



| Summer 1                      | Sound  |   |  |   |   |  |
|-------------------------------|--|---|--|---|---|--|
| <b>Prior learning</b>         | EYFS – learn about ears and explain how ears work, explore how to make sound, explore the sense of hearing                         |   |  |   |   |  |
| <b>Lesson objective</b>       | Identify how sounds are made   | Explore how vibrations from sounds travel through a medium to the ear                             | Explore sound insulation   | Explore volume  | Explore pitch   | Explore sounds from near and from far  |
| <b>Key vocabulary</b>         | vibration<br>medium<br>waves<br>eardrum<br>signals   | source<br>energy<br>particles<br>echo<br>vacuum   | materials<br>reflect<br>absorb<br>insulate<br>defenders                  | volume<br>decibels<br>decibel metre<br>amplitude<br>power   | pitch<br>high pitch<br>low pitch<br>instruments<br>orchestra                                      | energy<br>particles<br>travel<br>sound source<br>fade  |
| <b>Creative context</b>       |  |   |  |   |   |  |
| <b>Substantive knowledge</b>  | Identify how sounds are made, associating some of them with something vibrating  | Recognise that vibrations from sounds travel through a medium to the ear                          | Recognise that vibrations from sounds travel through a medium to the ear | Find patterns between the volume of a sound and the strength of the vibrations that produced it   | Find patterns between the pitch of a sound and features of the object that produced it            | Recognise that sounds get fainter as the distance from the sound source increases  |
| <b>Disciplinary knowledge</b> | Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusion | Identifying differences, similarities or changes related to simple scientific ideas and processes | Setting up simple practical enquiries, comparative and fair tests        | Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers<br>Reporting on findings from | Identifying differences, similarities or changes related to simple scientific ideas and processes | Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables<br>Reporting on findings from enquiries, including oral and written explanations, displays or presentations |



|                          |   |  |  |  |  |  |
|--------------------------|---|--|--|--|--|--|
|                          |   |  |  | enquiries, including oral and written explanations, displays or presentations of results and conclusions   |  | of results and conclusions   |
| <b>Recorded learning</b> | <p>Use the handout to label the parts of the ear.</p> <p>Produce an explanation to show how sound is created, travels and is received by the human ear.</p> <p>Challenge Task: Ensure the children use scientific language to describe how sound travels.</p> | <p>Explore 4 different experiments to observe how sound travels in solids, liquids and gases. Use the handout to fill in observations.</p> <p>Sugar and speaker<br/>Hanging from your ears<br/>Rocks underwater<br/>Balloon chatting</p> | <p>Construct ear defenders using two cardboard tubes and sticky tape. Provide a variety of materials to explore, such as foil, cotton wool, bubble wrap, fabric, card or paper. Test which material makes the best ear defenders by filling the cups with the materials and testing how well they insulate the sound. Record their results.</p> <p>Challenge Task: Can they think of any more materials that they think would be suitable to use as ear defenders? Can they explain why?</p> | <p>Investigate how dropping a weight from different heights onto a drum affects the volume of the sound produced. Record results and translate these results onto a line graph. Attempt to explain the relationship between the height of the weight and the volume of the sound made, ensuring they understand that the height of the weight will affect how much energy/power is being used to hit the drum.</p> <p>Challenge Task: In conclusion, discuss</p> | <p>Create an instrument - by blowing or tapping tubes of water, creating instruments with elastic bands, making a paper xylophone with varying thicknesses of paper tubes or making different sized shakers. Once their instruments have been made, can the children play a tune as well as experiment with the volume?</p> <p>Challenge Task: follow a pitch pattern. Can their instrument play a low pitch to a high</p> | <p>Investigate how the volume of sound changes as they get further away from a sound source. Carry out this investigation by playing some music through a speaker and measuring the volume of sound using a decibel meter.</p> <p>Challenge Task: record the conditions needed to make this investigation a fair test.</p> |



# Science – Year 4



|                 |  |  |  |  |  |  |
|-----------------|--|--|--|--|--|--|
|                 |  |  |  | how the volume of the drum affects the height of the sound waves that are created. | pitch to a middle pitch sound?<br>Write conclusions. |  |
| Future learning |  |  |  |  |  |  |