

Pre-Content/Content Post Content	Learning Outcomes/ Objectives	
	General	Specific
<u>Pre Content</u> Students know that we hear many sounds around us in everyday life. We hear sound when we are talking to each other. We hear sound of telephone bell, mixer-grinder, and television at home. In school they hear sound of bell and got to know that a period is over. Also we hear sound produced by various musical instruments. Sound plays a very important role in our life; it helps us to communicate with each other. <u>Content</u> ➤ How is sound produced? ➤ How is sound produced by humans? ➤ Propagation of sound through a medium ➤ Human ears ➤ Amplitude, Time period and frequency of a vibration ➤ Characteristics of sound ➤ Audible and inaudible sounds ➤ Noise and music <u>Post Content:</u> Students will learn how sound is formed. They will learn how musical instruments produce sound. They will come to know why some sounds are soothing to ears while some are disturbing. They will learn how noise pollution can be curbed.	Students will be able to: • realize the importance of sound. • discover how sound is produced by a vibrating body. • understand the production of sound in humans. • develop understanding that sounds needs a medium to propagate. • understand the structure and working of the ears • define the terms time period, oscillations and amplitude and relate the terms with pitch and amplitude. • understand audible and inaudible sounds. • distinguish between noise and music.	Students will be able to: • list various sounds they hear around them. • discover sound is produced by vibrating bodies and define the term vibration. • identify the vibrating parts of various musical instruments. • identify the appreciate the working of the voice box in the throat. • draw and label the diagram of voice box. • discover that sound needs a medium to travel • compare the speed of sound in solids, liquids and gases. • observe the model of ear and identify its parts. • correlate the ear drum to the vibrating parts of the musical instruments. • recall and define the terms oscillation , time period, amplitude and frequency. • relate amplitude, frequency with pitch and loudness. • realize that all sounds are not audible to us. • identify the audible range in hertz. • compare noise and music. • identify the harmful effects of noise. • realize the need to minimize noise pollution.

Homework:

- Exercise questions
- Extra questions
- Worksheets

Teacher's Activity	Student's Activity	Teacher's Observation and Remedial action taken
Teacher will: show a vibrating body produces sound using a tuning fork and rubber pad. <u>Annexure 13 (A)</u> demonstrate the working of vocal cords using paper strips <u>Annexure 13 (B)</u> demonstrate how different sounds are produced in Jal Tarang. <u>Annexure 13 (C)</u> demonstrate the working of string telephone as per the Activity Kit. explain the working of human eardrum with the help of a video. <u>Annexure 13 (D)</u> explain the concept of oscillatory motion, and characteristics of sound and classification of sound using a mind map. initiate a discussion in the class on noise pollution.	Students will: observe and note the observations <u>Annexure 13 (a)</u> perform the activity and note their observations <u>Annexure 13 (b)</u> perform the activity and note the observation. <u>Annexure 13 (c)</u> make a string telephone on their own and record the observations. draw a neat and labeled diagram of ear and write the working in the notebooks. <u>Annexure 13 (d)</u> complete the mind map on the basis of their understanding participate in the class discussion.	

Teaching Aids: Activities performed in Science Park to discover an echo and that the pitch of sound depends on the air column, ICR, activity worksheet, Assignments, Reference books and text books.

Methodology/ Innovative Methods: Activities carried out in the science park

Interdisciplinary Links: Math: Calculation of frequency and time period. Health: Harmful effects of noise pollution.

Art- draw neat diagrams, Music- Jaltarang

HOD

Coordinator

Vice-Principal

Principal

➤ **ANNEXURE 13(A)**

Teacher will demonstrate the working of vocal cords using paper strips.

AIM: To demonstrate the working of vocal cords using paper strips.

MATERIAL REQUIRED: sheet of paper, a pair of scissors.

PROCEDURE: Take a sheet of paper and fold it into two halves. Make a hole on the folded side with the help of scissors. Further fold the two halves in opposite direction. A slit will be formed (fig, given below). Blow air from the slit.

➤ **ANNEXURE 13(a)**

Students will perform the activity and record the observations

OBSERVATION: sound will be produced as air is blown into the slit.

CONCLUSION: Sound is produced by vibration of slits of our Vocal Cords

ANNEXURE 13(B), 13 (b)

ACTIVITY NO. 13 - LET'S MAKE SOME MUSIC

Subject	Science
Class	VIII
Chapter/Unit	Sound
Topic	Jal Tarang
Time	30 minutes
Nature of Activity	Group

What will I learn (Learning Outcome)?

Will comprehend the relation between pitch and frequency

Skills: Applying and Analyzing

What I have to do?

To show the relation between pitch and frequency

What do I require?

6 glasses, water, pencil/pen/stick.

What do I need to know?

Pitch refers to the effect of frequency of the vibrations on the ears. Higher the frequency more will be the pitch and vice versa. Sounds having higher pitch are shriller.

➤ **Teacher's Activity**

Teacher will divide the students into groups and will introduce the activity to them. Teacher will give demonstration and will ask the students to perform it after observing.

1. Take 6 glasses and mark the glasses as A,B, C, D, E and F
2. Pour water in them in increasing order i.e. glass B will have more water than glass A, glass C will have more water than glass B and so on.
3. Strike the glasses filled with water with pencil.
4. Record the observations.

How will I proceed?

➤ **Student's Activity**

Students will observe the activity and perform the activity in groups. They will record the observations in the table given below.

What have I observed?

S.No.	Observation	Name of the glass
1.	Which glass will have most shrilling sound?	
2.	Which glass will have the low pitched sound?	

What have I learnt?

Frequency and pitch are _____ related to each other. The more the frequency the _____ the pitch and the sound will be _____.

