

# SCIENCE SHOW OFFS

## COAT HANGER BELLS

### RESOURCES NEEDED

- **Metal coat hangers**  
This doesn't work with plastic hangers.
- **String**  
This also works with wool.
- **Spoon**  
Anything metallic will work too.



### EXPERIMENT

#### SET-UP

- Tie two pieces of string to a metal coat hanger. If you want to, you can make up more, so that many people can try this demo at the same time.

#### STEP 1

- Carefully wind the end of the string around each of your forefingers a few times.

## STEP 2

- Gently put your fingers in your ears.

## STEP 3

- Get a friend to lightly tap the coat hanger with a spoon, and hear the church bell-like sound! Try using different objects to discover the different sounds that they make.



## DISPOSAL AND CLEAN UP

- All materials from this Science Show Off can be reused, so keep them in a box for later!

## RISK MANAGEMENT

### RISK

The string may be wound too tightly and injure fingers.

If coat hangers are hit with too much force, it could cause pain to ears.

Coat hangers can have sharp points that could injure eyes or skin.

### MANAGING THE RISK

Take care when rolling the string on your fingers.

Ensure coat hangers are tapped lightly.

Ensure people holding coat hangers are aware of risk and are careful.

## SCIENCE EXPLAINED

Sound can travel through solids, liquids, or gasses, and the way it travels through each of those states determines how loud, and for how long, we can hear the sound. In metals, molecules are tightly packed, so when they are hit, the sound can easily travel through the string and into your ears through your fingers.

## REAL WORLD EXAMPLES

A doctor's stethoscope works in the same way as the coat hangers! The sound travels up the instrument to the doctor's ears, enabling them to hear a patient's heartbeat or breathing clearly.

## PARENTAL GUIDANCE

Science Show Offs should take place with appropriate adult supervision.

## COMPETITION

To enter the Science Show Offs Competition, go to;  
[otagomuseum.nz/scienceshowoffs](http://otagomuseum.nz/scienceshowoffs)