

Self –Study Pack

- Subject - Science
- Grade – 6
- Term – 2nd Term
- Unit – Sound and Hearing – (Unit 6)
- Learning outcomes
 - Identifies sound as the sensation received by the hearing organs/ear.
 - Give examples for different sounds existing in the environment.
 - Perform simple activities to experience the varieties of sound.
 - Distinguish sound in environment as natural and artificial.
 - Differentiate noise and music by experiencing various sounds.
 - Construct simple instruments to produce sound.
 - Enjoy music and natural sounds.
 - Accept that sound should be used without disturbing others.

❖ Let us identify different sounds we hear in our surrounding.

Activity 01

- Go outside your home. Listen to different sounds in the surrounding. List them down in the cage given below.

➤ Sounds you identified,

- In order to listen to those sounds properly; that means to increase the intensity of sound, make the device given below and use it. Record your observations.
- Things needed ..., a piece of Bristol board, a pair of scissors, glue
- Method: - As illustrate in diagram 1 make two conical shaped devices and use them as illustrated in diagram 2. Obtain your observations more properly than the first time and record them.



Diagram 1



Diagram 2

Question 01????

- Observe the external ear lobes of different animals and illustrate those using suitable diagrams.

For your knowledge

- **Ear** is the organ sensitive to sound.
- The human ear is sensitive to sounds in the frequency range 20Hz -20000Hz.
- The way we get the sensation of sound



- **Ear lobes** direct the sound waves towards the ear.

- ❖ Let us identify necessary precautions that should be taken to protect the ear.

Activity 02

- Study the pictures given below. Identify what you can do to protect your ears. Match the precautions with the pictures.



Put medicines for the ear with medical advice



Avoid slapping the ear



Wear safety equipment when you listen to loud noise



Wear safety equipment when diving



Refrain exposing to loud noises

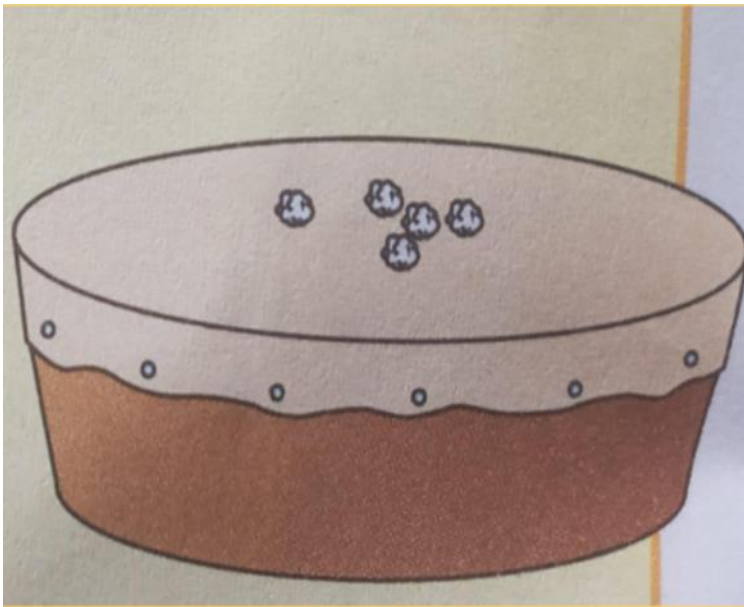
- ❖ Let us find out how sound generates.

Activity 03

Identify how sound generates by doing this activity.

- Things necessary: - a small drum, small balls of Styrofoam, a bicycle bell
- Method: - Spread the balls of Styrofoam on the drum. Then slightly tap the drum. Record your observations.

Diagram 03



- Ring the bicycle bell and slightly touch it.
- What does your hand feel?
- Observe the shutters of a bus when the engine is functioning.
- Observe the window shutters of your house when it is thundering.
- Keep the finger on your throat when you are speaking. What do you feel?

For your knowledge,

- ✓ Back and fore motion of a substance is known as **vibration**.
- ✓ **Sound** is generated by vibrations of objects.

- ❖ Let us make different noises

Activity 04

Perform following activities with necessary things.

- Tap a table with a pencil
 - Clapping
 - Put some pebbles or seeds in to a bottle and shake it.
 - Smash a polythene cover
 - Burst a balloon
 - Play any musical instrument that you have at the moment.
-
- Engage in different other simple activities to produce sound.

For your knowledge

- ✓ The devices that produce sound are called **sources of sound**.
- ✓ Animals, different equipment, musical instruments can be taken as sources of sound.

- ❖ Let us find out varieties of sound.

Activity 05

You remain silent. Listen to different sounds in the environment. Classify them as given in the following table.

Sounds occur without human interference	Sounds occur due to human interference
Sound of a waterfall	Sound of an airplane

For your knowledge,

- ✓ Sounds occur without human interference are known as **natural sounds**.
- ✓ Sounds occur due to human interference are known as **artificial sounds**.

❖ Let us identify music and noise.

Activity 06

- Walk in your garden on a clear sunny day. While walking, make list of pleasant sounds that you like to listen.
- Recall an instance where you went to Sunday fair with your mother. List down the unpleasant sounds that you heard during that time.

For your knowledge,

- ✓ Sounds that are produced to a rhythm are called **music**.
- ✓ Sounds that are produced without any rhythm are called **noise**.

- Categorize following sounds as music and noise

{Melody of a flute/ sound of vehicle horns/sound of a cuckoo/ sound of a flock of babblers [Demalichcha]/melody of a violin/ sawing wood/shout of men at a fair/sound of a tractor/a song sung by a singer/ sound of a hawk}

Music	Noise

- ✓ Listen to one of your favourite songs and experience its sweet melody.
- ❖ **Let us make instruments that produce sound.**

Activity 07

Study the diagrams given below and try to make the instrument.

