

## **SOUND AND HEARING**

### **KEY IDEAS**

- Sounds are produced in different ways
- Sound travels
- We detect sound with our ears

### **EXAMPLE QUESTIONS**

- What different kinds of sound can you think of?
- How are different sounds made?
- How do you think sound reaches your ear?

### **SOUNDS ARE CAUSED BY SOMETHING VIBRATING**

- All sounds are vibrations.
- Some examples of things that vibrate to produce sounds are: guitar strings, a column of air in an organ pipe, vocal chords and drum skins.

### **ALTERING VIBRATION CAN ALTER THE SOUND**

- Changing the vibration affects the volume, pitch or tone of the sound produced.

### **SOUNDS TRAVEL THROUGH A MEDIUM**

- Without a medium sound cannot travel. Most of the sounds that we hear travel through air.
- We can also hear sounds through water (when swimming underwater, for example).

### **WE DETECT SOUNDS WITH OUR EARS**

- Ears are complex and sensitive organs.
- Incoming sounds cause our eardrums to vibrate. The eardrum transfers these vibrations to three small bones located in the inner ear, and from there to sensitive cells that convert these vibrations into signals which travel along our nerves to the brain.
- The brain interprets these signals and makes sense of them.
- Ears can be damaged, sometimes permanently, by exposure to loud noises.

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