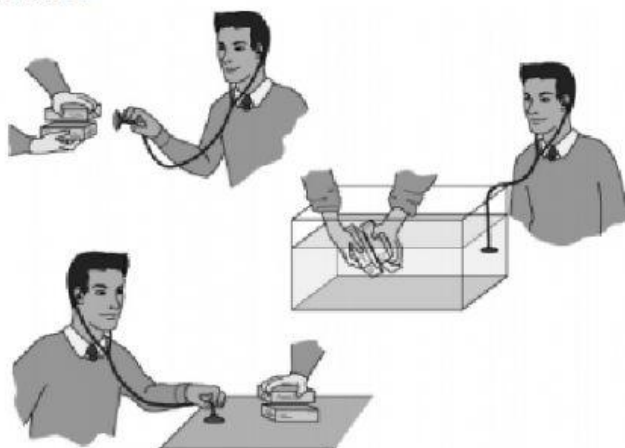


Aim: To investigate how well sounds travel through the different states of matter.

Method



Apparatus

- stethoscope
- 2 pieces of wood
- plastic tank of water

⚠ Make sure that the earpieces in the stethoscope are kept very clean, or use disposable earpieces. Use only soft sounds in this investigation. Loud sounds can damage your ears.

Fill in the gaps in these sentences using words from the box. You do not need all the words.

gas	gases	hear	liquid	solid
solids	stethoscope	water	wood	

I will knock the pieces of _____ together, or knock the wood on the bench. I will use the _____ to listen to the sound. I will record how well I can _____ the sound travelling through different materials. I will investigate how well sound travels through solids, liquids and _____.

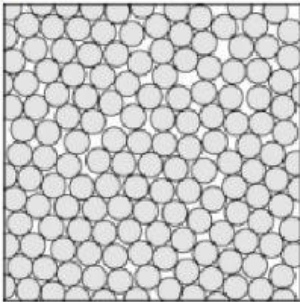
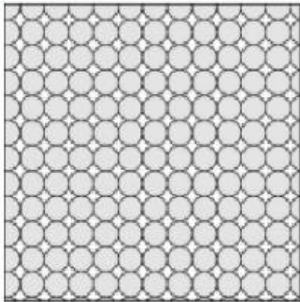
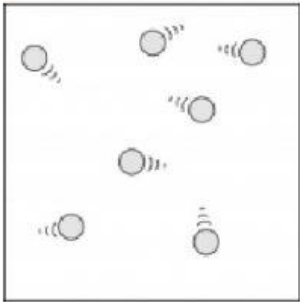
Recording your results

Material	Solid, liquid or gas	How well I could hear

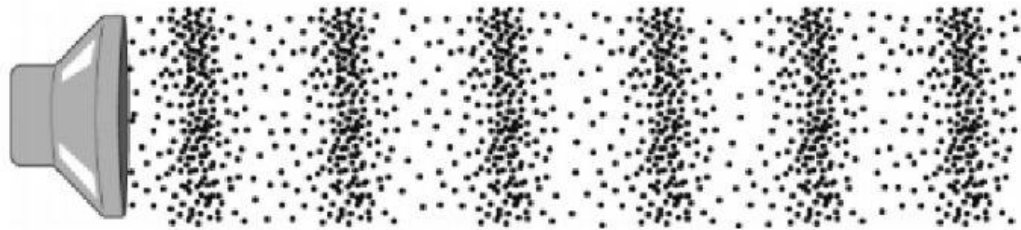
Considering your results/conclusions

Fill in the gaps in these sentences using words from the word box above.

I could hear the sound best through the _____. I could hear sound least well through the _____. This tells me that sound travels best through the _____ and least well through the _____.

solid	liquid	gas
A 	B 	C 
D The particles are a long way apart.	E The particles are held together by very strong forces.	F The particles are moving around freely.
G The particles are held together, but they can move around.	H The particles are very close together.	I The particles are held together by strong forces.
J There are only very weak forces between the particles.	K The particles are quite close together.	L The particles are held together in a fixed arrangement.

The drawing shows a sound wave moving through air particles.



Draw a C where the particles are closer together than normal.

Draw an F where the particles are further apart than normal.

Join each word to its correct meaning.

sound wave

the distance that particles move when a sound wave passes

medium

vibrations passing through a solid, liquid or gas

amplitude

the number of waves per second

frequency

a substance (a solid, liquid or gas)

What does a sound wave transfer? Tick *one* box.

☐ particles

☐ a medium

☐ energy

The drawing shows a lion roaring.



Complete the sentences using letters from the drawing.

The sound will be loudest at _____ and quietest at _____.