ODM EDUCATIONAL GROUP
Changing your Tomorrow

SOUND

PHYSICS

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Noise and noise pollution

- Sounds that are loud and unnecessary are called **noise**
- The presence of loud, unwanted and disturbing sound in our environment is called noise pollution.
- **Major sources of noise pollution:**
- The motor vehicles running on the road produce noise pollution by blowing horn and sound of their engines.
- The bursting of crackers on various social and religious occasions produce noise pollution.
- The various machine in factories make loud sounds and cause noise pollution.
- The take off , landing, and flying of aeroplane produce noise pollution.

Noise and noise pollution

- The playing of loud speakers and bands at marriage and other functions.
- The construction of buildings produce a lot of noise.
- Loud playing of radio, speaker systems and televisions produce noise pollution

Harms of noise pollution

- 1) loud noise can cause great harm to our ears. Constant loud noise reduces the hearing power of our ears. loud noise can even damaged ears permanently and cause deafness.
- 2)Loud noise can cause a person to lose concentration in his work or studies.
- 3) loud noise can cause an ailment called Hypertension.
- 4) loud noise can cause irritation and headache.
- 5) loud noise during night time disturbs our sleep. Continued lack of sleep is bad for health.

Measures to control noise pollution

- 1) We should not play radio ,stereo systems and televisions too loudly.
- 2) The horns of motor vehicles should not be gone unnecessarily
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- 3) The bursting of crackers should be avoided.
- 4) The noise making factory and airports should be shifted away from the residential area of the city.
- 5)loud speakers should be played at low volume during marriages and other social function.
- 6) Trees should be planted along the roads and around building to reduce the noise pollution from the roads.

Musical sound and noise

- **:** Musical sounds are produced by vibrations which are regular and periodic. It is pleasant to hear.
- Noise is produced by vibrations which are irregular and non periodic.
- It is un pleasant to hear.

Exercise Questions discussion

- What are vibrations?
- Define the following: 1. Frequency of vibration
- Amplitude of vibration
- Time period
- To increase the loudness of sound by four times, by how much should the amplitude of vibration be changed?
- Give an example to show that light travels faster than sound.

Exercise Questions discussion

- What factors decide the frequency of vibration of a plucked string?
- What factors decide the frequency of vibration of an air column?
- If you hear a fire cracker 2 seconds after it is fired, how far away from it are you? Assume that the speed of sound in air to be 330 m/s.
- Describe the structure and function of ear drum.
- What is noise p[ollution?
- What kind of material can be used in the house to make it more sound proof?

Exercise Questions discussion

- Hots: If you shoot on the Moon, will the sound travel faster or slower than it does on the earth? Why?
- Why does a vibrating simple pendulum not produce any sound?
- Fill in the blanks:
- Sound is produced by _____.
- The vibrations of a simple pendulum are also known as _____.
- Sound waves travel in the form of _____.
- The unit of frequency is the _____.
- The pitch of sound depends on the _____ of vibration.
- If the thickness of a vibrating string is increased, its pitch _____.
- Sound requires a _____ to travel in.
- Most people cannot hear sounds below _____ Hz, these are called _____.
- High frequency sounds that we cannot hear are called _____.

- Choose the odd one out:
- Table,violin,sarod,veena.
- Mridangam,jaltarang,shehnai,table.
- Harmonium,flute,nadaswaram,violin.
- Pinna,ear canal,semi circular canals, ear drum.

THANKING YOU

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