

Microbe Magic Experiments

<http://microbemagic.ucc.ie>

Explore your body – Your own telephone line!

What you will need

Two plastic drinking cups

A meter or longer of string

Paper clips or sellotape

Sewing needle (*adult help is required when using the sewing needle*)

What to do:

- Punch a tiny hole in the bottom of the plastic drinking cups using a sewing needle (*you will need an adult to help you with this*). The hole should only be as big as required for the string to fit through.
- Thread the string through the hole in the cup so that the short end is inside the cup.
- Tie a paperclip to the end of the thread so that the thread doesn't pull through the hole. You could also use the sellotape to secure the thread although you will need to make sure it is very secure. When you pull the thread taught, it may slip from under the sellotape.
 - If you are good at knots, just tie a large knot in the string to prevent it from travelling back through the hole.
- Thread the other end of the thread through the second drinking cup and tie the paperclip / secure with sellotape as before.
- Make sure that the thread is secured at both ends *inside* the cups.
- Give one plastic cup to a friend and pull the string tight. When one person speaks quietly, the other person should be able to hear what they are saying!

- There are lots of experiments you can do with your telephone line – you can see how well sound travels when you leave the string loose, use different lengths of string (longer or shorter), try to make a 'telephone exchange' using more than two cups, with cups tied to the first string at different points along the length of the string, do you have to use plastic – will Styrofoam work just as well.....??!

What's happening?

Sound travels in waves through the air. When you pull the string tight, the sound waves from your voice travel down the string and are amplified by the cup at the other end, allowing the listener to hear what you are saying.