



# How do I hear a warrior going into battle?

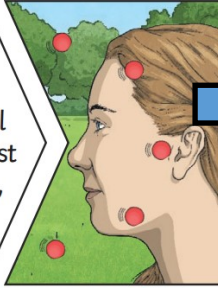
## 1. How do we hear?

Sound can travel through solids, liquids and gases. Sound travels as a **wave**, **vibrating** the **particles** in the medium it is travelling in. Sound cannot travel through a vacuum.

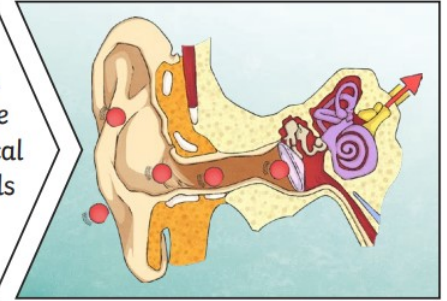
When you hit the drum, the drum skin **vibrates**. This makes the air **particles** closest to the drum start to **vibrate** as well.



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**, passing the **vibrations** into your **ear**.



Inside your **ear**, the **vibrations** hit the **eardrum** and are then passed to the middle and then the inner **ear**. They are then changed into electrical signals and sent to your brain. Your brain tells you that you are hearing a sound.



## 2. How can we stop sound travelling?

Sound is blocked by adding heavy, dense layers between the source of the sound and the **receiver**. Sounds can not travel through a **vacuum** (no

## 3. What is the relationship between the pitch of a sound and the object that makes it?

You can change the **pitch** of a sound in different ways depending on the type of instrument you are playing.

For example, if you are playing a xylophone, striking the smaller bars with the beater causes faster **vibrations** and so a higher **pitched** note. Striking the larger bars causes slower **vibrations** and produces a lower note.



Volume	The loudness of a sound.
Vibration	A movement of energy backwards and forwards.
Soundwave	Vibrations travelling from a sound source.
Ear	An organ used for hearing.
Eardrum	Part of the ear which is a thin, tough layer of tissue that is stretched out like a drum skin. It separates the outer ear from the middle and inner ear. Soundwaves make the eardrum vibrate.
Amplitude	The size of a vibration. The larger amplitude = a louder sound.
Pitch	How high or low a sound is.

## 4. What is the relationship between the volume of a sound and the strength of the vibration?

## 5. What effect does distance have on how we hear?

The size of the **vibration** is called the **amplitude**. Louder sounds have a larger **amplitude**, and quieter sounds have a smaller **amplitude**.

