

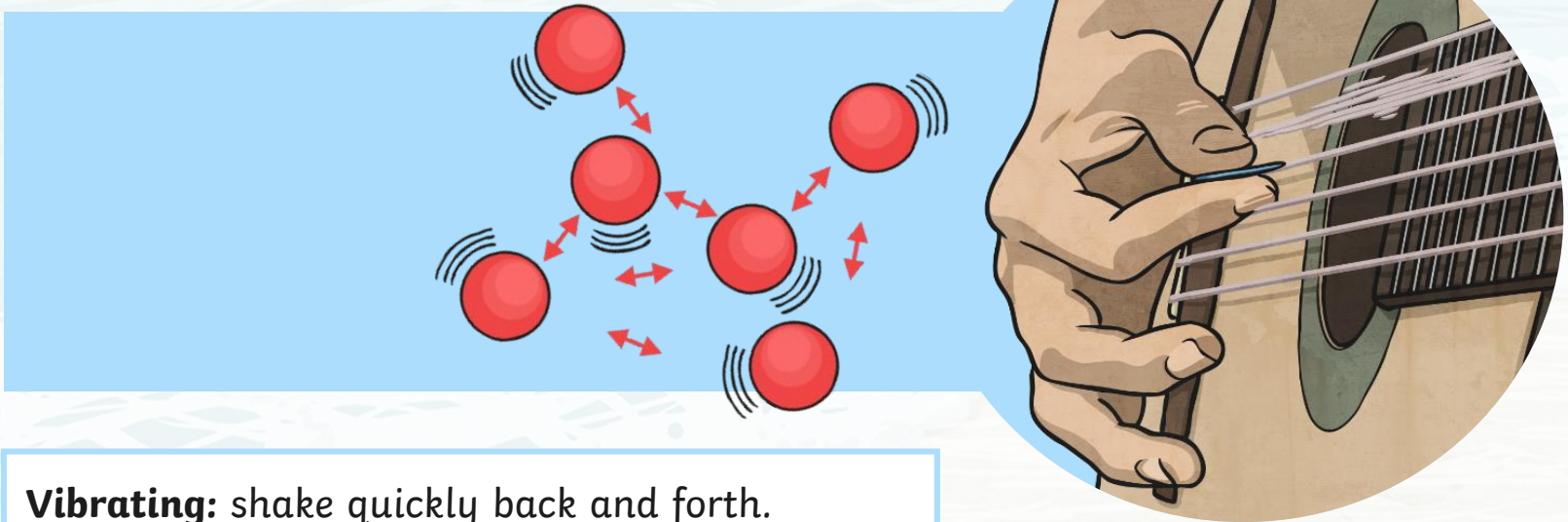
How Sound is Made



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How Sound is Made

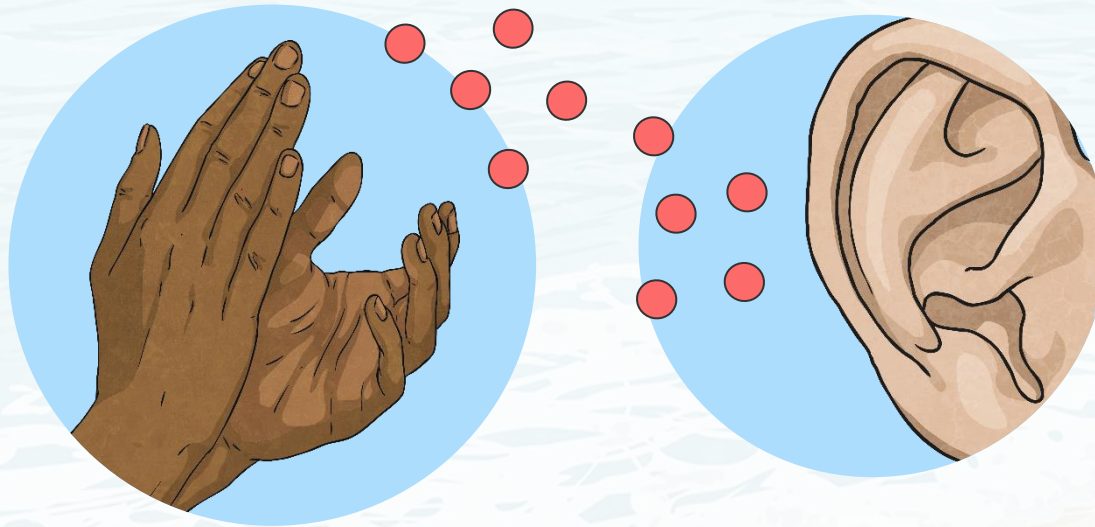
- Like light, sound travels through the air in waves.
- Sound is made by air molecules **vibrating**.
- When you clap your hands, the air around your hands shakes. This is the air molecules vibrating.



