



Master Lesson Plan

For

Sound

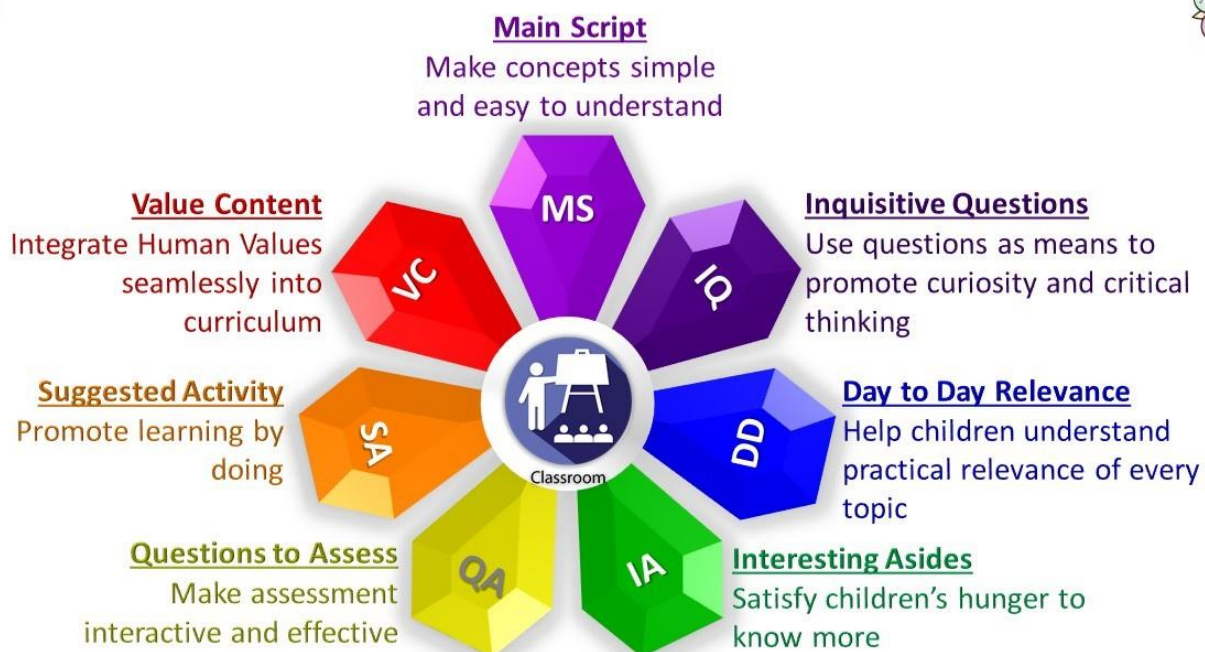
Board	Standard	Subject	Chapter	Language	Reference Link	Creation
CBSE	STD VIII	Science	Sound	English	Sound	2020-11

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Master Lesson Plan (MLP) - Covers the entire chapter with the help of these 7 asset types



For more information on how to use the lesson plan effectively, please scroll to the guidelines at the end of this document.

Sound

1. MS_ Objectives_ Sound

Notes to the teacher: This asset lays down the proposed plan for transacting this chapter. It states the asset objectives of the MLP. This asset is for teacher's reference and need not be taught to the students:

Students will be able to...

- make a simple mouth organ
- discuss how sound is produced and propagated
- explain the different types of sounds
- demonstrate that sound travels through solids and liquids
- explain how human beings produce and hear sound
- identify the importance of sound in our life
- describe the characteristics of sound
- relish the facts about the length of our vocal cords
- explain the loudness and pitch of the sound
- appreciate the architectural structure of the musical pillars of the vijaya vittala temple of Hampi
- explain the sources and the harmful effects of noise pollution
- list the measures to be taken to control the noise pollution
- relate this to the concept of forgiveness
- assess themselves on the different concepts of sound such as types of sounds and characteristics of sound

Time to teach	Asset Type	Theme	Sub Theme
5 Minutes	Main Script	Sound	Types of sounds , characteristics of sound

2. SA_ Simple Mouth Organ

Aim: To make a mouth organ using ice cream sticks.

Resources Required: Two ice cream sticks, paper strip, 2 rubber bands, 2 match sticks

Setting for the Activity: Indoor

Type of Activity: Demonstration

Procedure:

1. Make a paper strip of same length as that of the ice cream stick.

2. Place the paper strip on one ice cream stick then, place two match sticks on the ends; finally place another ice cream stick on the top such that it is balanced on the matchsticks.



3. Wind rubber band on two ends.



4. Now hold the mouth organ at your mouth and blow to hear a musical sound.

Observation: As we blow air through the slit between the two sticks, the paper strip vibrates, thus generating a sound.

Conclusion: A mouth organ is made using ice cream sticks and it produces sound when air is blown through the slit between the two sticks. Our vocal cords also produce sound in a similar way. The air from the lungs is pushed through the slit between the vocal cords. The vocal cords vibrate, thus producing sound.

Precautions: While winding the rubber band ensure that the position of the match sticks is not changed.

Discussion Questions:

1) How many vocal cords do we have and where are they present in our body?

Answer:

- We have two vocal cords. The voice box has two vocal cords.
- These two vocal cords are stretched across the voice box in a way that there is a narrow slit between them for the passage of air.

2) How do we produce sound?

Answer: When we speak, the air is forced/pushed by the lungs through the slit between the vocal cords and then, the vocal cords vibrate, thus producing sound.

List of the images used

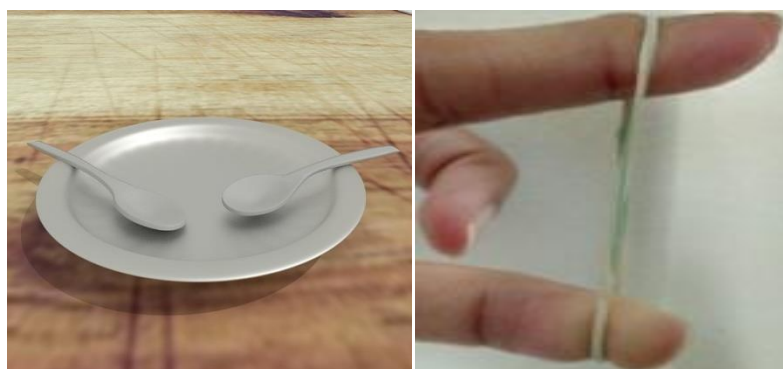
Step-one: <http://www.arvindguptatoys.com/arvindgupta/toys/puppeteerswhistle01.jpg>

Step2: SA: <http://www.arvindguptatoys.com/arvindgupta/toys/puppeteerswhistle03.jpg>

Time to teach	Asset Type	Theme	Sub Theme
20 Minutes	Suggested Activity	Sound	Production of sound by vibration How do we hear?, Production vibrating bodies

3. MS_ Sound, Vibration and Propagation

- When we pluck a rubber band, it vibrates and produces some sound. Similarly, when we tap a plate with a spoon, it also vibrates and produces sound. In these two cases, sound is produced due to vibration.



- Thus we see that, sound is produced by any object when it vibrates. The up and down or back and forth motion of an object is called as vibration. This motion is also called as oscillatory motion.

Example: When we pluck the strings of a guitar, they move back and forth(vibrate) and produce sound.

