Year 4 Science

Sound

LO – I can recognise that vibrations from sounds travel through a medium to the ear.

Thinking Time...

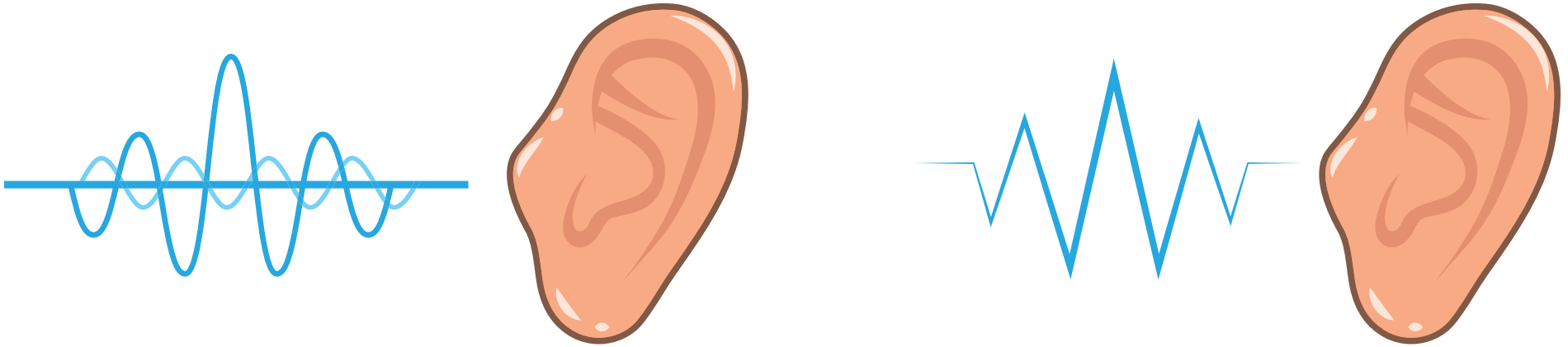
How are sounds made?

Talk to your partner before feeding back to the class.

Sounds

We have learnt that sounds are made when objects **vibrate**. The air makes the air around around vibrate, and the air vibrations enter your ear. You her them as sounds.

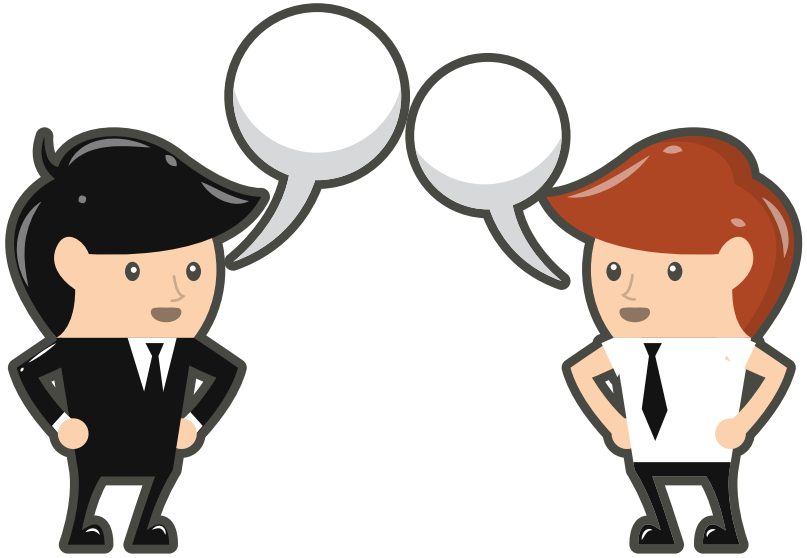
You cannot always see the vibrations, but if something is making a sound, some part of it is always vibrating.



What is the difference between a sound and a noise?

Thinking Time...

What is vibrating to cause the sound in each of these pictures?



Sounds

We can see vibrations when we hit a drum. When we hit it, the drum skin vibrates. This makes the air particles closest to the drum start to vibrate as well.

The vibrations then pass to the next air particle, then the next, then the next. This carries on until the air particles closest to your ear vibrate which passes the vibrations into your ear.

What will happen if I hit the drum harder?

Can vibrations only travel through the air?

When something makes a sound, it vibrates. These vibrations pass through the air around it and eventually go into your ear. This all happens extremely quickly!

The vibrations travel in all different directions so people all around will be able to hear the sound. Vibrations don't travel in straight lines!

Can vibrations only travel through the air?

NO!

Vibrations can travel through solids, liquids and gases. Vibrations actually travel faster through solids than the air.

