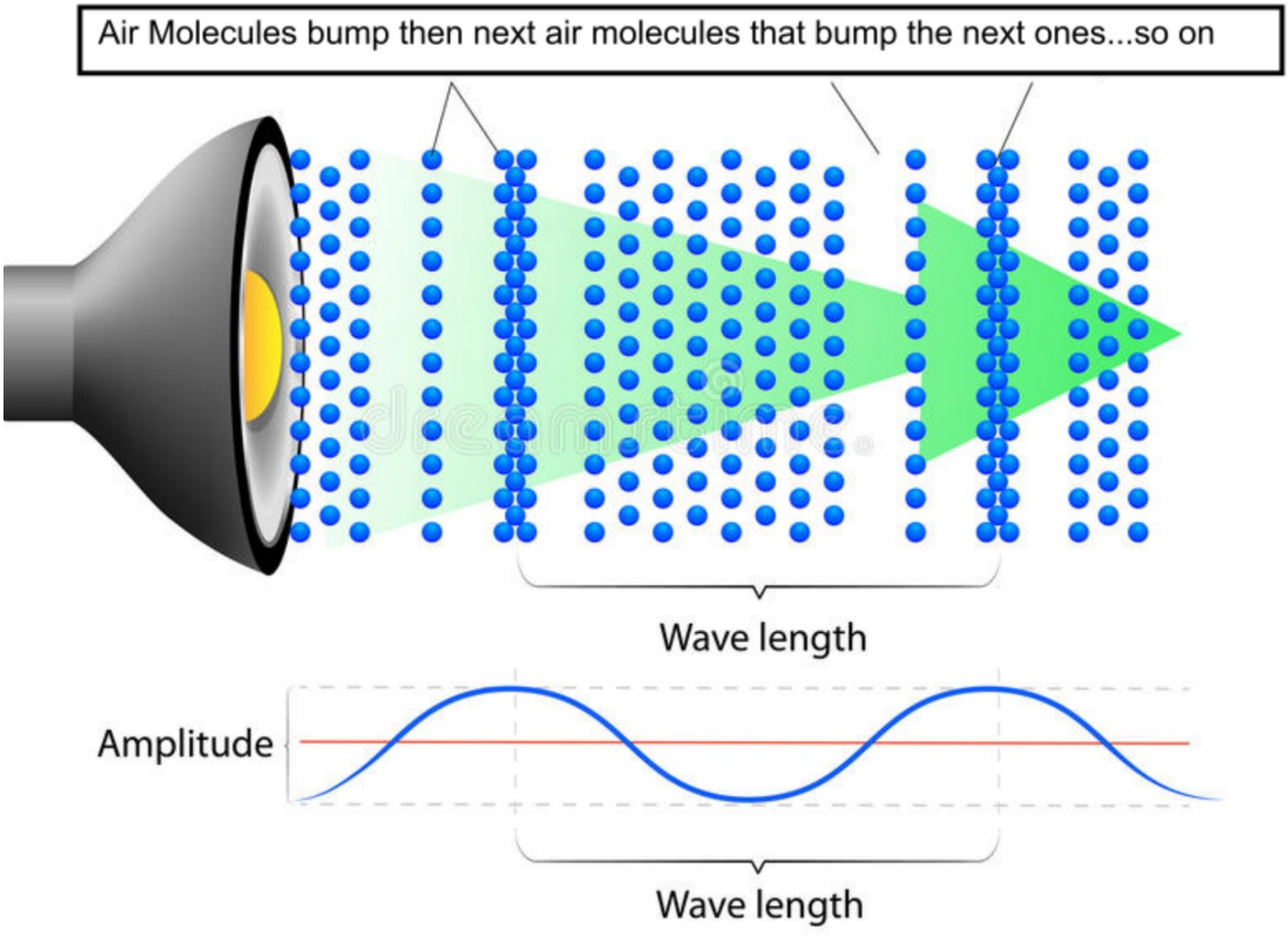
Sound is a transfer of energy from a vibrating objects that travel through the air or other medium and can be heard when they reach a person's or animal's ear:

The vibrations are called sound waves.

When an object vibrates (moves back and forth) it causes the air particles all around it to vibrate too. These particles push the next particles and they start to move in a wave like motion, they push the next particles and they start to move in a wave motion....and it keeps going until the sound runs out of energy and then the vibration stops.

When you are close enough to the sounds the air inside your ears start to vibrate and you hear the sound.

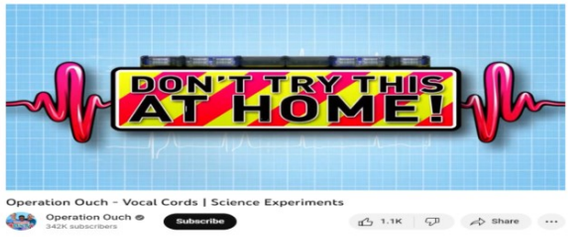
SOUND WAVES


Air Molecules bump then next air molecules that bump the next ones...so on
Wave length
Amplitude
Wave length

Overall

Why do we hear sound?

Because particles vibrate



3 min

How we speak

We have vocal cords. When we breath in, the vocal cords open to let air into our lungs. When we want to speak, we breath out and our vocal cords close. The air that is trying to go past the cords makes the cords vibrate, which makes sound.

Wave Machine

Wave Machine Demonstration (youtube.com)

WAVE Machine

Materials you will need:

Duct Tape Ruler Metre Stick
Wooden Skewers Sharpie Marker
Ju-Jubes Candy (gummy bears/gum drops type candy) 2 per wooden skewer

Exploration:

1. Lay a piece of duct tape down (however long you want to make your wave machine ~ approximately 2-3 metres , sticky side up.
2. Draw a line all the way down the middle of the duct tape using a permanent marker with the metre stick.
3. Mark the line on the duct tape at every 5 cm.
4. Measure and mark the middle of each wooden skewer with the marker.
5. Align the middles of each skewer to the middle, spaced out marks on the duct tape and stick the skewers onto the duct tape.
6. Stick a ju-jube (or whatever gummy candy you are using) on each end of the skewers as evenly as possible to keep an even weight between the sides.
7. Pick up the 2 ends of the duct tape and hold them stretched tightly to check for an even weight distribution (ju-jubes should be level and balanced along the line). Adjust any ju-jubes that need to be adjusted.
8. Secure the skewers by placing a second strip of duct tape over the first piece to stick the two layers together.
9. Using a bit more duct tape, secure each end of the wave machine to equal height tables (or chairs, between two secure posts/support stands etc)
10. Lift a ju-jube at one end of the machine and release it. Observe the wave pulse.
11. Stop the wave before beginning a new wave.
12. Experiment with lifting the ju-jube higher, try a quick pulse versus a slow pulse. Can you make a larger wave? Can you make a wave that has more waves in a second? What happens to the wave when it gets to the other end?