

UNIT 6

SOUND

What are the sounds that you can observe in the situation below?



Vibrations and Sound

Fariz and his friends performed in a school band. Observe the situation below.

Blowing

When the flute is blown, the air inside the flute **vibrates**.

Knocking

When the xylophone is knocked, the bars **vibrate**.

Clapping

When cymbal pieces are clapped together, they **vibrate**.

Plucking or Bowing

When the strings of the guitar are plucked or bowed, they **vibrate**.

Based on the situation above, how is sound produced?





FUN ACTIVITY

Producing Sound



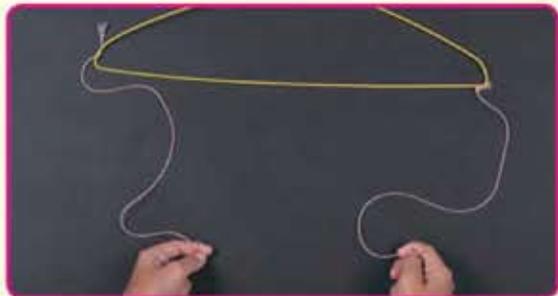
Apparatus and Materials

Metal hanger, thread, pencil

Steps



1. Tie the thread to the hanger.



2. Entwine the ends of the thread around your index fingers.



3. Place the index fingers close to the ears.

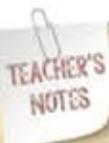


4. Ask your friend to tap the metal hanger with a pencil. Observe what happens.

5. Repeat steps 1 to 4 by exchanging your role with your friend.

Questions

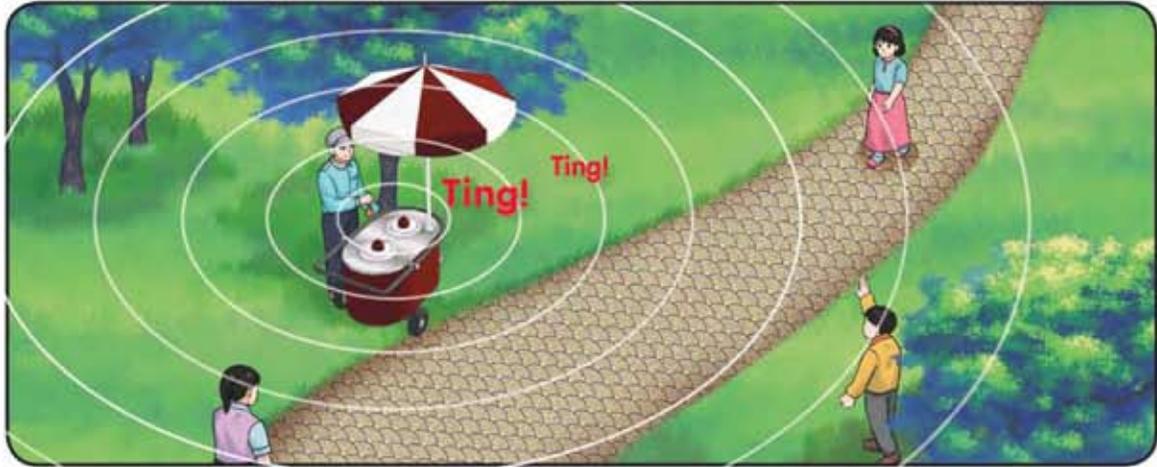
1. Based on the activity above, how do you produce sound?
2. What happens to the thread when the hanger is tapped?
3. What causes the production of sound?



Make sure that the hanger does not touch the body when it is tapped.

Sound Travels

Fariz, Teruni, and Mei Lan can hear the sound of the bell ringing from an ice cream seller even though they are at different positions. Why?



Although they are at different positions, they can hear the bell ringing from an ice cream seller as **sound travels in all directions**.

Observe the situation below.