What am I curious to learn?

- Let us make miniatures of musical instruments in groups and note their observation
- Let us relate amplitude and loudness.

Let me evaluate myself

1. What is the audible hearing range of human ear?

2. Name three musical instruments and their vibrating parts.

3. How is the voice of a 5 year old child different from the voice of a 25 year old man?

4. The wires of a guitar are of different thickness. Why?

5. Draw two graphs representing high pitch and low pitch sound waves.



ANNEXURE 13(C), 13 (c)

Activity – Working of string telephones

Chapter- Sound

Class: VIII

Duration: 20 minutes

Nature of the activity: Group

Learning Outcome: Students will be able to experience that sound travels through solids.

What we have to do?

To show that sound travels through solids

What do we require?

2 Thermocol Cups, Long thick thread (about 20 meters long) and A Pin to make holes.

What you need to know?

Sound is a form of energy propagated by the vibration of particles. When an object vibrates, the air in the vicinity vibrates. This propagation of sound waves continues until it is unable to produce vibration in the surrounding medium.

How do we proceed?

➤ **Teacher's activity:**

Teacher will arrange activity kits with the above mentioned material and will give instructions to the students for the activity.

➤ **Student's activity:**

1. Take two cups and make a small hole in the centre of its bottom with the help of a pin.
2. Pass one end of the thread into the hole of one of the cups and hole it inside the cup by tying a knot.
3. Similarly, pass the other end of the thread through the second cup and again hold it inside the can by tying a knot.
4. The two cups connected by the long thread can be held by two children stretched tightly at a distance as far as possible.
5. Now, one child will speak in one of the cups and the other child will place the cup held tightly to one of his ears.
6. Similarly, the above step will repeated by the child holding the cup tightly to his ears.



What do we observe?

The sound is travelling from the _____ of one person to the _____ of the other person.

What have you learnt?

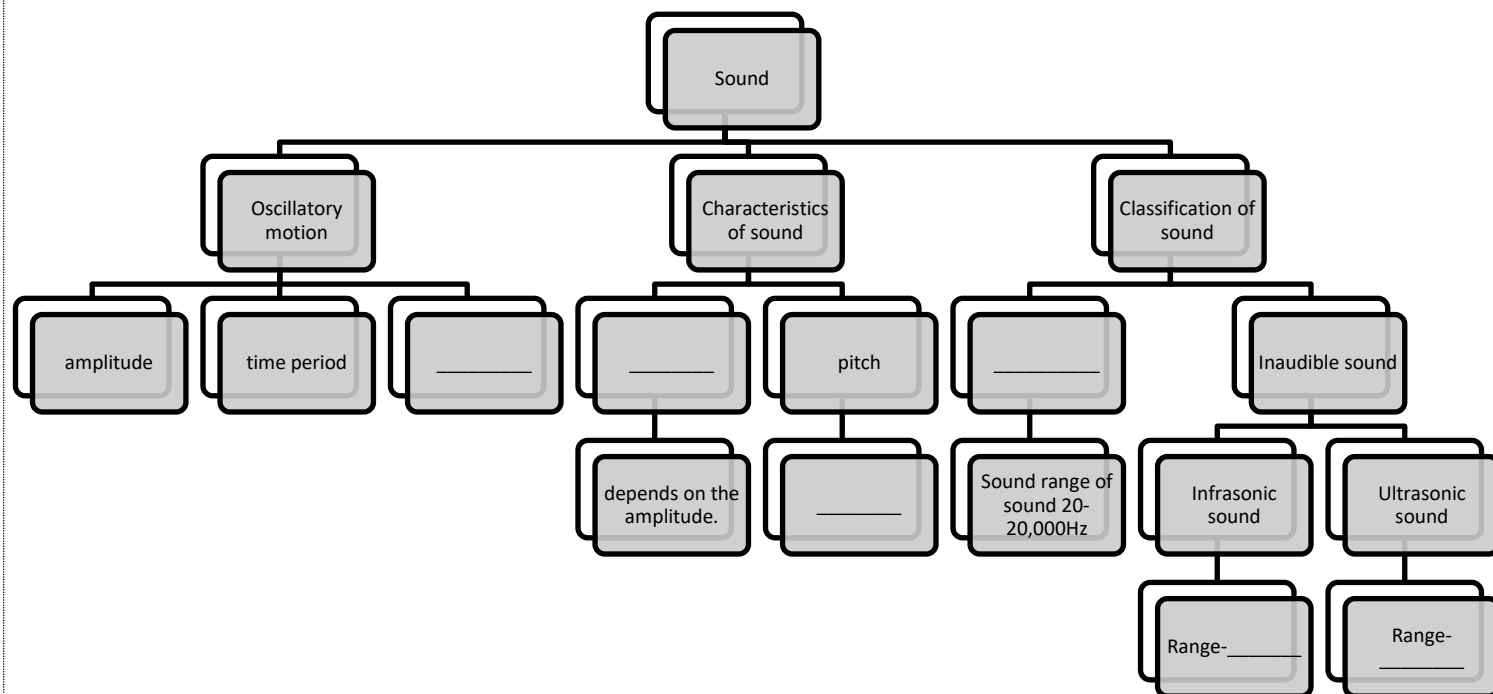
Sound is travelling through _____. Sounds need a _____ for propagation.

What more can we do?

Repeat the same activity taking Metal Cans instead of Thermacol Cups and similarly take a copper wire to connect the metal cups instead of a thread and record your observation.

➤ **ANNEXURE 13(E)**

Teacher will explain the concept of amplitude, amplitude time period and frequency of a vibration, and characteristics of sound using a mid map.



➤ **ANNEXURE 13(e)**

Students will complete the mind map on the basis of their understanding.