




## Learning Scientific Skills Outside the Classroom

### Scientific Skills

Measure		Record	
Country of Origin	Suggested Age Range	Suggested Theme	
 UK	KS1 specialist unit Activity planned for children with severe learning difficulties.	Sound	
Location outside the classroom		Benefits of using this location	
Large open space outside		You need a large open area which is quiet and where children can measure a long distance	
Learning Objectives – Scientific Skills		Learning Objectives – Knowledge	
To measure distance in metres using a trundle wheel To record data in a table		To know how to make a sound using their body To know that they use their ears to listen to sounds To know that sound can travel To know that some sounds travel further than others To know that a quiet sound is harder to hear than a loud sound	
Key Vocabulary			
Scientific skills vocabulary – measure, measuring, metre, distance, record, recording, table, results Knowledge vocabulary – loud, quiet, near, far, whisper, shout, sound, travel			
Resources / Equipment			
<ul style="list-style-type: none"> <li>• Equipment for making sounds – drum, bell, children’s voices</li> <li>• Equipment to measure distance – trundle wheel, chalk, cones</li> <li>• Equipment for recording – clipboard, results table, pencils</li> </ul>			
Teaching Activities			
<p><b>Explain</b> – They are going to go outside and explore whether sound can travel from a place where it is made to them. If a sound is made, we can hear it because the sound travels to our ears.</p> <p><b>Discuss</b> – What is sound? Can they think of different ways to make a sound using their voice? Can they make different sounds using their body? How far can sound travel? How far away can we hear sound?</p> <p><b>Activity 1</b> – Go outside into a large space and ask one child to stand in the centre of the other children and speak in a whispering voice. Children say whether they can hear the voice. The same child moves to another place on the playground and speaks again in a whispering voice. Children say whether they can hear the voice. Repeat with another child whispering.</p> <p><b>Explain</b> – They are going to test some sounds to see how far away they can go until they cannot hear the sound anymore. They are going to measure the distance away from the sound in metres.</p> <p><b>Demonstrate</b> – Show the children how to measure a distance in metres using a trundle wheel.</p>			





**Activity 2** – Children choose a base/starting point which will be point 0 metres where the child will stand to make a sound. They work together, with adult support as required, to measure distances of 10 metres across the playground. For children who can count to ten, they can push and count together the clicks on the trundle wheel until they get to ten clicks. A different child will draw a chalk mark on the floor at this point and place a cone on top of the mark to show that this is 10 metres. This process is repeated from each cone until they have worked together to measure 100 metres.



A child stands at the base and makes a sound. The remaining children will move in 5 metre intervals across the playground and listen to whether they can hear the noise. If they can hear it, they will tick the correct box in a pre-drawn table.

**Record** – Children listen to different sounds (for example a whisper, a shout, a bell and a drum) and record in a table whether they can hear the sound at different distances.



**Discuss** – Together, the class will discuss their results. How far away could they hear sound? Is it the same distance for all the sounds? Is it easier to hear a quiet sound or a loud sound?

Examples of children’s work and teacher comments from country of origin

*The children really responded well to this activity and I was amazed at their recall of previous discussions about sound and the vocabulary they used independently.*



*They loved the measuring and took it all very seriously – making sure the cones were in a straight line and watching each other to make sure they counted properly. They also loved making sounds – especially the shouting! They soon realised it was hard to communicate when they were far apart so decided on sign language to say start stop, and wait! They wanted to use a thumbs up when each sound was recorded and ready for the next. They asked why they could see their friends, but they couldn’t hear them.*



*Next, we would talk about where sounds are coming from and how it can help us in our daily life, for example we can hear cars on a road and even though we can’t see them we know there must be a road and a car nearby.*