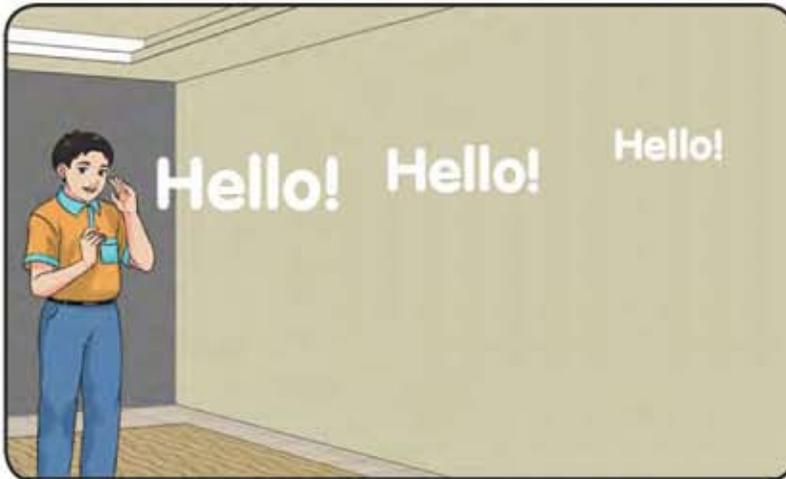


Why can the pupils on the upper floor hear the school bell?

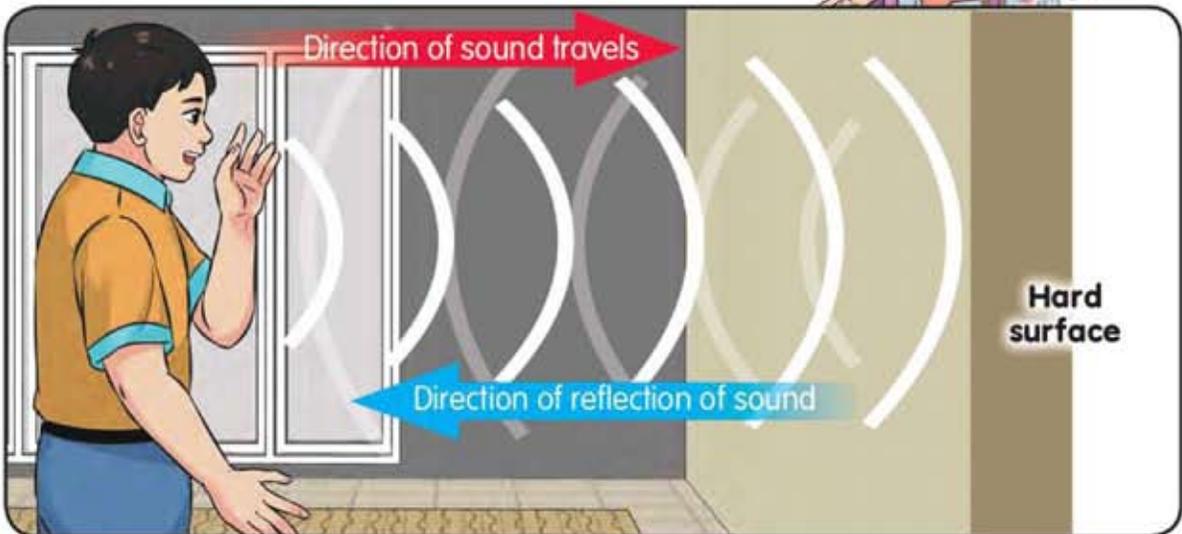


Sound Can Be Reflected

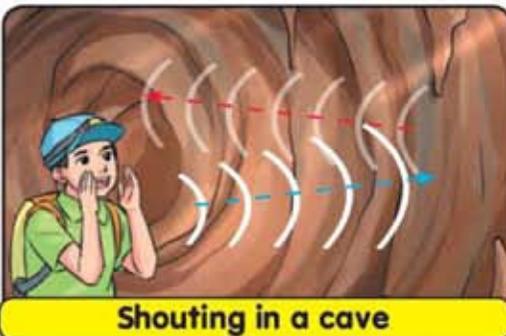
Fariz and his family have just moved into a new home. As he speaks in the empty room, he hears his voice again.



When a sound hits a hard surface, it is reflected.



Look at other examples of reflection of sound that occur around us.