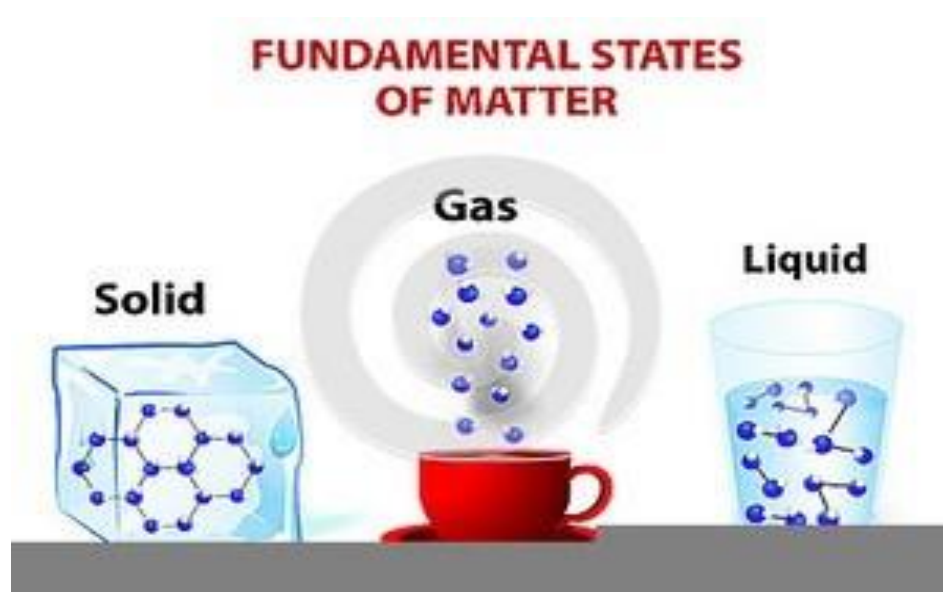


Propagation of Sound:

- Sound requires a medium to propagate. The molecules of the medium carry the sound waves from one place to another.
- Sound can travel through solids, liquids, and gases. It cannot travel through vacuum as vacuum does not contain molecules to carry the sound waves. Further, it must also be noted that the speed of sound is different in solids, liquids, and gases.

Question: In which medium (solid, liquid, or gas) does sound travel the fastest, and why?

Answer: It travels the fastest in solids because the molecules in a solid are closely packed, thus, enabling sound waves to propagate faster.



- Suppose we keep our ear on one end of the table and ask our friend to tap the bench on the other end, we can clearly hear the tapping sound. This shows that sound travels through solids.



- Aquatic animals like dolphins can communicate with each other. This shows that sound travels through liquid.



- If the calling bell rings in our home we are able to hear the ring clearly. This shows that sound travels through air.

List of the images used

Plate-spoon: SA: <https://pixabay.com/en/plate-spoon-dining-table-event-eat-2826200/>

Stretched-rubber: SG:

https://www.srisathyaivaividyaahini.org/images/joomgallery/details/images/Stretched_rubber_band_20180404_2032147189.jpg

Vibration: OC: pavani.sathyasai@gmail.com

matter: SA: <http://www.clker.com/clipart-600816.html>

Boy :SA: <http://www.clker.com/clipart-346763.html>

Bending-boy: SA: <http://www.clker.com/clipart-608348.html>

Table: SA: <https://pixabay.com/en/table-grey-silver-flat-couch-308862/>

Dolphin: SA: <https://pixabay.com/en/dolphin-ocean-sea-marine-mammals-2691864/>

Guitar: SA: <https://pixabay.com/photos/guitar-music-man-play-strum-chord-869217/>

Time to teach	Asset Type	Theme	Sub Theme
12 Minutes	Main Script	Sound	Production of sound by vibration

4. IA_ Length of Vocal Cords

- The length of vocal cords in men, women and children is not the same.
- The vocal cords in men are about 22 mm long and in women, they are about 15 mm long and children have short vocal cords.
- Because of this reason, the voices of men, women and children are different.
- For the first 20 years of our life, the length of the vocal cords increases gradually with our age at a rate of approximately 0.7 mm per year for males and 0.4 mm per year for females and after that, the length of the vocal cords remains stable.



Family:SA: <http://www.clker.com/clipart-420740.html>

Time to teach	Asset Type	Theme	Sub Theme
3 Minutes	Interesting Asides	Sound	How do we hear?

5. MS_ Types of Sounds

Based on their frequencies, sounds can be divided into 2 types.

They are

- 1. Audible Sounds**
- 2. Inaudible Sounds**

1) Audible Sounds:

- Sound waves of frequencies between 20Hz and 20,000Hz or 20 KHz are called as audible sounds.
- They are the range of frequencies that can be heard by the human ear.



**Sounds of
frequencies between
20Hz and 20,000 Hz**

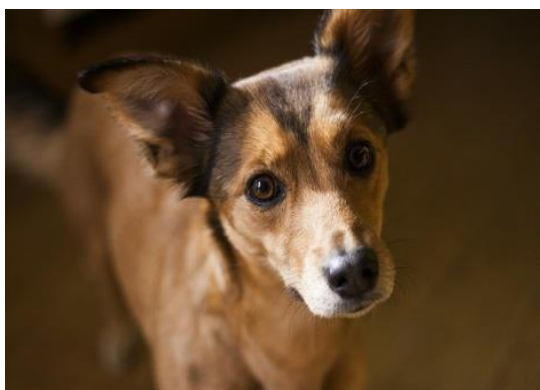
2) Inaudible Sounds:

- Sound waves of frequencies less than 20Hz and greater than 20,000Hz are called as inaudible sounds.
- They cannot be heard by the human ear.
- Inaudible sounds are again classified into two types.

1. Infrasonic Sounds

2. Ultrasonic Sounds

- Sound waves whose frequency is less than 20 Hz are called as infrasonic sounds. Animals like dogs and elephants can produce and hear infrasonic sounds.



- Sound waves whose frequency is greater than 20,000 Hz are called as ultrasonic sounds. Animals like dolphins and bats can produce and hear ultrasonic sounds.



List of the images used

Man:SA: <https://openclipart.org/detail/285064/man-physical-education-teacher>

Dog:SA: <https://pixabay.com/en/dog-pet-small-dog-short-hair-view-1382413/>

Elephant:SA: <https://pixabay.com/en/elephant-babies-elephant-family-278524/>

Dolphin: SA: <https://pixabay.com/en/dolphin-ocean-sea-marine-mammals-2691864/>

Bat:SA: <https://pixabay.com/en/bat-bird-animal-embalmed-569442/>

Time to teach	Asset Type	Theme	Sub Theme
5 Minutes	Main Script	Sound	Audible and inaudible sound

6. IQ_ Importance of Sound in Our Life

[Notes to the teacher - Teacher may enable the students to think and come out with as many answers as possible before giving out the right answer/ answers]

1. Do you think you can enjoy watching TV without sound?

Answer: No, without sound, we cannot hear what the actors in the TV programme are speaking. So, we cannot enjoy watching TV without sound.



2. How do animals communicate with each other?

Answer: Animals communicate with each other through sounds and gestures. Animals make different sounds to convey different meanings.

**3. What do you think will happen in the absence of a vehicle horn?**

Answer: If there is no horn in the vehicle, we cannot indicate the direction of our vehicle's movement to the drivers of the other vehicles. And this results in the road accidents.

**4. How do you communicate with each other in the class?**

Answer: We communicate with each other in the class through speech. One person speaks the words and other persons listen to the words spoken.



List of the images used

Watching-TV:SA: <https://openclipart.org/detail/280813/watching-tv>

Animals:SA: <https://openclipart.org/detail/220150/african-animals-coloured>

Accident:SA: <https://openclipart.org/detail/285067/motor-vehicle-accident>

Classroom:SA:<http://www.clker.com/clipart-610103.html>

Time to teach	Asset Type	Theme	Sub Theme
4 Minutes	Inquisitive Questions	Sound	How do we hear

7. MS_ Characteristics of Sound

The main characteristics of sound are

1. Amplitude
2. Frequency
3. Time Period
4. Speed

1) Amplitude(a):

- The maximum displacement of the vibrating body from its mean position is called as the amplitude. Amplitude of a wave is the 'height' of the wave.
- The volume or loudness of a sound depends on the amplitude. If the amplitude is large, the sound produced is loud, and similarly when the amplitude is small, a feeble sound is produced.
- Loudness of a sound is measured in units of decibels(dB).
- A device called amplifier is used to increase the amplitude of a wave.
- Units for amplitude are Metres (m).