Vibrating: shake quickly back and forth.

How Sound is Made

The vibration of the air molecules around the hands shake the molecules next to them and so on, until the air molecules in the ear are vibrating.



Have you ever felt a speaker when the sound is on?
It vibrates.



How Sound is Made

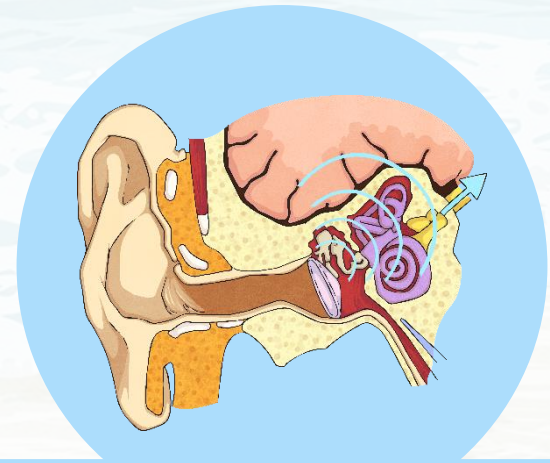


Molecules Vibrating

When air molecules inside the ear vibrate, they shake tiny hairs on the insides of the ears.

The hairs are connected to nerves under the skin.

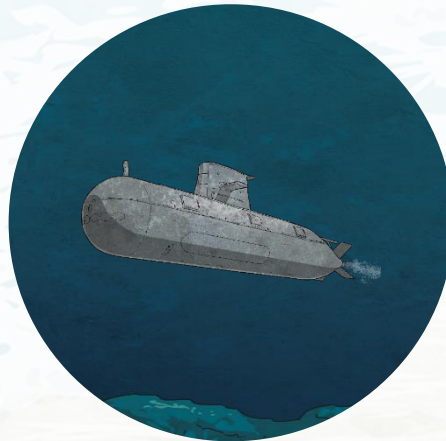
These nerves send messages to your brain to tell you that you heard a noise.