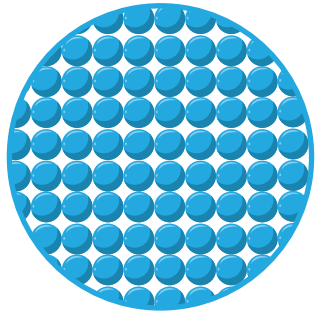
Can you think why vibrations travel faster through solids than gases?

Discuss with your partner.

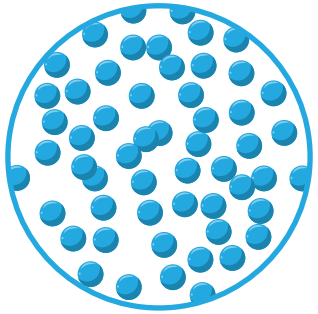
Can vibrations only travel through the air?

In a **solid**, the particles are packed very closely together, meaning the vibrations don't have far to travel to the next particle.

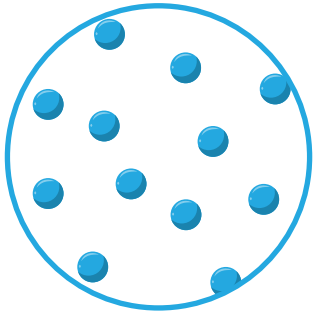
In a **gas**, the particles are loosely packed, meaning the vibrations have further to travel to the next particle.



Solid



Liquid

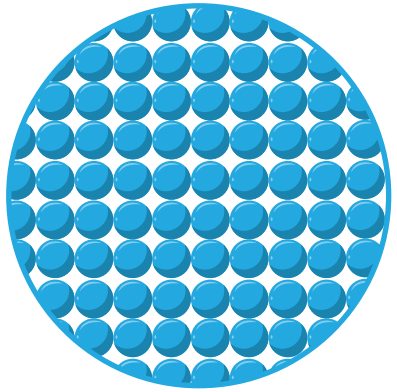


Gas

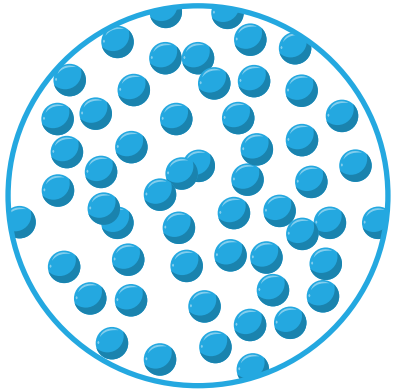
Vibrations

In groups, act out what happens in solids, liquids and gases when sound vibrations travel through them.

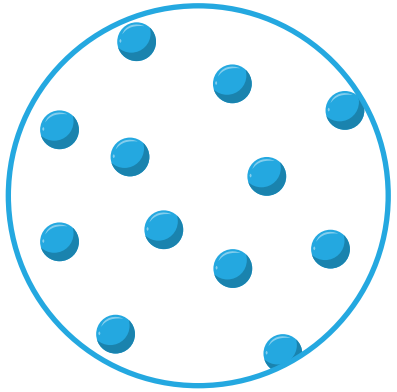
We will then perform some to the class.



Solid



Liquid



Gas

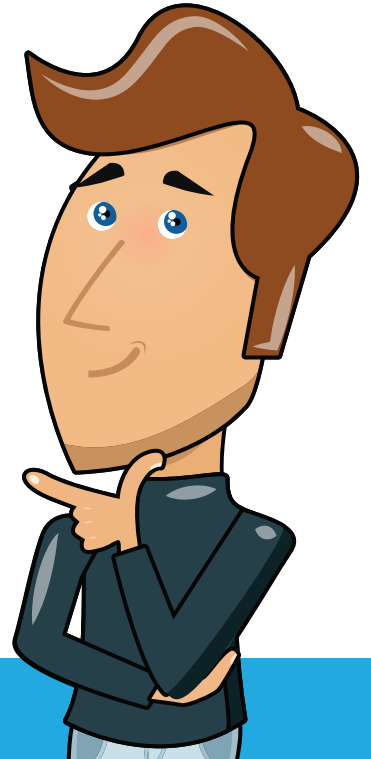
Independent Activity

Now, you are going to draw a comic strip to explain how sounds travel to our ears.

Recap

Do vibrations travel in straight lines?

Does sound travel faster through a solid, liquid or gas? Why?



Recap

Do vibrations travel in straight lines?

No, they travel in all directions.

Does sound travel faster through a solid, liquid or gas? Why?

Solid because the particles are closely packed together so the vibrations don't have as far to go to the next particle.