2) Frequency(n):

- The number of oscillations made by the vibrating body per second is called as the frequency. Units for frequency are Hertz(Hz)
- If an object vibrates 20 times in one second, then the frequency is 20 Hz.

3) Time Period (T): The time taken by a vibrating body to complete one vibration or oscillation is called as the time period.

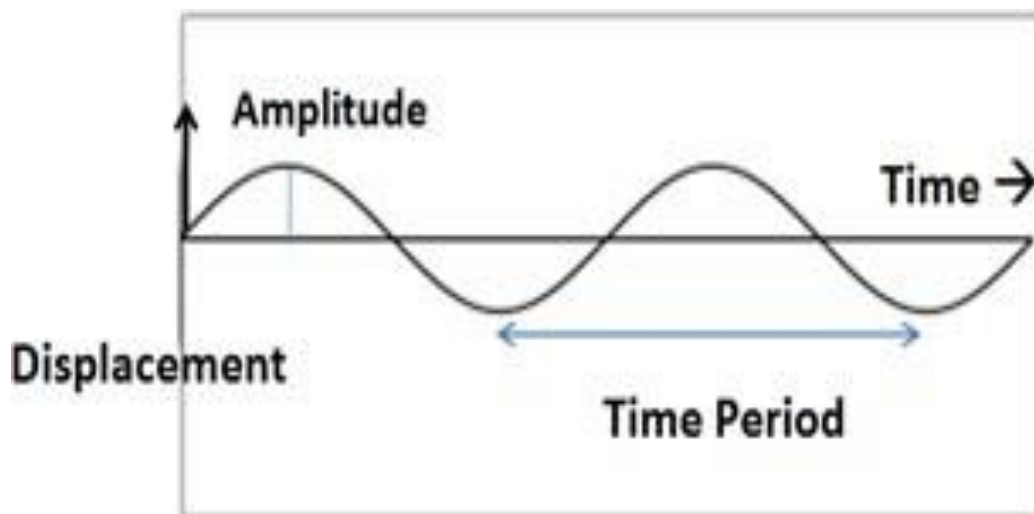
- Units for time period are Seconds (s).
- Time period = Total time taken/Number of oscillations or vibrations.

The relation between frequency and time period is

$$\text{Time Period (T)} = \frac{1}{\text{Frequency (n)}}$$

4) Speed:

- Speed of sound is the distance travelled by it in one second.
- The S.I unit of speed is metre per second (ms⁻¹)



Sine-wave:SA: <https://openclipart.org/detail/234920/sine-curve>

Time to teach	Asset Type	Theme	Sub Theme
5 Minutes	Main Script	Sound	Characteristics of sound

8. SA_ Sound travels through solids and liquids

Activity I

An Activity to show that sound travels through solids

Aim: To show that sound travels through solids

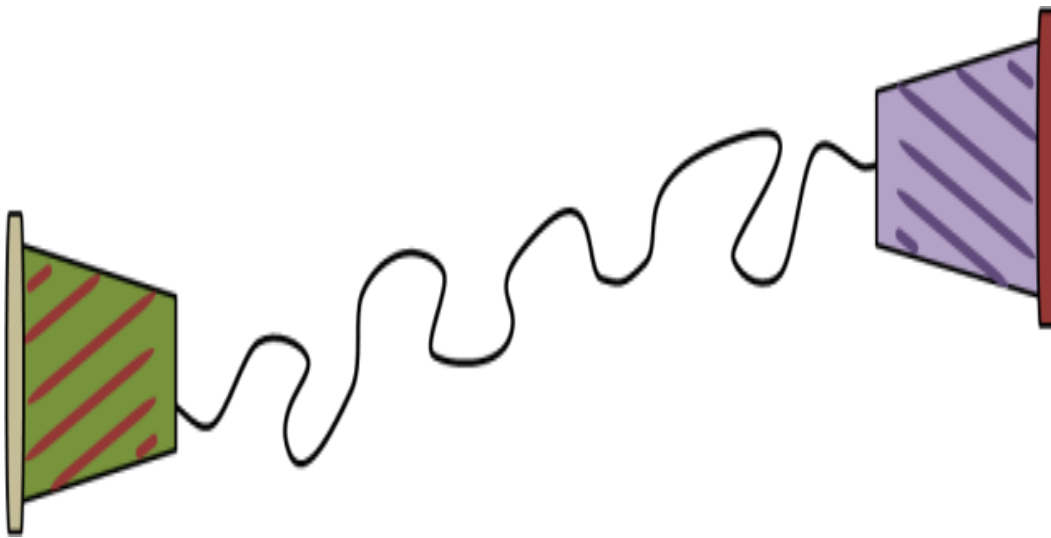
Resources Required: Two paper cups, a string or twine thread of 4 metres long, a needle

Setting for the Activity: Indoor

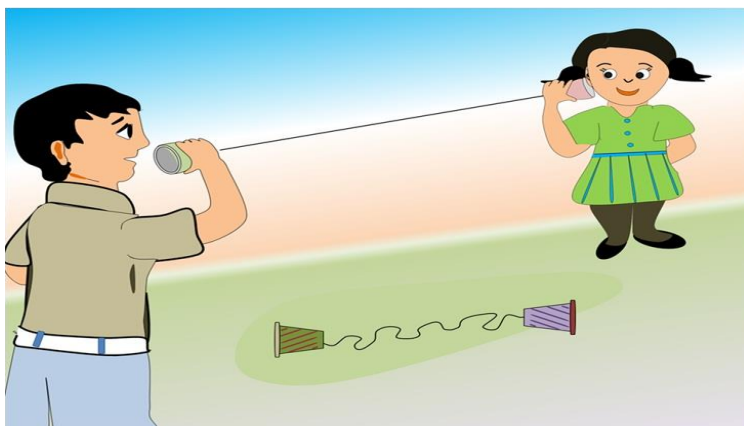
Type of Activity: Demonstration

Procedure:

1. Make a hole at the bottom of each cup using the needle and make sure that the holes are large enough to pass the thread through them.
2. Pass one end of each thread through the hole of one cup and tie the knot tightly at the hole from inside the cup and similarly tie the other end of the thread to the other cup.



3. Ask one of the student to keep one cup near his ear and ask their friend to stand at a distance and speak through the other cup.



Observation: The student holding the first cup can clearly hear the words spoken by his friend through the other cup.

Conclusion: As the words spoken through one cup are clearly heard at the second cup, this shows that sound travels through solids.

Precautions: Students should be careful while making holes through the bottom of the cups using a needle.

Discussion Questions:

1. If someone knocks at the door from outside, we are able to hear the sound. What does it indicate?

Answer: It indicates that sound travels through solids (door).

Activity II

An Activity to show that sound travels through liquids

Aim: To show that sound travels through liquid

Resources Required: A bucket of water and a bell

Setting for the Activity: Indoor

Type of Activity: Demonstration

Procedure:

1. Take a bell and shake it. Listen to the sound produced by the bell.



2. Keep the bell inside the water in a bucket without touching it to the walls of the bucket.



3. Now shake the bell and listen to the sound produced by the bell.

Observation: The sound produced by the bell inside the water is clearly heard without any disturbance.



