

Sound



## Coat Hanger Chimes

**Primary Audience:**

**Description:** Learners will - using nothing more than a coat hanger and some string - explore and understand sound energy and how it moves.

**Keywords:** Sound, Wave, Energy

### **Materials:**

- Wire Hangers
- Yarn
- Scissors
- Sturdy Tabletop

### **Instructions:**

Select a hanger and strike it against the table. Observe the sound it makes. What can you do to hear the **VIBRATION** better?

Wrap the ends of the string around each of your index (pointer) fingers two times. Make sure there is still a lot of string between your fingers and the hangers.

Put the tips of your index fingers in your ears.

Bend forward and allow the coat hanger to strike against the table, like an elephant swinging its trunk. What do you hear?

Why is the sound louder when you have your fingers in your ears?

### **What's Going On?**

To have a sound, you must have something that vibrates. The first time you struck the hanger against the table, what was the **MEDIUM** that the **VIBRATION** traveled through? A medium can be anything that a sound wave travels through. Only a **VACUUM** (an area where there are no molecules) can not be a medium.

## Sound

What was the medium that the sound wave traveled through when you had your fingers in your ears?

Sound travels more quickly through a denser medium. Air, which is a gas, is not very dense. Not all of the vibrations reach your ears. When you put your fingers in your ears, the vibration is traveling through the string and the bones in your fingers directly to your ears. A lot more vibrations reach your ears more quickly.

Try all of the different hangers on the table. Will they all sound the same? Can you pick out one that won't vibrate much at all? Will the hangers sound different if you strike them against the floor? Try it!