

SC.C.2.1.2 The student knows that sound is caused by vibrations (pushing and pulling) to cause waves.

- The student produces sound by vibrating objects.
- The student classifies sounds according to different criteria (e.g., man-made, nature-made; loud, soft).



KEY QUESTION

How can sounds be classified?

BACKGROUND INFORMATION

All sounds are caused by vibrations. A **vibration** is a back and forth movement. When there is no movement, there is no sound to be heard.

Sounds come from a variety of sources: people, animals, machines, nature, and musical instruments. The environment is filled with both natural and man-made sounds. Through experience we have learned to match sounds to ideas and events; they convey messages. Whatever the sound, we can be certain that it was caused by a vibration.

MATERIALS

Teacher

coin
Venn diagram
rice, beans, pennies, cotton, paper clips, jingle bells, sand, etc. (to fill sound canisters)
film canisters – 1 per student

Per student

*Sounds We Hear…*record sheet
pencil
clipboard or surface for writing outside

TEACHING TIPS

Make sound canisters by filling opaque film canisters with items that create distinct sounds: rice, beans, pennies, cotton, paper clips, jingle bells, sand, etc. Prepare one set of canisters for each group (e.g., If you have 24 students, you may choose to have 6 groups. You would need 6 different items to fill the canisters. Group 1 would all have pennies, group 2 would all have sand, etc.).

ENGAGE

1. Ask students to close their eyes and listen carefully. Drop a coin onto a table and ask students to identify the object that made the sound.
2. Have students select one of the previously filled film canisters. Ask them not to open their canister but to shake it and listen carefully to the sound produced. Tell students to walk around the room, shaking their canisters to find members of their group by matching their sound canisters to others with similar sounding canisters.
3. After all members of the group have come together, have them discuss and predict what is inside their film canisters before they open them to verify their predictions.
4. Students with matching canisters should form their groups.

5. Ask:
   Do you think you have a solid, liquid, or gas?
   Why do you think so?
   Do you have one object or more than one?
   Is the object likely made of metal, plastic, cloth, or some other material?
   What are some other ways you can describe the sound?
   What do you infer is in the canister?

EXPLORE

1. Give each student a *Sounds We Hear…* record sheet.
2. Ask students to close their eyes and listen to indoor sounds for one minute. They should record their responses on the top section of the record sheet.
3. Take the children outdoors and again ask them to close their eyes and listen to the outdoor sounds for one minute. Give them time to write their responses on the top section of the record sheet.

EXPLAIN

Discuss with the students:
What sounds did you hear in the classroom?
What sounds did you hear outdoors?
How are indoor sounds different from outdoor sounds?
Did you hear any of the same sounds in both places?
Were the sounds louder indoors or outdoors?
Did you hear more sounds indoors or outdoors?
What do you know about sound?

EXTEND/APPLY

Tell groups to brainstorm and compile a list of sounds and their sources at the bottom section of the record sheet. Direct students to classify the sounds as man-made/nature-made, loud/soft, and pleasant/unpleasant. After groups have completed their lists, discuss their ideas:
What kinds of sounds are pleasant to your ears?
What characteristics make a sound unpleasant to hear?
Are all the loud sounds also unpleasant sounds? (Discuss the possibility of hearing loss or damage to the ear, resulting from loud sounds, including prolonged listening to loud rock music.)
Are all soft sounds also pleasant sounds?
Are nature-made sounds usually pleasant or unpleasant sounds?
Are there any nature-made sounds that are unpleasant? If so, what are they?
Are man-made sounds usually pleasant or unpleasant sounds?
Are there any sounds that could be both pleasant and unpleasant, depending on the circumstances?

EXTENSIONS

1. Make a collage of pictures or drawings of sounds you hear every day.
2. In collaborative groups, create sound effects for a story or poem that is being read in class.

3. Illustrate one of the following scenes and list the sounds you might hear at: the beach, a birthday party or in physical education class.

ASSESSMENT

The student demonstrates the ability to identify the source of a sound and classify sounds as indoor/outdoor, loud/soft, and man-made/nature-made.
The *Sounds We Hear* record sheet is satisfactorily completed.

Student Scientists _____

SOUNDS WE HEAR…

INDOOR SOUNDS		OUTDOOR SOUNDS	
phone ringing	Tom's cough	train whistle	wind

SOUND and SOURCE	MAN-MADE NATURE-MADE	LOUD/SOFT	PLEASANT/ UNPLEASANT
cow mooing	nature made	loud	pleasant
buzz of microwave timer	man-made	loud	unpleasant

Discuss the following questions with your group:

Are all **loud** sounds pleasant to the ear? Why?
Are all **nature-made** sounds **pleasant** to the ear? Why?
Are there any sounds both **indoors** and **outdoors**?