Conclusion: As the sound produced by the bell inside the water is heard clearly without any disturbance, this shows that sound travels through liquids.

Discussion Questions:

1) Can sound travel through vacuum?

Answer: No, sound cannot travel through vacuum. It requires a medium for propagation.

2) Do aquatic animals like dolphin communicate with each other? What does this indicate?

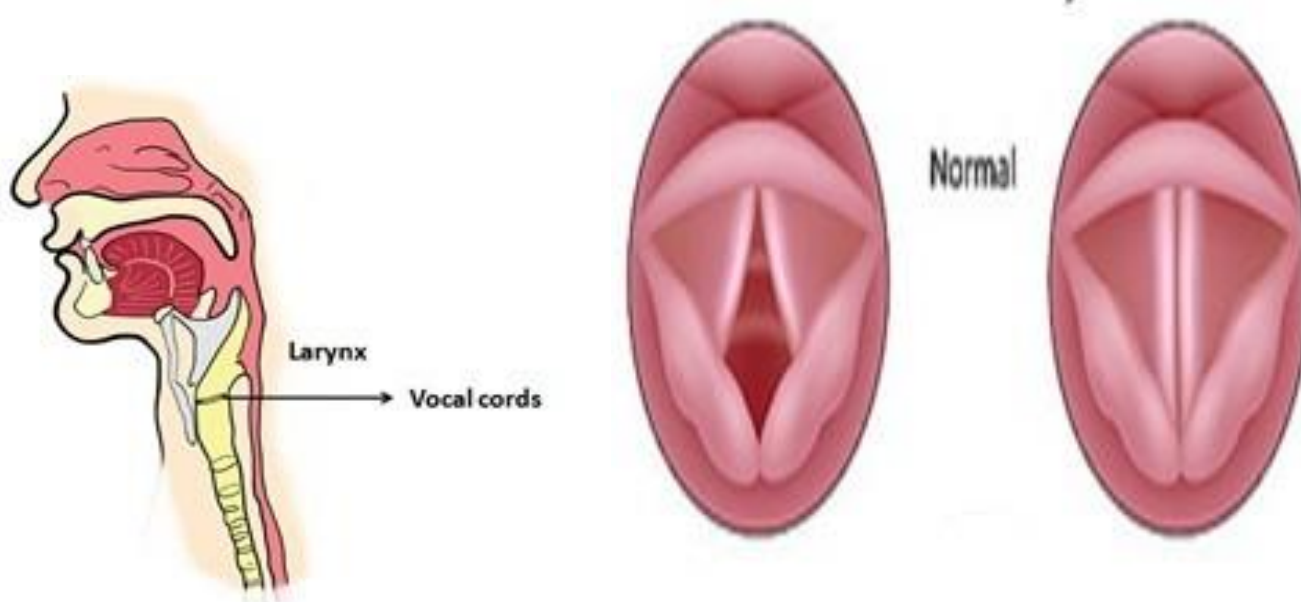
Answer: Yes, aquatic animals like dolphin can communicate with each other. This indicates that sound travels through liquids.

List of the images usedCup-phone:OC:rushmish@gmail.comTalking-cup-phone:OC:rushmish@gmail.comBell:SA: <http://www.clker.com/clipart-266526.html>Bucket:SA: <https://pixabay.com/en/blue-bucket-tool-container-1896418/>

Time to teach	Asset Type	Theme	Sub Theme
20 Minutes	Suggested Activity	Sound	Propagation of sound (tuning)

9. MS_ How do we produce and hear sound?**Production of Sound**

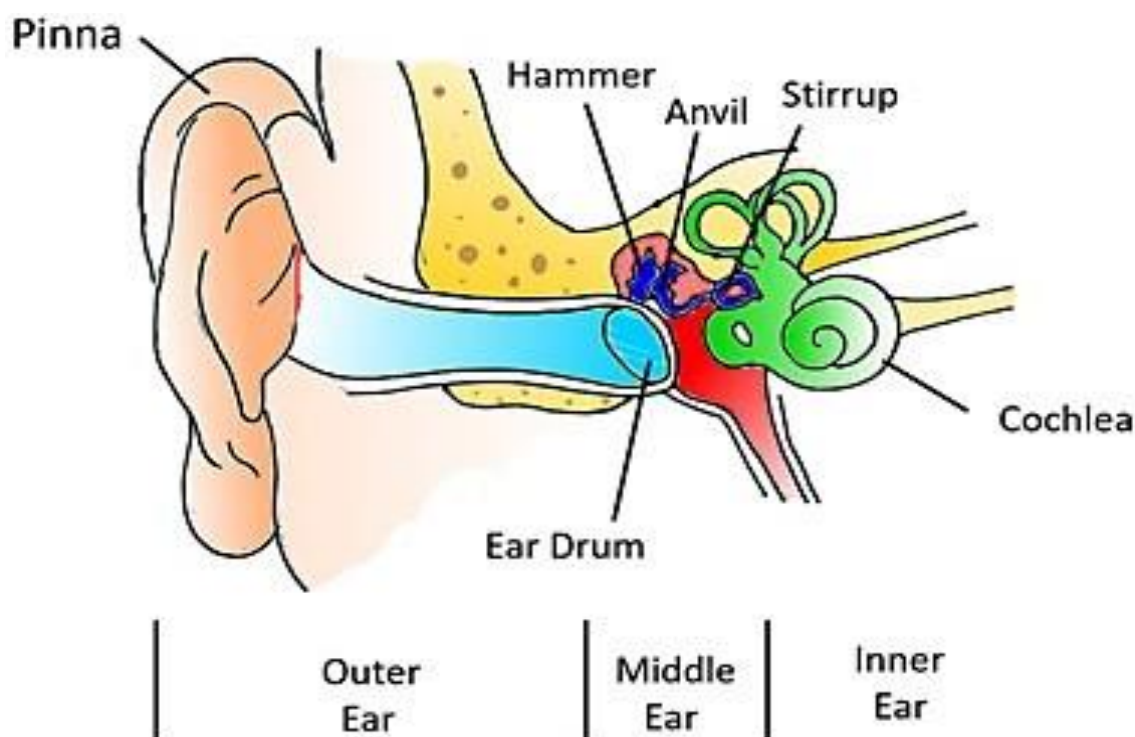
- Sound is produced by the voice box or “larynx” in human beings.
- The voice box has two vocal cords.
- Two vocal cords are stretched across the voice box in a way that there is an arrow slit between them for the passage of air.
- When we speak, the air is forced/pushed by the lungs through this slit and then, the vocal cords vibrate, thus producing sound.

**Hearing of Sound by Humans**

- We hear sound through our ears. The outer ear is the only part of the ear that can be seen and felt by us.
- The shape of the outer ear appears like a funnel and it contains pinna and ear tube. At the end of the ear tube,

a thin and elastic (circular) membrane called ear drum is stretched tightly.

- The middle ear has three tiny bones that are linked to each other. The inner ear has a coiled tube and the auditory nerve.
- Sound vibrations are collected by the pinna of the outer ear. They are passed through the ear tube to the ear drum, and these sound vibrations make the ear drum vibrate.
- The ear drum sends the vibrations to the inner ear from where the signals are sent to the brain.
- The brain interprets these signals and gives us the sensation of hearing.



- We should never put any sharp or pointed object into our ear as it can tear/damage the ear drum. A damaged eardrum makes a person deaf.