Phenomena of Reflection of Sound

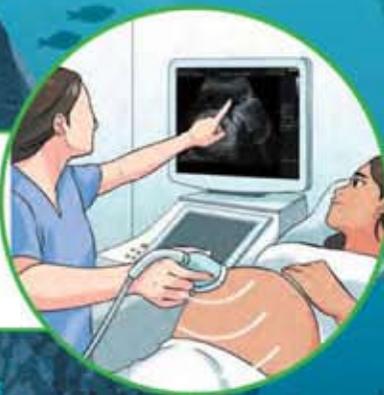
Reflection of sound happens all around us. It is used by humans and animals in various ways. What are the phenomena of reflection of sound that are happening around us?

Echo

An echo is a sound produced when a sound is reflected on a hard surface.

SCIENCE INFO

In the medical field, ultrasonic machines are used to detect organs in the body of a patient or fetus in the womb.



Ultrasound

Ultrasound is a sound that humans cannot hear but can be heard by animals such as bats, dolphins, and whales to navigate and detect the location of their prey.

Sonar

Sonar is a technology that reflects ultrasonic sound to detect objects in water.

Based on the information above, give another example of reflection of sound that you have experienced. Explain.

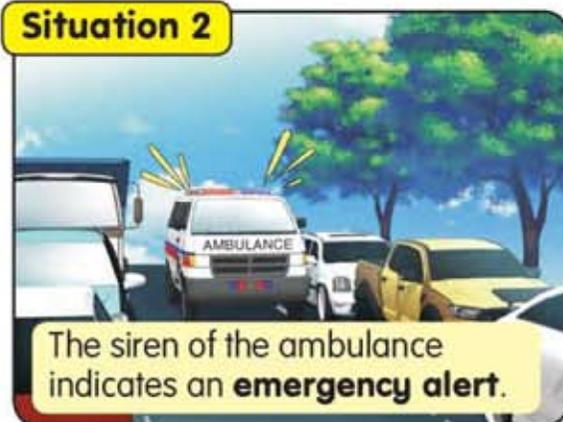
Useful and Harmful Sounds

Sound has many effects in our lives. What are the useful and harmful sounds to us? Observe the situations below.

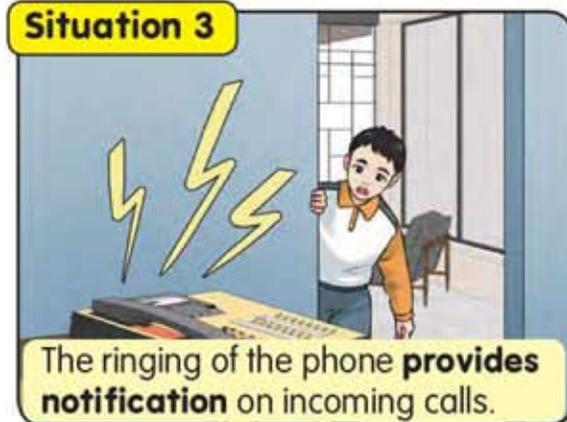
Situation 1



Situation 2



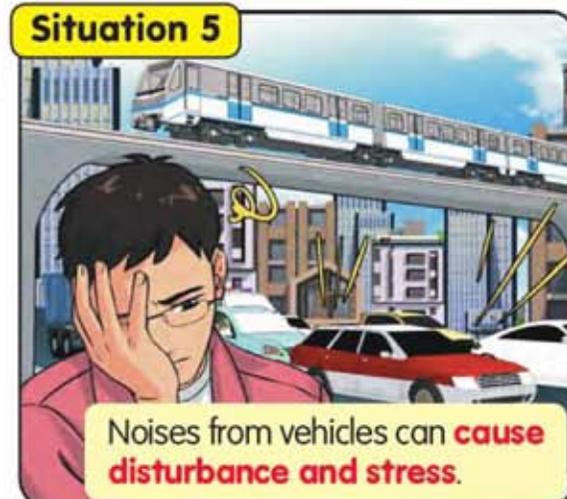
Situation 3



Situation 4



Situation 5



Situation 6



Identify and explain the useful and harmful sounds based on the picture below.



Gather information on the effects of sound in your daily life. Share your information creatively with your friends.

