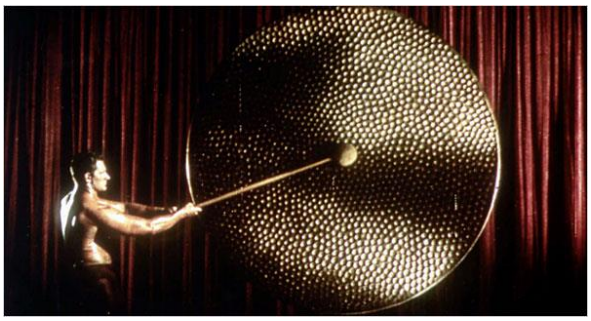
Spoon Gongs



Would you love to play your very own gong at home?

Have a go at making your own gong out of things you might find around the house!

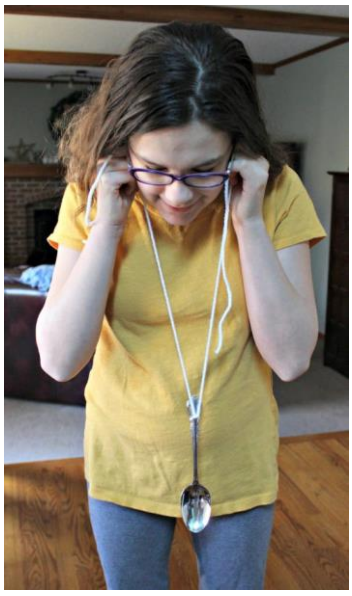
This experiment explores how sound travels. Remember – sound travels in waves from the sound source to your ear. The soundwave has to travel through something, but it can be a solid, liquid or gas.

You will need:

- A ruler (we found a wooden or heavy plastic ruler worked best)
- Two different size spoons (try using a teaspoon and a serving spoon)
- About 1 meter of string (this will depend on how tall you are as you can see below)

Firstly, create a loop in the middle of the string and insert the handle of the spoon.

Pull tightly so that the spoon hangs in the centre of the string and you have two long pieces of approximately equal length.



Take each string and wrap them around your index finger on each hand.

Then push the string against each ear (not into the ear but just outside like you are going to plug your ears because you don't want to hear your Mum ask you to do your chores).

You'll want the spoon to hang just below the waist once both ends of the string are placed near the ears.

You can see in this photo that you don't have to use the end of each piece of string -- in fact, as you do the experiment, change how high or low the spoon hangs to see if it changes the pitch of the sound. If it does, why do you think this happens?

Ok, here's the big moment ...

Once the string in pushed against the ears, have someone GENTLY hit the ruler against the round part of the spoon -- and watch the look on your child's face (priceless!).

> *Warning*: children may think that the HARDER they hit the spoon, the louder the sound - be sure to test out this theory too!

If you are using a small spoon, you should hear a distinct bell sound - with a larger spoon, it will sound more like a gong. Why do you think this is?

The Science Behind Sound Wave Experiments

Here's what's really happening during the activity - I've highlighted some of the science terms that you can introduce when discussing this experiment:

When the ruler hits the spoon, it creates vibrations which make sound waves. These sound waves travel up the string and to the ear instead of just spreading out into the air around you.

The string acts as a ***conductor*** - an object that allows sound waves to travel through it.

Depending on the size of the spoon and the length of string, the sound will appear higher (like a church bell) or deeper (like a gong).

And because the string allows the sound waves to continue to travel, the sound of the spoon will ***resonate*** or ***reverberate*** - meaning they will continue for a while after you have hit the spoon.

Another thing we found was that the only one who can hear the bell or gong sound will be the person with the string near their ears - which we thought was also pretty cool. Why do you think they can hear the sound more clearly or loudly than other people?