List of the images used

Larynx: SA: <https://pixabay.com/en/the-larynx-the-pharynx-anatomy-2381980/>Ear: SG: https://www.srisathyaivaividyaahini.org/images/joomgallery/details/images/Structure_of_human_ear_20180817_1861159991.pngDeaf: SA: <http://www.clker.com/clipart-539556.html>Vocal cords: SA: <http://www.clker.com/clipart-716324.html>

Time to teach	Asset Type	Theme	Sub Theme
10 Minutes	Main Script	Sound	Production of sound by vibration

10. IA_ Musical Pillars

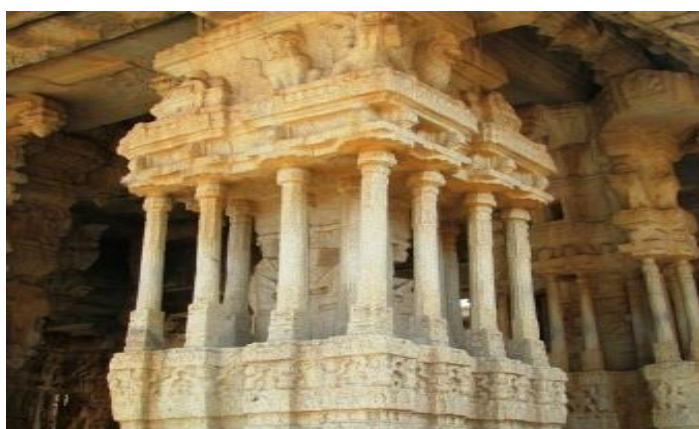
- The town of Hampi is located in the Karnataka state of India. It is UNESCO's World Heritage site.



- Vittala temple in Hampi is the most magnificent architectural structure of all the structures in Hampi. It is located in the north eastern parts of Hampi on the banks of the river Tungabhadra.
- The Ranga Mandapa of Vittala temple contains 56 musical pillars. They are also known as the SAREGAMA pillars. They produce musical notes when they are tapped.



- Each main pillar provides support to the ceiling of the Ranga Mandapa, and they are designed as musical instruments. Every main pillar is supported by 7 minor pillars.
- These seven minor pillars produce 7 musical notes of the instrument represented by that pillar.



List of the images used

Hampi: SG: https://www.srisathyaivaividyaahini.org/images/joomgallery/details/placeS_142/religiouS_150/hampi_20161017_1276658098.jpg

Vijaya- vittaala-temple: SA: <https://pixabay.com/en/vijaya-vittala-temple-hampi-india-279476/>

Main-pillar: SA: <https://pixabay.com/en/musical-rock-pillars-hampi-india-279964/>

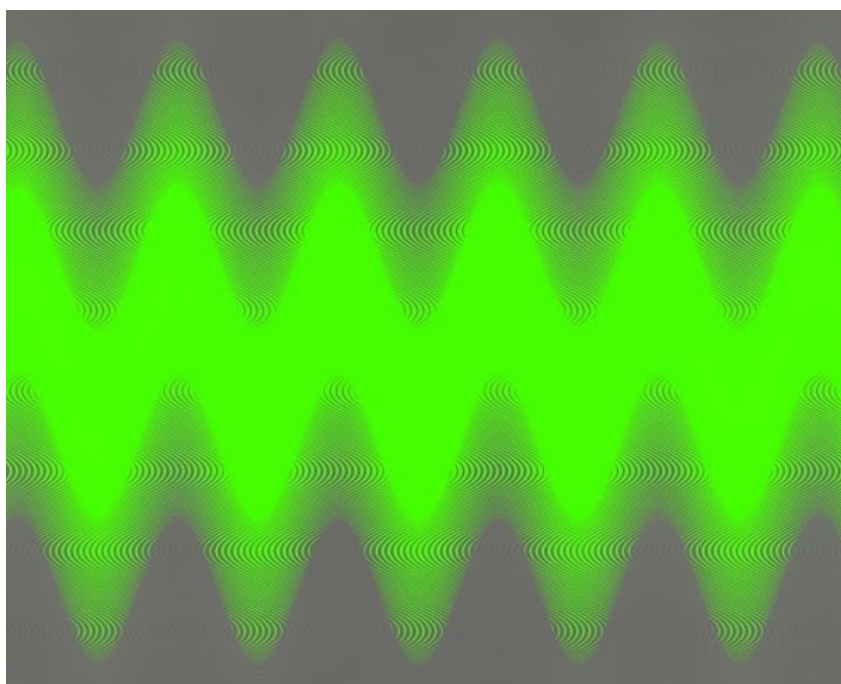
Pillars: SA: <https://pixabay.com/en/pillars-sculpture-stone-pillars-279474/>

Time to teach	Asset Type	Theme	Sub Theme
3 Minutes	Interesting Asides	Sound	Reflection of sound (echo)

11. MS_ Loudness and Pitch

Loudness:

- The loudness of a sound is the subjective perception of sound by our ears. It refers to how loud or soft a sound appears to the listener.
- The loudness (volume) of sound depends on its amplitude.
- Loudness (volume) of sound is proportional to the square of the amplitude of the vibration producing sound.
- Loudness is measured in units called decibels (db).



- If the amplitude is large, the sound produced is loud, and similarly when the amplitude is small, feeble sound is produced.
- Example:

Sound Source	Loudness
Normal breathing	10 dB
Soft whisper	30 dB
Normal conversation	60 dB
Busy traffic	70 dB
Average Factory	80 dB

- If the volume of sound is above 80 dB, then the sound becomes noise, which is harsh to the ears.

Pitch:

- The pitch of a sound is our ear's response to the frequency of sound. It refers to how high or low a sound is.
- The shrillness or pitch of a sound depends on frequency.
- If the frequency of a vibration is high, then the sound produced is shrill and has a high pitch. Similarly, sounds with low frequency have a low pitch.
- Example: A drum produces a low-pitched sound as it vibrates with low frequency. A whistle produces a high-pitched sound as it vibrates with a high frequency.

**List of the images used**

Amplitude:SA:<https://www.publicdomainpictures.net/en/view-image.php?image=152152&picture=glowing-green-zig-zag>

Table:OC:pavani.sathyasai@gmail.com

Whistle:SA: <https://www.publicdomainpictures.net/en/view-image.php?image=248908&picture=orange-whistle>

Drum:SA: <https://www.publicdomainpictures.net/en/view-image.php?image=206913&picture=drum-kit>

Time to teach	Asset Type	Theme	Sub Theme
6 Minutes	Main Script	Sound	Loudness and pitch of sound

12. VC_ The Weight of Resentment

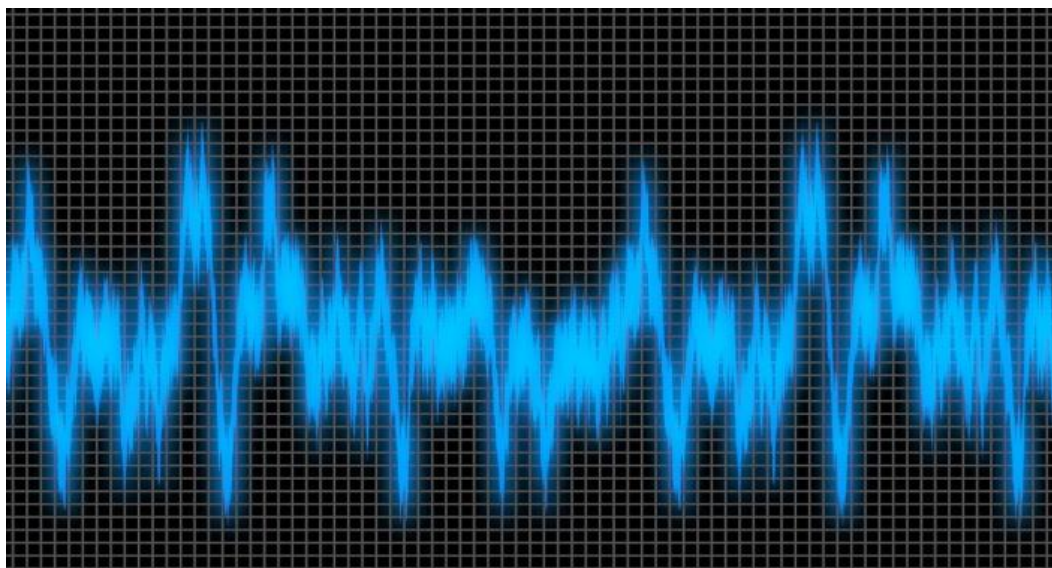
Learning Domain- Classroom

Excessive or unwanted sounds lead to noise pollution. Noise pollution may pose health problems for human beings. Attempts should be made to minimise noise pollution. Larger the amplitude of vibration, louder is the sound. Higher the frequency of vibration, the higher is the pitch, and shriller is the sound.