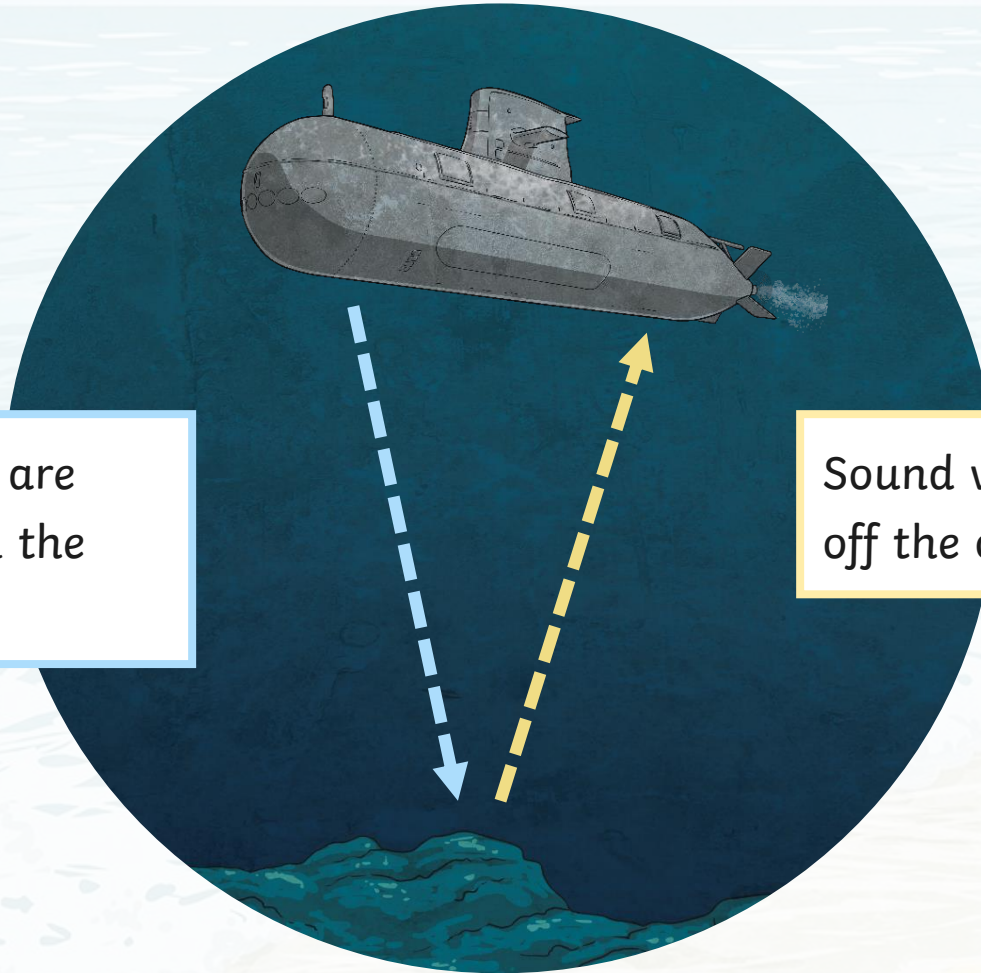
Communicating with the brain

How Sound is Made

- Sound needs molecules to move. It is impossible for sound to travel in space.
- Sound doesn't have to move through air. It can travel through water or metal.
- In fact, sound travels faster through water and solids than it does through air.



How Sound is Made



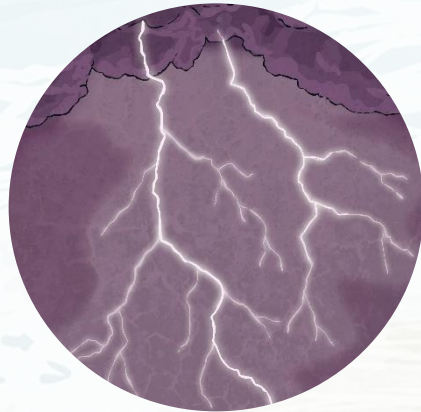
Sound waves are sent out from the submarine.

Sound waves bounce off the objects.

How Sound is Made

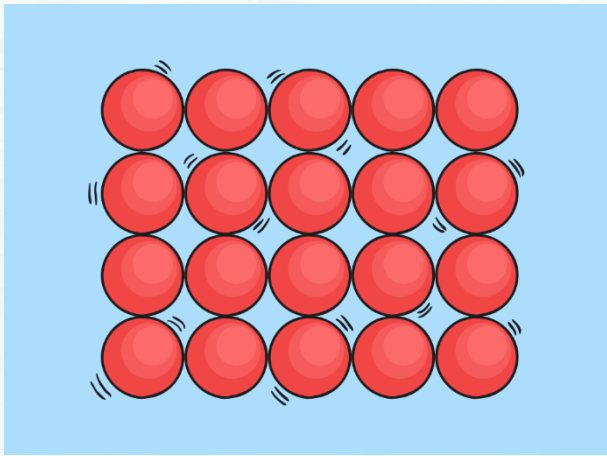
- Sound travels much slower than light, whether in air or in water.
- You often hear things after you see them, for example you see the lightning before you hear the thunder.

Light travels at 186,000 miles per second.
Sound travels at 770 miles per hour.

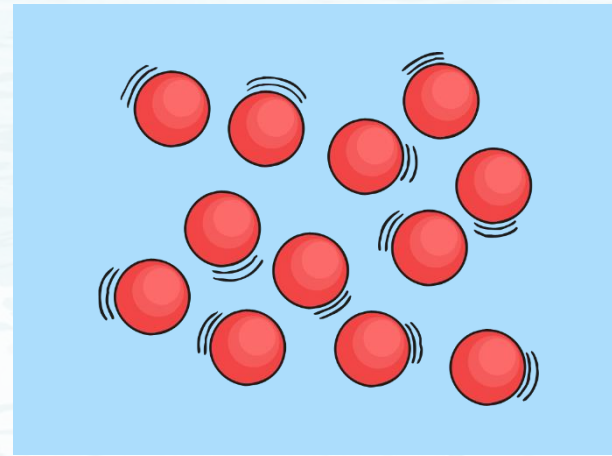


How Sound is Made

Why do you think sound travels faster through solids and liquids than gases?