1. A ring of tonic lids/tin lids/coconut shells



2. A simple guitar



3. Making a flute

✓ Pen tube flute



✓ Carrot flute



✓ Tender coconut leaf flute



Instead of above materials, glass bottles filled with water to different levels or laboratory test tubes can also be used.



4. Let us make a drum

✓ Balloon Drum



✓ Coconut shell hand drum



- ✓ Bamboo Drum/Rod drum



5. Making a xylophone



The above instruments can be made easily at home by improvising the materials which are already available in your immediate surroundings. Try them out.

Play the musical instruments you have made.

Important: - You must keep in mind that it is our duty and responsibility to use sound without disturbing others.

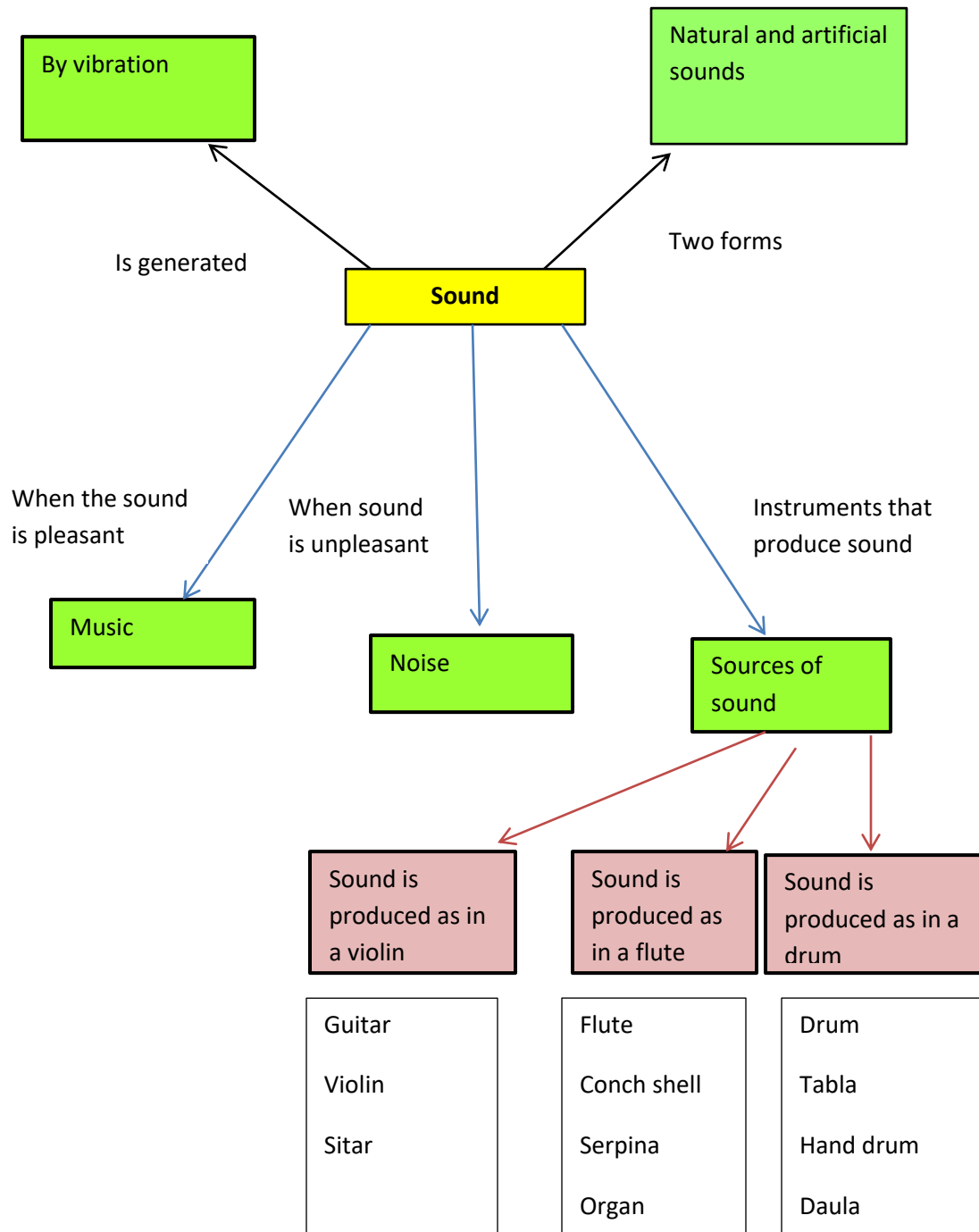
Let us measure knowledge.....

- Fill in the blanks with the correct answer that completes the sentence.
 - 1) The type of motion that takes place during generation of sound is known as (vibration/echo).
 - 2) The objects that produce sound are known as (musical instruments/sources of sound)
 - 3) The organ sensitive to sound in animals is (eye/ear)
 - 4) A (Serpina/ Tabla) is a musical instrument that produce sound with vibrating air column.
 - 5) Pleasant sounds that are produced to a rhythm are known as (noise/music)
 - 6) The sound emitted by a factory where machines are in operation brings (noise/music) to our ears.
 - 7) (Chirping of birds/sound of a flute) is a kind of natural sound.
 - 8) (Ear protectors/Sunglasses) can be used for preventing the damage caused to the ear by loud noises.
- The diagram given below illustrates a day today life incident that we all experience. Write down answers to the questions given.



- 1) According to the diagram what is the sound sensitive organ?
- 2) What is the special adaptation of that organ to direct sound waves towards it?
- 3) When is it unsuitable to listen to the sound produced by the bell?
- 4) If you have to stay in a place that emits sounds as illustrated in the diagram, what measures do you take?
- 5) What is the source of sound given in the diagram?

Summary



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