There is often a shrill voice in the head, especially after we have had a heated argument with someone or when someone slights us or insults us or has used bitter language and abusive words. We are not able to forget the incident and there is a voice in our head which says, "Do not spare the person who has wronged you. Wait for the right moment to get even."

We keep carrying it in our minds. The more such incidents happen, the more such animosity or negative feelings get accumulated in our minds. After a certain point, they start polluting our minds and hearts. These excessive negative feelings pose health problems for us.



Children, today we shall see a story that explains why you should not carry excessive and unwanted negative feelings.

Once a teacher suggested to each child in the class to bring a paper bag containing a few potatoes. The number of potatoes should be equivalent to the number of persons that the child hates. Each potato will be given the name of the person that the child hates.



The next day all the children brought a bag each with the potatoes. Some had 2, some had 3 and some even had 5 potatoes.

The teacher told them that they should carry the bags with them for a week, wherever they go and they must for a week, put it beside their bed at night and next to their desk in school.

Naturally, the condition of the potatoes started deteriorating after a few days, and they started emitting a nasty and foul smell. Added to that was the difficulty of carrying this weight around with them.

After a week, the students were happy to discard the smelly bag of rotten potatoes.

The teacher asked the children, "How did you feel carrying the potatoes with you for one whole week?". The children explained their frustrations due to the unpleasant smell let out by the rotten potatoes and the trouble they had to go through having to carry the heavy and smelly bag wherever they went.

Then, the teacher told them the hidden meaning behind the game. The teacher said: "This is exactly the situation when you carry your hatred and resentment for somebody inside your heart. The stink of hatred will pollute your heart and mind, and the burden of carrying it with you wherever you go would result in health issues."



Notes to the teacher:

Discuss in the class, elicit answers from children and proceed to explain:

Children. What do you learn from this story?

(Throw away any hatred for anyone from your heart so that you will not carry the burden for a lifetime
Forgiving others is the best attitude to adopt !)

How do you go about forgiving others?

Forgiveness can be challenging, especially when the offending person is insensitive and offers no apology or shows no remorse. However, acknowledging the wound by understanding the others' perspective is often the best path forward to process our emotions in healthy ways.

Most psychologists recommend gathering up compassion and moving on from the past and from those who have wronged us, instead of allowing bitterness and fury to trouble our emotional well-being.

Image Source:

Noise Pollution : <https://pixabay.com/vectors/noise-pollution-anxiety-noise-3583915/>

Sound Frequency : <https://pixabay.com/illustrations/sound-wave-noise-frequency-waveform-3870974/>

Students : <https://www.youtube.com/watch?v=MdQXhoVhIAk>

Teacher and students : <https://www.youtube.com/watch?v=MdQXhoVhIAk>

Time to teach	Value Type	Value Sub Type	Value Attribute
5 Minutes	Love		Quotation

13. MS_ Noise Pollution

- The sounds that are pleasing /pleasant to our ears such as the sound produced by musical instruments are called as musical sounds.

Example: Sound produced from flute



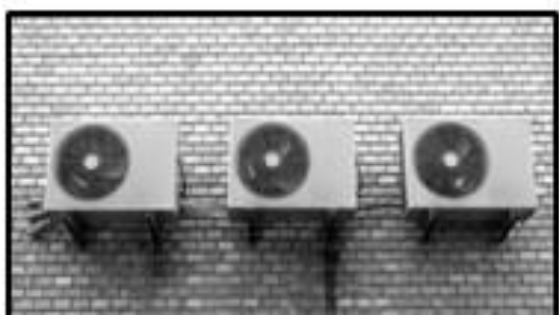
- **Noise:** Unpleasant, unwanted and loud sound is called as noise.



- The presence of excessive or unwanted and unpleasant sound in the environment that causes discomfort is called as noise pollution.

Sources of Noise Pollution:

- The blowing horn and the sound of the engines of motor vehicles, the machines in factories and industries, bursting of crackers, jarring sound from loud speakers and even home appliances like mixer grinder, television, and air conditioners cause noise pollution.

Motor Vehicles**Machines In Factories****Bursting Of Crackers****Loud Speakers****Air conditioner**

Harmful Effects of Noise Pollution:

- Noise pollution causes hypertension, headache and anxiety.



- Many other health related problems such as lack of sleep are also caused due to noise pollution.



- Exposure to loud sound can result in temporary or even permanent impairment of hearing.



List of the images used

Flute:SA:<http://www.clker.com/clipart-599394.html>

Noise-speaker: SA: <http://www.clker.com/clipart-9948.html>

Noise2:SA: <http://www.clker.com/clipart-727759.html>

Motor-vehicles:SA: <https://pixabay.com/en/traffic-vehicles-jam-highway-auto-2158790/>

Machines:SA: <https://pixabay.com/en/industry-machines-factory-operation-2118987/>

Bursting-crackers:SA: <https://www.publicdomainpictures.net/en/view-image.php?image=10166&picture=firecrackers>

Loud-speakers:SA: <https://pixabay.com/en/megaphone-loud-hailer-loud-hailer-1381104/>

Air-conditioner:SA: <https://pixabay.com/en/wall-fan-air-conditioning-box-1801952>

Headache:SA: <https://pixabay.com/en/headache-image-man-stress-1557802/>

Anxiety:SA: <https://pixabay.com/en/headache-image-man-stress-1557799/>

Lack-of-sleep:SA: https://commons.wikimedia.org/wiki/File:Smiley_green_alien_deep_sleep.svg - Public Domain CC0

No-hearing:SA: <http://www.clker.com/clipart-audiogram-hearing-no-response-no-border.html>

Time to teach	Asset Type	Theme	Sub Theme
8 Minutes	Main Script	Sound	Noise pollution (effects causes)

14. DD_ Measures to control Noise Pollution

1) Television, radios and other musical systems should be played at low volumes.



2) Silencing devices must be fitted in air craft engines, motor vehicles, industrial machines and in home appliances such as in air conditioners.



3) The factories and industries causing noise pollution should be set up far away from the residential areas.



4) Trees absorb sound. So, trees must be planted along the road and around buildings to reduce noise pollution



5) Restrict the usage of the horn in automobiles to only when necessary.