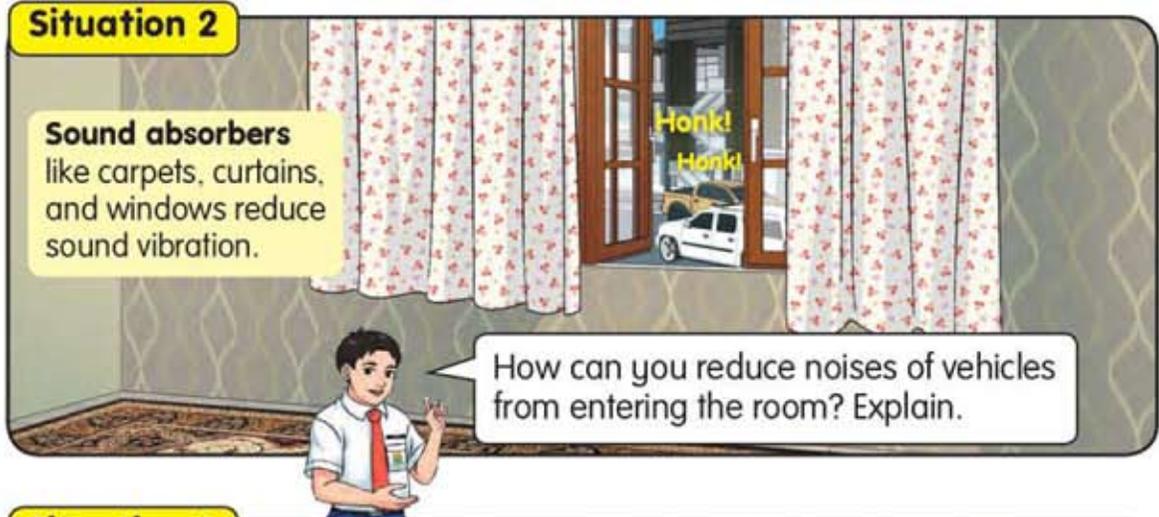
Reducing Sound Pollution

Loud or unwanted sound can be reduced. Observe the situations below.