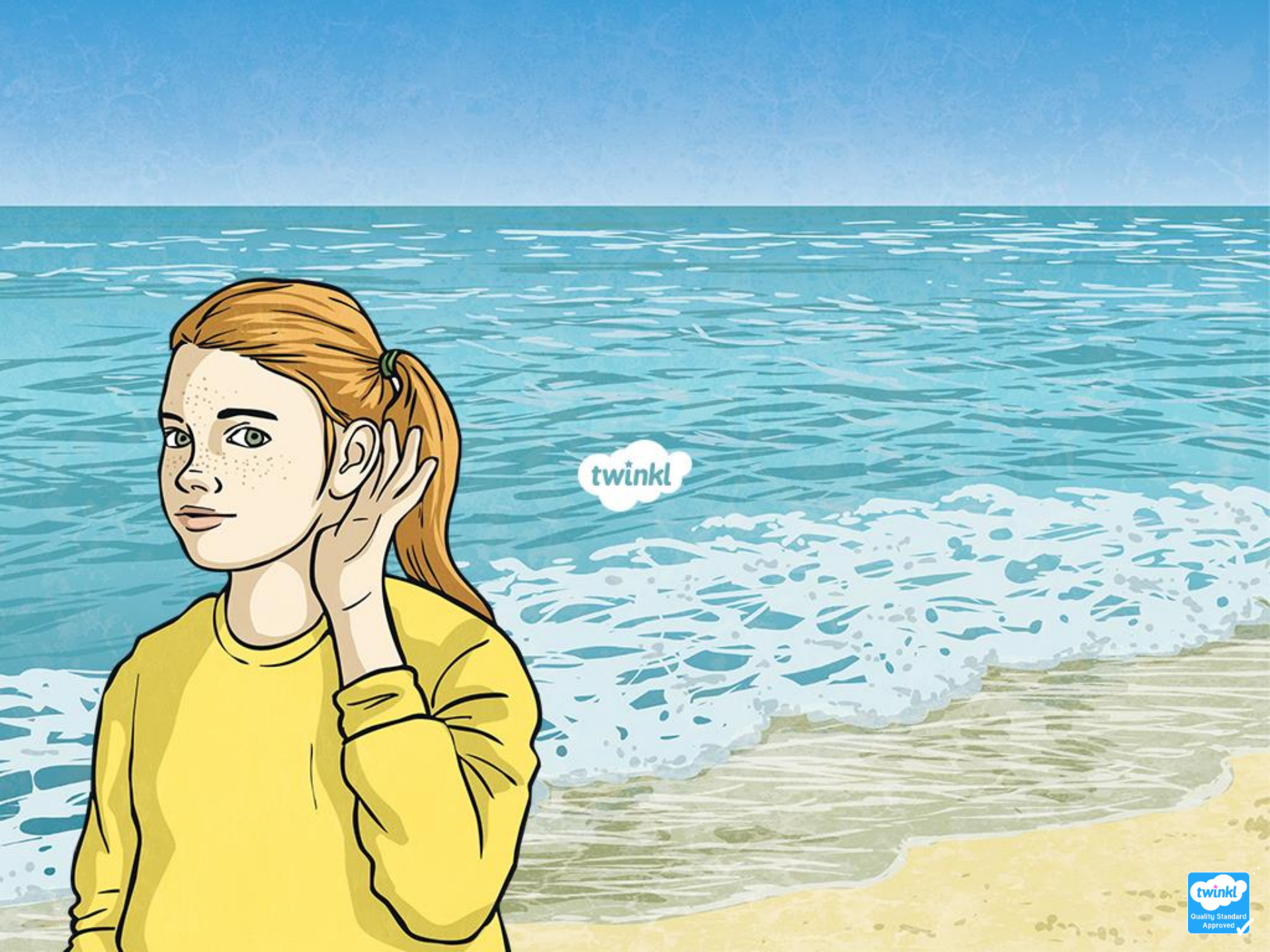


Solid



Liquid

Hint: think about how close the molecules are to each other.



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