List of the images used

Watching-TV:SA: <https://www.publicdomainpictures.net/en/view-image.php?image=267443&picture=watching-tv>

Air conditioner: SA: <https://pixabay.com/en/air-conditioner-global-warming-1185041/>

Air-craft: SA: <https://www.publicdomainpictures.net/en/view-image.php?image=88585&picture=jet-aircraft>

Factory: SA: <https://pixabay.com/en/refinery-oil-refinery-oil-industry-2251247/>

Highways :SA: <https://pixabay.com/en/highway-street-road-ah--47-332361/>

House: SA: <https://pixabay.com/en/house-green-plant-apartment-468082/>

No-horn: SA: https://commons.wikimedia.org/wiki/File:Road_Sign_No_Horn.jpg

Time to teach	Asset Type	Theme	Sub Theme
5 Minutes	Day-to-day Relevance	Sound	Measures to reduce noise

11. QA_ Questions on sound and its properties

I. Choose the correct answer for the following:

- 1) Sounds whose frequency is less than 20Hz are called as _____ sounds.
a) Ultrasonic b) Infrasonic c) Audible d) None
- 2) _____ are the units of frequency.
a) Hertz b) Seconds c) Metres d) None
- 3) _____ Sounds are called as musical sounds
a) Unpleasant b) Pleasant c) Unwanted d) Loud
- 4) Sound travels through _____
a) Solid b) Liquid c) Gas d) All of them

Answers: 1. b 2. a 3. b 4. d

II. Answer the following questions:

- 1) Classify the following sounds as music or noise.
a) Sound produced by the veena
b) Running of the mixer in the kitchen
c) Barking of dogs

Veena



Mixer



Barking of Dog



Answer:

- a) Sound produced by the veena is music.
- b) Sound produced by the running of the mixer in the kitchen is noise.
- c) Sound produced by the barking of dogs is noise.

2) Name the vibrating part of the following musical instruments

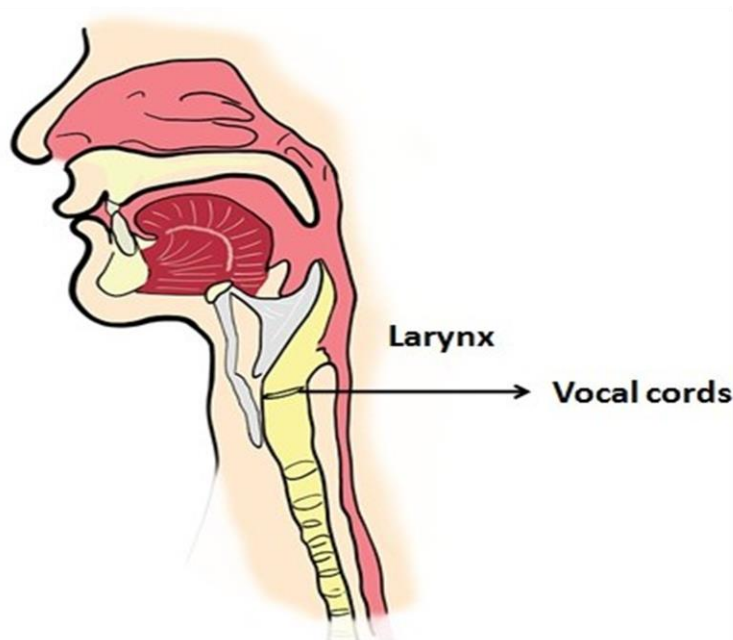
a) Sitar b) Flute c) Tabla

Answer : a) Stretched string of the sitar b) Air columns of the flute c) Stretched membrane/skin of the tabla

3) How do human beings produce sound?

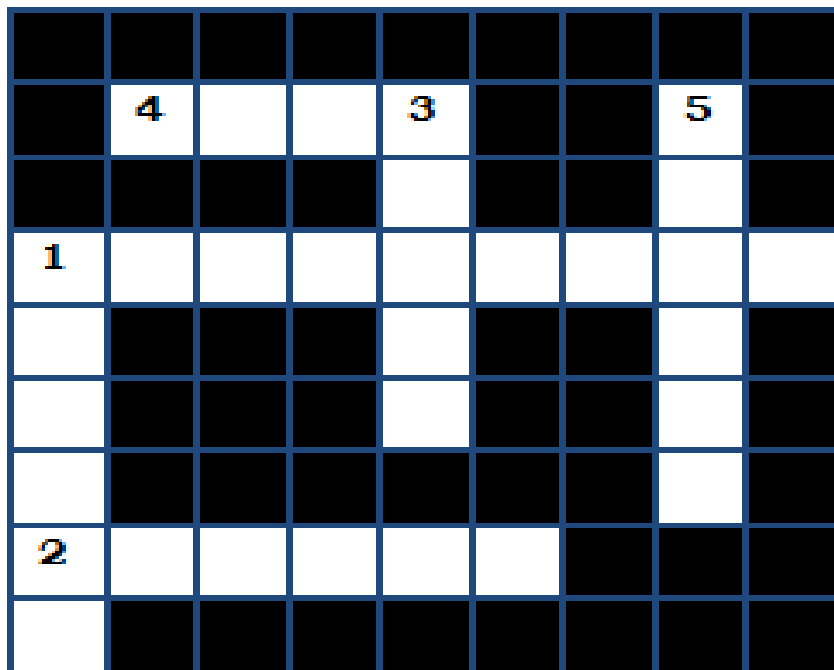
Answer:

- Sound is produced by the voice box or “Larynx” in human beings.
- The voice box has two vocal cords.
- Two vocal cords are stretched across the voice box in a way that there is a narrow slit between them for the passage of air.
- When we speak, the air is forced /pushed by the lungs through this slit, and then, the vocal cords vibrate, thus producing sound.

**4) Write any three measures to control noise pollution.**

Suggested Answer:

1. Television, radios and other musical systems should be played at low volumes.
2. Factories and industries causing noise pollution should be set up far away from the residential areas.
3. Drivers of vehicles should not use the horn unnecessarily.

III. Solve the following puzzle**Across:**

1. The number of oscillations made by the vibrating body per second is called as the _____. (9)
2. Sound is produced by the _____ in human beings. (6)
4. _____ can hear the infrasonic sounds. (4)

Down:

1. When the amplitude is small, _____ sound is produced. (6)
3. _____ is produced due to vibration. (5)
5. Sound cannot travel through _____ (6)

Solution:

	⁴ D	O	G	³ S			⁵ V	
				O			A	
¹ F	R	E	Q	U	E	N	C	Y
E				N			U	
E				D			U	
B							M	
² L	A	R	Y	N	X			
E								

IV. Match the following

<u>Group A</u>	<u>Group B</u>
1. Noise Pollution	a. Time Period
2. Maximum Displacement	b. Hypertension
3. Audible Sounds	c. Amplitude
4. Inverse of Frequency	d. 20 Hz to 20,000Hz

Answer: 1- b, 2-c, 3-d, 4 –a

List of the images used

Mixer:SA: <https://pixabay.com/en/blender-mixer-juicer-food-processor-10934/>

Veena:SG: https://www.srisathyaivaividyaiahini.org/images/joomgallery/details/recent_collection_242/v_20141019_1638442507.jpg

Barking-dog:SA: <https://pixabay.com/en/german-shepherd-dog-barking-guard-166972/>

