

SOUND



We Are Learning About:

- **What is sound?**

Sound Waves, How does sound travel?

- **How the Ear Works –**

How do sounds differ?

- **What is sonar?**

Using Echoes

This is what I need you to know: I CAN

- Explain what sound is
- Explain what is a vibration
- Explain what a sound wave is

What is Sound?

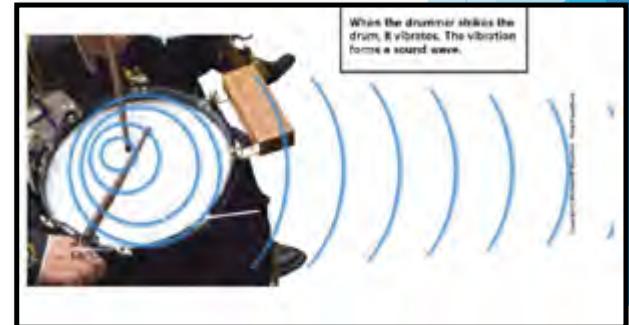
All sounds begin with a vibration.

Sound is made up of vibrations, or sound waves, that we can hear.



What is a VIBRATION?

Pluck an elastic. That sound that you hear is a vibration. We are pulling it back and forth.



What are Sound Waves?

Sound waves are waves that transfer sound through matter



EXAMPLE: a ringing alarm clock

The alarm goes off the bell starts ringing. You hear the vibrations of sound coming from clock



This is what I need you to know: I CAN

- Explain how sound travels
- Explain what an echo is
- Explain how the ear works
- Explain what sonar is

How does sound travel?

Sound travels through the air.
Sound can travel through solids, liquids and gases

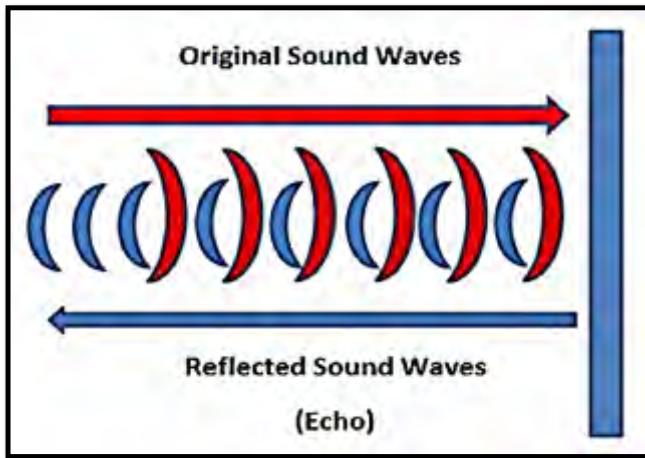


How Does Sound Travel?
by Carlos.

Sound vibrations travel as waves. They can travel through air, water, wood, glass, or other material. A sound vibration spreads out in all directions from its source, like ripples in a pond.

What is an echo?

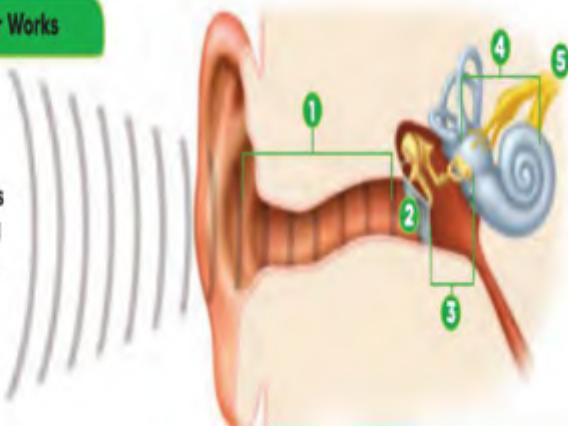
An echo is a specific reflected sound.
Dolphins use echo's to locate objects



How the ear works

How the Ear Works

What happens when a sound wave reaches your ear?



- 1 **outer ear** The outer ear collects sound waves. Like a funnel, it directs the waves into the ear.
- 2 **eardrum** Sound waves make the eardrum vibrate like the head of a drum.
- 3 **middle ear** The vibrations are picked up by three tiny bones in the middle ear. The bones are the hammer, anvil, and stirrup.
- 4 **inner ear** The stirrup passes the vibrations to a coiled tube in the inner ear. The tube is filled with fluid and lined with tiny hair cells.
- 5 **nerve to brain** The moving hair cells signal a nerve in the ear. The nerve carries these signals to the brain. The brain interprets the signals as sound.

How do sounds differ?

Wavelength- The distance between from one area of particles to the next

Frequency- the number of vibrations a sound makes in a given time- How many vibration in one minute?

Pitch- How high or low a sound is

Amplitude- The amount of energy in a sound

Volume- how loud or soft a sound is

What is Sonar?

- Sonar

Sonar is a machine that uses underwater sound waves to find other objects in the sea.



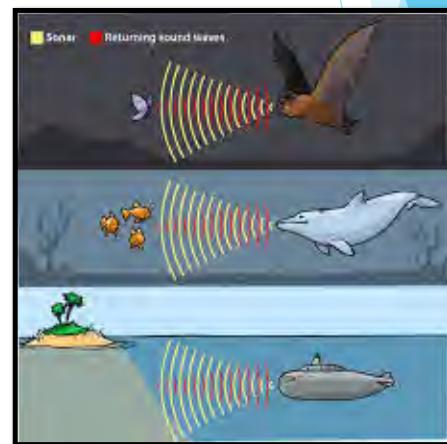
How do we use sonar?

- Sonar

Sailors use sonar to measure how deep the water is

Fishermen use sonar to find fish

Scientists use sonar to map the ocean floor



LET'S REVIEW:

What is sound?

Sound is made up of vibrations, or sound waves, that we can hear.

What are Sound Waves?

Sound waves are waves that transfer sound through matter

How does sound travel?

Sound can travel through air, solids, liquids and gases

- How do sounds differ?

Wavelength- The distance between from one area of particles to the next

Frequency- the number of vibrations a sound makes in a given time- How many vibrations in one minute?

Pitch- How high or low a sound is

Amplitude- The amount of energy in a sound

Volume- how loud or soft a sound is

- What is sonar?

Sonar is a machine that uses underwater sound waves to find other objects in the sea