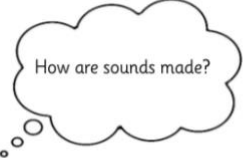
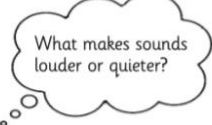
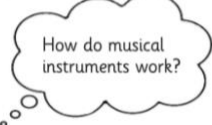
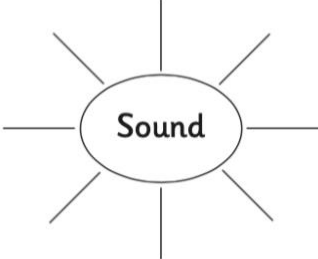

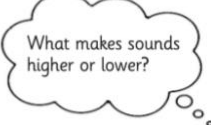
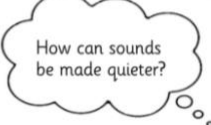


## Year 4 Home Learning Summer Term

### Science

This 'Sound' unit will teach your class about how vibrations cause sounds and how sounds travel, as well as how sounds can change pitch and loudness. The children will learn about how sounds are made, carrying out demonstrations of vibrations, and completing a sound survey of their school/home. They will work in groups to create a human model of the way particles pass sound vibrations on, and write and star in their own documentary explaining how sound travels. The children will work in a hands-on way to explore pitch, and will use their understanding of how high and low sounds are made to create their own set of pan pipes. They will have the opportunity to make a string telephone, and will use this to investigate how sounds change over distance and through different materials.

1	<p><u>What is Sound?</u> Children complete the <b>Sound Mind Map</b> to show what they already know about sound. Watch this <b>BBC clip</b> (<a href="https://www.bbc.co.uk/bitesize/clips/zqtzpv4">https://www.bbc.co.uk/bitesize/clips/zqtzpv4</a>) and list key words about making sounds.</p> <p style="text-align: center;">Draw or write about the things you already know about sound.</p> <div style="display: flex; justify-content: space-around; align-items: center;"><div style="text-align: center;"><p>How are sounds made?</p></div><div style="text-align: center;"><p>What makes sounds louder or quieter?</p></div><div style="text-align: center;"><p>How do musical instruments work?</p></div><div style="text-align: center;"><p>Sound</p></div><div style="text-align: center;"><p>How do we hear sounds?</p></div><div style="text-align: center;"><p>What makes sounds higher or lower?</p></div><div style="text-align: center;"><p>How can sounds be made quieter?</p></div></div> <p style="text-align: center;">Do you have any questions about sound? What would you like to find out? Write your thoughts below.</p>
2	<p><u>Sound Survey</u> Children complete the <b>Sound Survey Activity Sheet</b> to describe the sounds they heard at the noisiest place, and explain what was vibrating to make each sound.</p>

	<p>Take a walk around indoors or outside to identify and describe the sounds you can hear! What is making each sound? Listen carefully. Can you hear high and low sounds? Can you hear loud and quiet sounds?</p> <p>Fill in the table by describing the sounds you can hear.</p> <table border="1" data-bbox="327 293 1302 831"> <thead> <tr> <th data-bbox="327 293 651 338">What can you hear?</th> <th data-bbox="651 293 975 338">Is it high or low?</th> <th data-bbox="975 293 1302 338">Is it loud or quiet?</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	What can you hear?	Is it high or low?	Is it loud or quiet?																																	
What can you hear?	Is it high or low?	Is it loud or quiet?																																			
3	<p><u>The Science of Sound</u>  Children use the Science of Sound Activity <b>Sheet (Resource sheet 1)</b> to plan their programmes, then practise acting them out. You may wish to film the children performing their programmes, or you may want them to present their programmes to the class or another audience.</p>																																				
4	<p><u>Travelling Sounds</u>  Children cut and stick the pictures on the Travelling Sounds Activity Sheet (<b>Resource sheet 2</b>) in order to show how sounds travel Watch this clip <a href="https://www.bbc.co.uk/bitesize/clips/z47w2hv">https://www.bbc.co.uk/bitesize/clips/z47w2hv</a> explaining how distance affects the loudness of a sound as it travels.</p>																																				
5	<p><u>Telephone Transmission</u>  Children will make and use a string telephone to make sound louder so it can travel further. Children use the instructions on the String Telephone Activity Sheet (<b>Resource sheet 3</b>) to construct their telephones, then they will test them out. They will need to be a large distance apart, so this may be best done in the hall or outside. Explain how the telephones make the sound of the children's voices audible using the Lesson Presentation. Children complete their own explanations on the String Telephone Activity Sheet.</p>																																				

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.

Work with your group to plan the episode. All members of your group should take part equally. 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!

1. Introduce yourselves and tell the audience what the programme will be about.

*Hello and welcome to The Science of Sound! In this episode we will be...*

2. Explain the link between loud and quiet sounds and the size of the vibrations.

*Sounds are made by vibrations. Loud sounds...*

3. Explain how sound travels from a sound source to our ears.

*The vibrations that make the sound travel to our ears. The vibrations...*

4. Give your audience any more information you think they need to know, then thank them for watching.

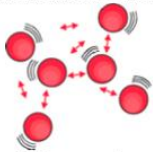
*Thank you for watching The Science of Sound! We hope...*

**You may want to use these words to help you:**

sound      small      air      particles      ear      hear  
big      source      travel      loud      quiet      vibration

Cut out these pictures with their captions and place them in the correct order in the boxes above.

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The vibrations are changed into electrical signals and sent to your brain. Your brain tells you that you are hearing a sound!



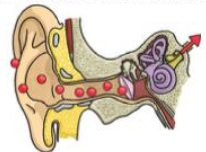
Vibrations pass from the sound source to particles in the air around it.



The vibrations reach your ear, and pass into your ear.



The sound source begins to vibrate.



The vibrations pass from particle to particle.

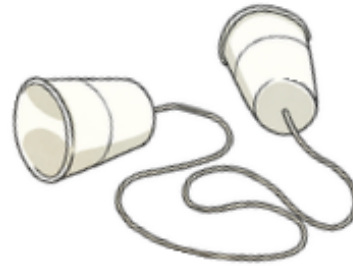
Make a string telephone to explore how sounds travel over a distance.

**You will need:**

Two paper cups

A compass or sewing needle to make holes in the cups;

Approximately 20m length of string (kite string works well).



**View Menu do:**

1. Use the compass or sewing needle to carefully poke a hole in the bottom of each cup. You may need to ask an adult to help you.
2. Thread the string through the holes and tie a knot at each end to stop it pulling through the cups.
3. You and your partner should each hold a cup and move apart so that the string is tight.
4. Take turns talking into your cup while your partner listens in their cup.

**How does it work?**

Use the key words to fill in the gaps to explain how your string telephone works.

When one person talks into their cup, the cup \_\_\_\_\_. The sound \_\_\_\_\_ of these vibrations passes along the string. The string is a \_\_\_\_\_, so the particles are very close together, and the vibrations can pass \_\_\_\_\_ and easily along the string. The vibrations pass from the \_\_\_\_\_ into the second cup, which also vibrates. These vibrations pass through the air \_\_\_\_\_ into the second person's \_\_\_\_\_, who can then hear the sound of the first person's voice. The sound of the person's voice is \_\_\_\_\_ through the string than it is through the air over the same \_\_\_\_\_.

particles	vibrates	energy	string	solid
	distance	ear	louder	quickly