

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

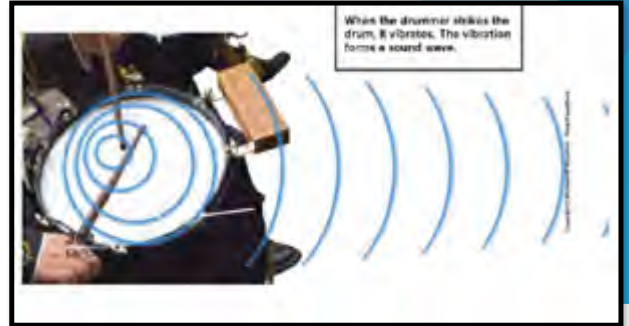
What is Sound?

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



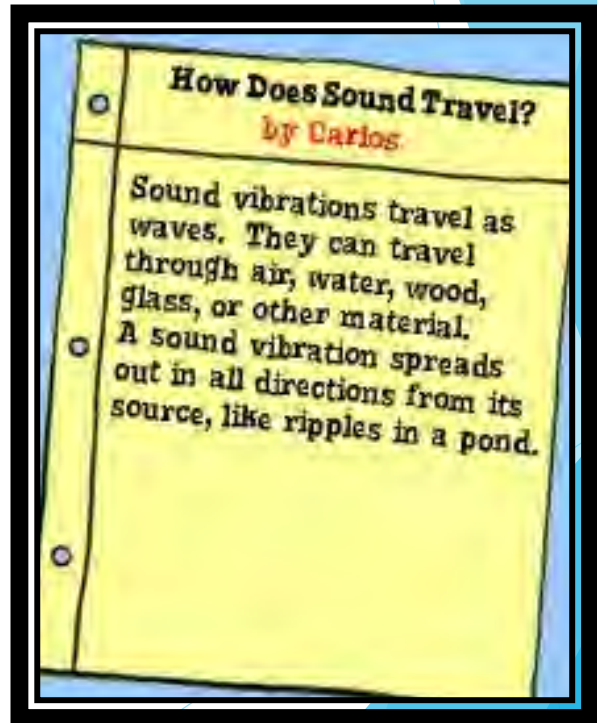
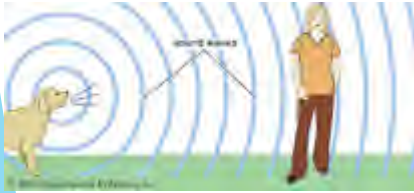
This is what I need you to know:

I CAN

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

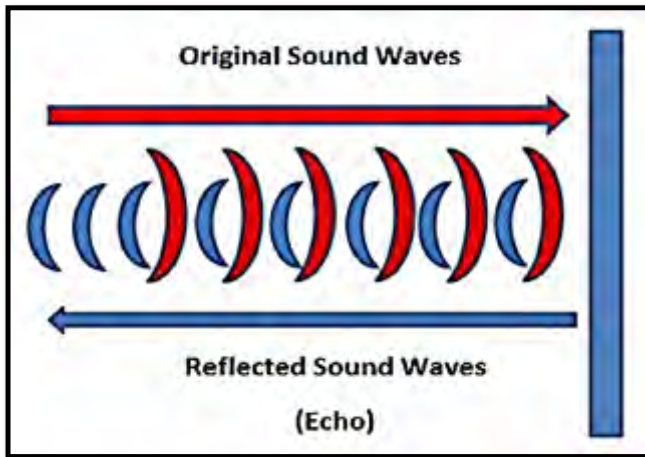
How does sound travel?

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

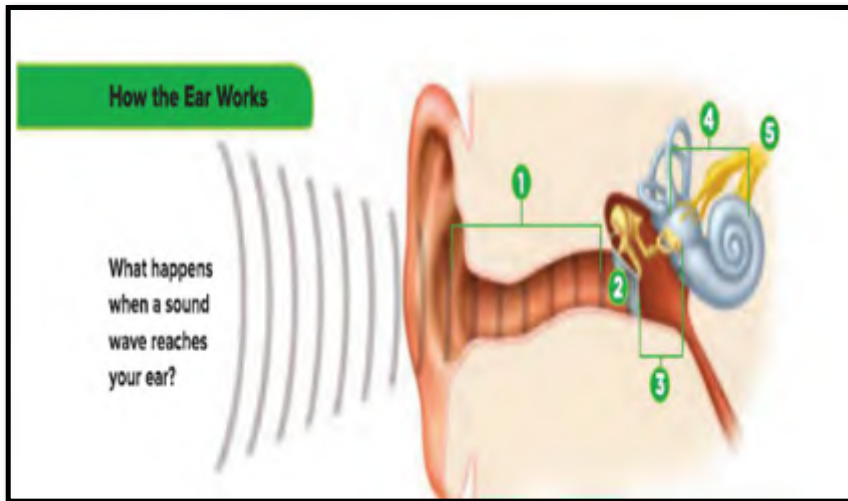


What is an echo?

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



How the ear works



- 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

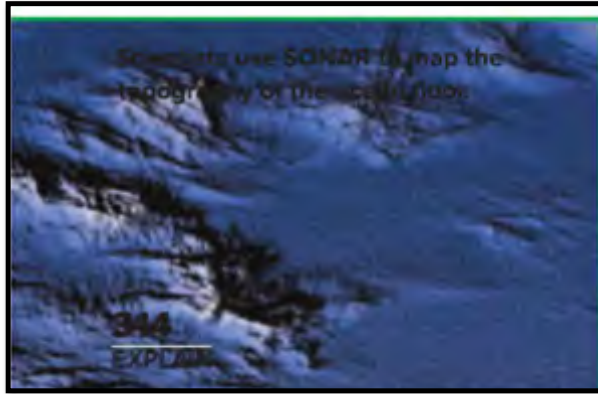
Amplitude- The amount of energy in a sound

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.



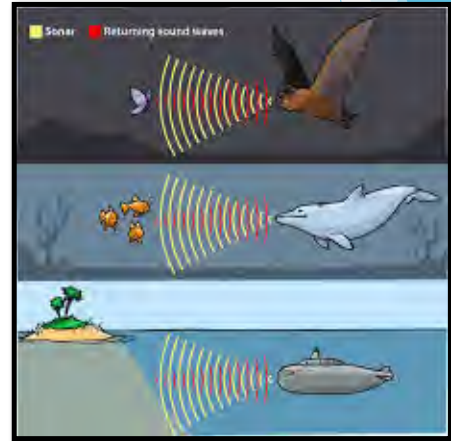
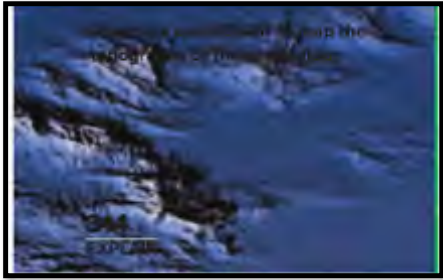
How do we use sonar?

- 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:

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