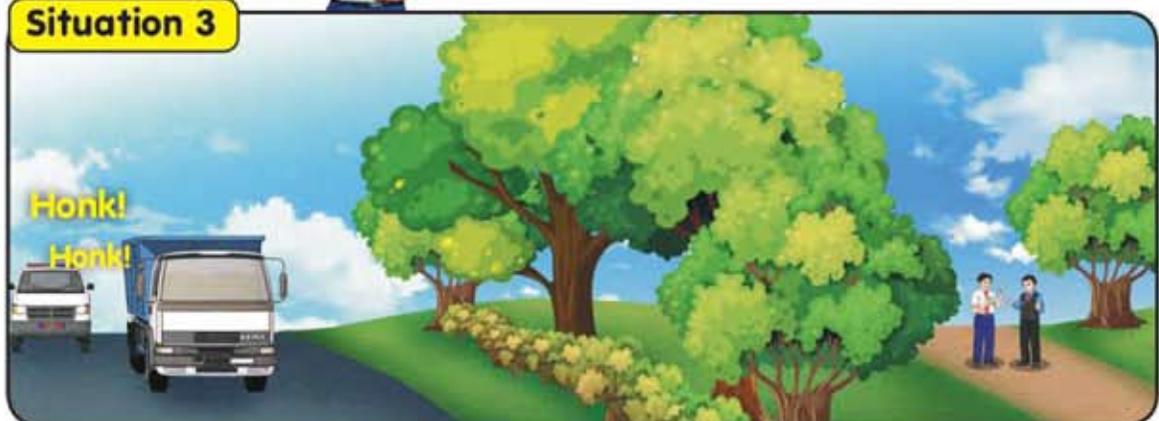
Situation 1



Situation 2

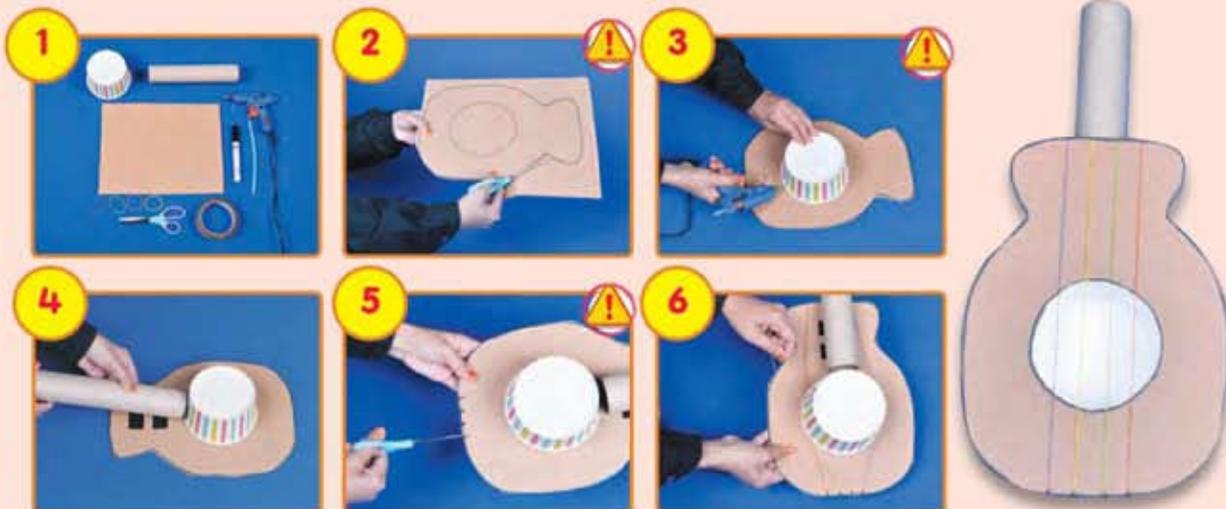


Situation 3



**Steps**

Produce a musical instrument using recycled materials such as a box, a paper bowl, rubber bands, hot glue gun, and adhesive tape based on your creativity.

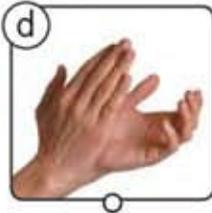
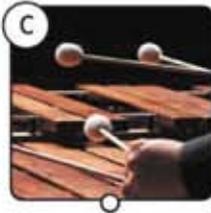
**MIND REFLECTION**

1. Sound is produced by vibrations.
2. Sound can be produced through blowing, knocking, plucking, bowing, and clapping.
3. Sound travels in all directions.
4. Sound can be reflected. For example, echo, sonar, and ultrasound.
5. Uses of sound are for:
 - communication.
 - notification.
 - emergency alert.
 - entertainment.
6. Sound pollution can cause:
 - communication problem.
 - stress.
 - disturbance.
 - hearing problem.
7. Ways to reduce sound pollution are as follows:
 - use ear protectors
 - use sound absorbers

MIND TEST

Answer all questions in the Science exercise book.

1. Match the ways of producing sounds based on the pictures below.



Bowing

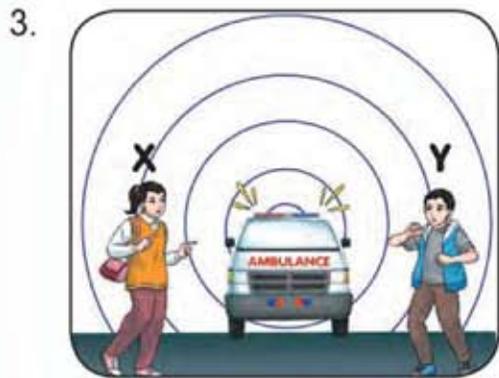
Blowing

Clapping

Plucking

Knocking

2. Vibrations produce .



Based on the diagram,
 (a) State your observations.
 (b) Give your inference based on the observations in (a).

4. Siva and his family visited Niah Cave. As soon as they arrived, Siva shouted in the cave. What is the resulting phenomenon? Explain.

5. Mei Lan loves to listen to music. However, she is disturbed by the loud music coming from her neighbour's house.

Tick (✓) to explain the effects of the sound above.

(a) Sound helps to communicate.	
(b) Sound is entertaining.	
(c) Sound provides alertness.	
(d) Sound causes disturbance.	



How can you stop the ringing of the alarm clock without turning it off?