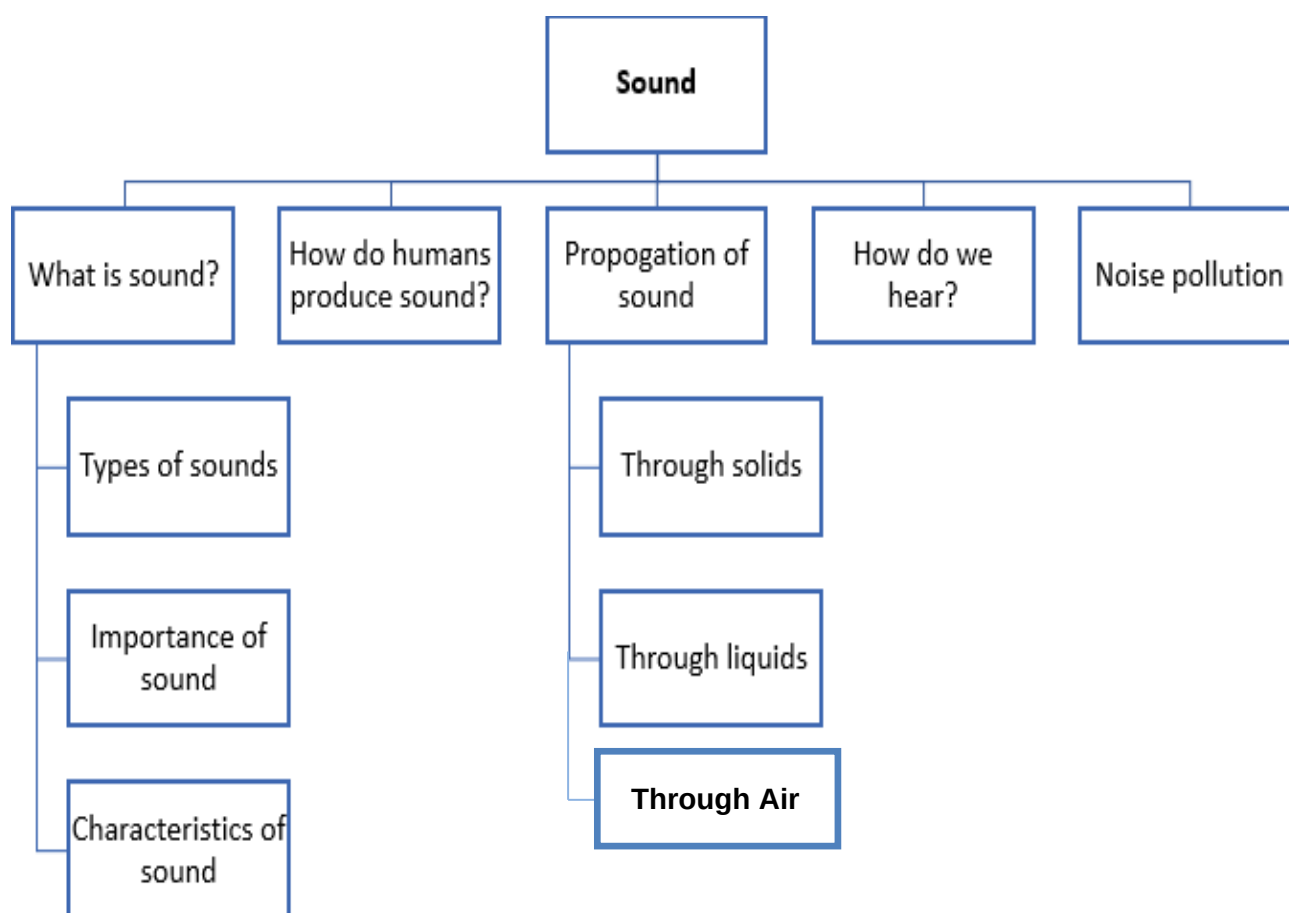
Larynx:SA: <https://pixabay.com/en/the-larynx-the-pharynx-anatomy-2381980/>

Puzzle:OC:pavani.sathyasai@gmail.com

Table:OC:pavani.sathyasai@gmail.com

Time to teach	Asset Type	Theme	Sub Theme
10 Minutes	Assessments	Sound	Sound requires a medium to travel, Noise pollution (causes and effect) Noise and music, Characteristics of sound, audible sound, inaudible sounds

16. MS_Summary_Sound



Time to teach	Asset Type	Theme	Sub Theme
5 Minutes	Main Script	Sound	Sound requires a medium to travel, Noise pollution (causes and effect) Noise and music, Characteristics of sound, audible sound, inaudible sounds

Master Lesson Plan

Seven Asset Methodology for MLP	
What is the purpose of this Master lesson Plan?	This Master Lesson Plan (MLP) prepared by Sri Sathya Sai Vidya Vahini, covers the entire chapter for the given board. The chapter given in the textbook is broken down into smaller modules known as assets. One of seven teaching methods is applied to each asset. Several different assets together complete the entire chapter. Each asset is supported by a teaching aid such as animated presentation, audio, video, worksheet; that the teacher can use in the class, while teaching that module. The MLP is for the teacher's preparation and the teaching aids are for use in the classroom.
How to use it?	You can prepare for your class with this MLP by following 3 simple steps: 1. Read your textbook; 2. Go through the information given in the assets (document & multimedia); 3. Prepare your teaching notes. Great! Now you are ready to transact the chapter.
Duration	Kindly note the duration given for each asset. Due care has been taken in planning the assets, to ensure the chapter is completed within the time specified by the Board. Note: Preparation time is not included in the asset duration. The teaching time depends on the duration of the teaching aids and is not impacted by the length of the MLP.
What is a 'Main Script' (MS) Asset?	The Main Script asset is there for explaining the main concepts of the chapter clearly. The information given in the textbook is simplified, organised and structured to give more clarity. Additionally, you may find a video or mnemonics or a graphic organiser to deepen the understanding of the concept.
How to teach using the MS asset?	Please use the blackboard, slides and interaction to develop the concept.
What is an 'Inquisitive Questions' (IQ) asset?	The Inquisitive Questions asset uses questions to promote higher order thinking like the n^{th} why, what-if, new perspectives, cause-effect, and others, creating curiosity.
How to teach using the IQ asset?	You may use the questions to connect with the students, encourage exploration to engage them in the learning process. You may allow multiple responses and instead of rejecting any of the responses, ask why, before revealing the suggested answer or hints.
What is a 'Day to day Relevance' (DD) Asset?	The Day to Day Relevance asset helps students understand the practical relevance of every topic, making them eager participants in the classroom. If students connect the concepts to their environment, they would learn meaningfully without dislike or simply memorizing for exams.

How to teach using the DD asset?	You may use the asset by asking questions about their experience and use it to establish why they are learning the topic. If necessary you may substitute with a recent or local example.
What is an 'Interesting Aside' (IA) asset?	The Interesting Aside asset uses attention grabbing titbits or anecdotes to bring joy and satisfy the child's hunger to know more. This is a quick/short asset intended to bring attention back to the main concept being taught.
How to teach using the IA asset?	You may use this asset to give a piece of interesting information relevant to the topic, without prolonged explanation/discussion. You may suggest appropriate books for further reading.
What is a 'Suggested Activity' (SA) Asset?	The Suggested Activity asset provides a detailed step by step procedure for the teacher to conduct a hands-on activity. This promotes Activity Based Learning.
How to teach using the SA asset?	You may use this asset to energise your students to learn by doing simple, fun-filled activities based on the topic. The asset includes - preparation, activity, and follow-up. You may engage the students in the preparation and follow-up stages to develop collaboration and responsibility. You could try it once, yourself, before the actual delivery to be more comfortable with it. Note: The duration mentioned in the asset is usually for the activity part only.
What is a 'Value Content' (VC) Asset?	The Value Content asset integrates Universal Human Values (such as empathy, inclusivity, respect for nature that translates into responsible behaviour) seamlessly into the curriculum, as the "End of education is character".
How to teach using the VC asset?	You may use this asset to engage with the students to bring out their innate values and connect with the intrinsic values in the topic/concept. The asset includes pointers on the specific pedagogical technique followed.
What is a 'Questions to Assess' (QA) asset?	The Questions to Assess asset uses an interactive approach to check learning of different types of learners, and provides feedback to the teacher for appropriate action. The questions cater to all the levels of Bloom's Taxonomy. Questions from 'Apply' level and above enable students to reflect on their learning.
How to teach using the QA asset?	You may go through the slides to understand its flow and know when to click for the answer (slides include suggested answers). While presenting in the class, you may display the question and encourage multiple responses, before revealing the answer. In some cases, this asset may include extra questions/worksheet that can be given as homework.