UNITED ARAB EMIRATES
MINISTRY OF EDUCATION

الإمارات العربية المتحدة
وزارة التربية والتعليم

Khalifa City A School - Cycle 1

مدرسة مدينة خليفة أ / حلقة أولى

SCIENCE

CHAPTER 7- ENERGY

LESSON 2- SOUND

PART 1

Created by- Nisha Tanwar

WHAT IS SOUND?

- Back and forth motion is called vibrations.
- Vibrations create sound.
- All sound begins with vibration.

WATCH VIDEO ABOUT VIBRATIONS

WATCH VIDEO ABOUT SOUND

A sound wave is a wave that transfers sound through matter. Sound waves spread outward from a vibration in all directions. Unlike an ocean wave, a sound wave does not move up and down.

First, energy from a vibration causes air particles to move. Then, air particles bump into one another. Some air particles are crowded together. Some are spaced apart. The air particles move back and forth. However, they do not change their overall position as they transfer energy.

HOW DOES SOUND TRAVEL?

Sound can travel through different medium

- ❖ SOLIDS
- ❖ LIQUIDS
- ❖ GAS

SOUND DOES NOT TRAVEL AT SAME SPEED

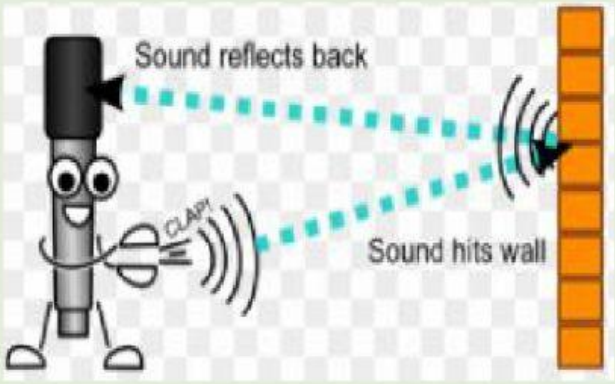
SOLIDS	LIQUIDS	GASES
Sound travels the fastest in solids	Sound travels faster than gases in liquids	Sound travels the slowest in gases
		

IMPORTANT

- ❖ Sound cannot travel through a vacuum.
- ❖ SPACE IS VACCUM.
- ❖ Astronauts cannot talk in space because there is no medium such as air for sound to travel.

ECHOES

- An echo is a specific, reflected sound
- When sound reflects after hitting hard surface, it creates an echo.



- DOLPHINS use echolocation to find food in the ocean.

WATCH VIDEO ABOUT ECHOLOCATION

USES OF ECHO

A SONAR device measures the time difference between the sound and its echo

SONAR

Sound Navigation And Ranging

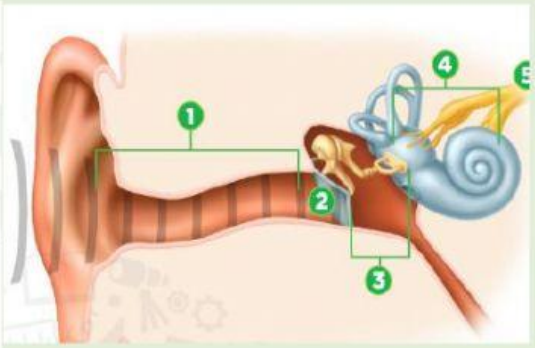
It is a technology that uses sound waves to detect underwater objects.

Sailors use it to measure how deep the water is. Fishers use sonar to find schools of fish. Scientists use sonar to map the ocean floor. Others use it to search for shipwrecks or hazards.

HOW THE EAR WORKS?

When your friend speaks to you, sound waves travel through the air. What happens when those waves reach your ear?

First, the waves carry sound energy to tiny organs in the ear. The energy makes these organs vibrate. The diagram shows how the sounds move from the ear to the brain. All these steps happen in an instant!



WATCH VIDEO ABOUT HUMAN EAR

IMPORTANT LINKS FOR PRACTICE

- **Click** here to practice more about sound waves.
- **Click** here to practice more about human ear.

QUESTIONS FROM BOOK

1. What is the best way for a drummer to increase the loudness of her drumming?

A Hit a smaller drum.

B Hit a larger drum.

C Hit the drum with less energy.

D Hit the drum with more energy.

2. When sound is reflected, it creates an

3. Speed of sound is the fastest in

4. Speed of sound is the slowest in

5. Back and forth motion of air particles create

6. Sound cannot travel in

7. Does sound travel faster in seawater or air?

8. When you pluck a string, it vibrates and makes a sound. How can you stop the sound?

TYPE YOUR ANSWER

9. Why can't sound travel through outer space?

TYPE YOUR ANSWER