

### Activity 1 - Sound Survey

You could use the table below and fill it in or write your own notes about what you hear on your sound survey.

<i>What sound could you hear?</i>	<i>Rate it 0-5</i>	<i>What was vibrating to make the sound?</i>

Activity 2 - How We Hear Things

How we hear things

1		
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2		
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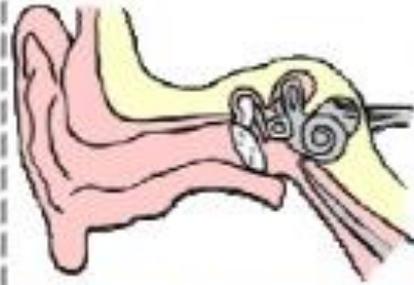
3		
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4		
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The sound wave reaches the **ear**. The wave travels deep inside the ear, where it is turned into an **electrical signal** that the brain understands as **sound**.



The vibrating object causes the **particles** in the **air** around it to vibrate too, because it is touching them.



The vibrating air particles bump into other air particles further away, causing them to vibrate too. This is called a **sound wave**. It gradually moves away from the **source**.



An object starts to **vibrate**, or move very quickly back and forth. This is called a **sound source**. An example of a sound source is a plucked guitar string.



### Activity 3 - The Science of Sound

You have been asked to create an educational programme for children to explain how different sounds travel to our ears. The producers of the programme want you to explain the link between the loudness of a sound and the size of the vibrations, and explain how these sounds reach our ears.

Make sure your explanations of how different sounds travel are clear and easy to understand. You may choose to use pictures or diagrams to support your explanations. Get into character and have fun!

You could use the sheet below to make notes, write your own script or actually record your programme!

<p>1. Introduce yourselves and tell the audience what the programme will be about.</p> <p><i>Hello and welcome to The Science of Sound! In this episode we will be...</i></p>	<p>2. Explain the link between loud and quiet sounds and the size of the vibrations.</p> <p><i>Sounds are made by vibrations. Loud sounds...</i></p>
<p>3. Explain how sound travels from a sound source to our ears.</p> <p><i>The vibrations that make the sound travel to our ears. The vibrations...</i></p>	<p>4. Give your audience any more information you think they need to know, then thank them for watching.</p> <p><i>Thank you for watching The Science of Sound! We hope...</i></p>

## Activity 4 - Science Investigation



Can a straw produce different sounds?

I think...



### Equipment



### Experiment

1. Flatten the last inch of the straw with your teeth.
2. Cut the corners off the straight, flattened end of the straw.
3. Place the cut end of the straw into your mouth, seal your lips around it, and blow until a "sound" is produced.

### Key questions

What happened when you blew through the straw?

How did the sound change?

How did you create a high pitch and a low pitch?

### Activity 5 - Pan Pipes Challenge

Use several straws to make a set of pan pipes! Each straw should play a different pitch when you blow into it.

Flatten the end 2cm of each straw, and cut a triangle in the end.

Prepare several straws like this, then think about how to change the pitch of the sound each straw makes. Stick or tie the straws together to make your set of pan pipes.

Blow hard through the triangle end of the straw to make a sound. You may have to try few times to make the sound!

Draw a picture or take a photograph of your pan pipes and explain how you created your pan pipes so that they can play sounds of different pitches.

