There is a world of sounds out there to discover. A nice way to start any of these experiments is to lie on the floor (or on the grass outside) with your children and just listen. What can you hear? Where do the noises come from? How does the noise travel to our ears? Which parts of our body do we use to hear noise? If we put our fingers in our ears does that stop the sound?

Some other great questions to start things off are;

Why don’t worms have ears?
How do whales hear under water?
What are the birds singing about?
Have you ideas on how to make musical instruments?
What noises do you like and why?

Activity: Coat hangers

Method

Take the metal coat hanger and attach two pieces of string to each end of the coat hanger. Create two loops at the end of the pieces of string so you can fit your fingers through it. Now loop the strings over your fingers (pointer finger) and put your fingers in your ears. While keeping your fingers in your ear, slightly lean forward and ask a friend to hit the coat hanger with the chopstick or a metal straw.

Observations, conclusions, ideas

Try using coat hangers made from different materials, such as wooden or plastic coat hangers. You will find that wooden and plastic coat hangers don’t vibrate as much as metal ones, so the vibrations don’t cause the ear drum to vibrate and therefore it doesn’t register as a loud noise.

What’s the STEM?

Sound waves carry sound from the source to your ears. Sound waves travel better in solids or liquid than they do in the air. Interested adults might like to know that the molecules in the air are further apart than in liquid and solids so the sound waves travel less. Inside your ear the sound wave causes your eardrum to vibrate and you hear the noise.

When you put your fingers in your ears, you provide a path that lets more of the vibrations reach your ears. When your fingers aren’t in your ears you hear a faint, high-pitched, tinny sound. When you put your fingers in your ears, you hear the deep, resonant tone. The hanger makes the same sound in both situations, but in one you provide a path that lets more of the sound reach your ears.

Extended learning

Tin can telephone, dancing man