

Musical Coat Hangers



WHAT YOU NEED:

- Wire coat hanger
- Roll of string
- Scissors
- Metal object, such as a spoon



LET'S EXPERIMENT:

1. Cut two 60cm long pieces of string
2. Tie the end of each string to the end of the metal hanger as pictured below.
3. Use the metal object to lightly tap the coat hanger. What can you hear? Is the sound loud or soft?
4. Now wind the strings around your two index fingers.
5. Place your index fingers on the small flap of skin in front of your ears and press down gently.
6. Ask someone to use the metal object to lightly tap on the coat hanger. What can you hear? Is the sound louder or softer?



WHAT'S HAPPENING?

Most of the sounds we hear are transmitted through air. However, air is not the best medium to carry sound! Knock on the table and listen to the sound. Now place your ear to the table, knock, and listen to the sound again. Is the sound louder?

Sound travels through solids much more efficiently since the molecules in solids are closer together, making it easier for the vibrations to travel from one end to another (metal hanger to string to fingers to ears). The vibrations can still reach your ears through the air, but the sound is quite dull.

What other sounds can be amplified by using water and solids as a medium?