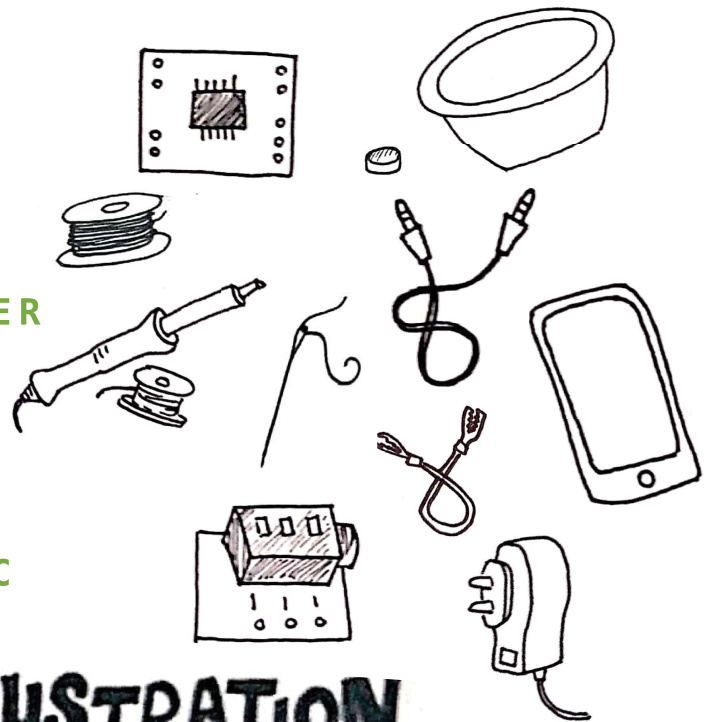


WOVEN SPEAKER

The Woven Speaker works on the basis of electromagnetism. Using a simple weaving technique, you can make your own speaker which can transmit music from your phone!

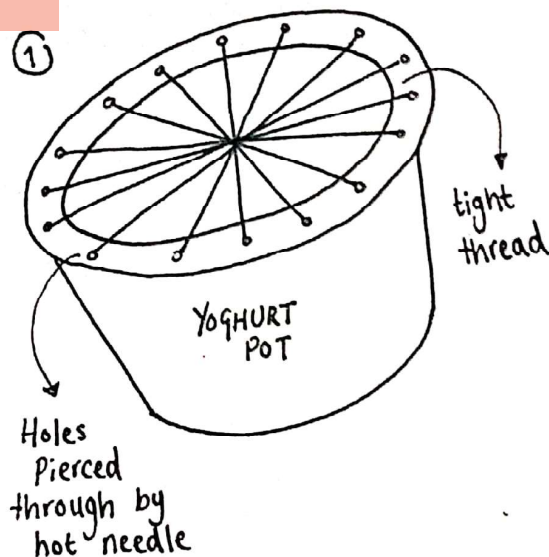
What you need:

YOGHURT POT
INSULATED WIRE
MAGNET
SOLDERING IRON AND SOLDER
NEEDLE AND THREAD
CROCODILE CLIPS
AUX CABLE
AUDIO JACK PORT
5V POWER SUPPLY
DEVICE FOR PLAYING MUSIC



BUILD ILLUSTRATION

STEP 1

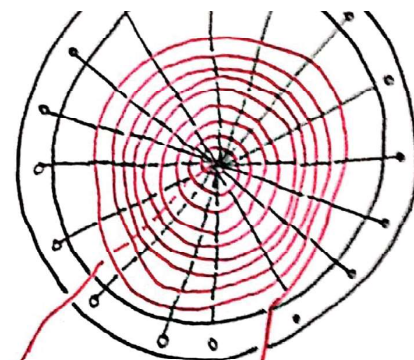


Prepare your yoghurt pot by piercing holes around the lid. You can do this by heating up a needle, using a small candle, and piercing through the plastic as it melts.

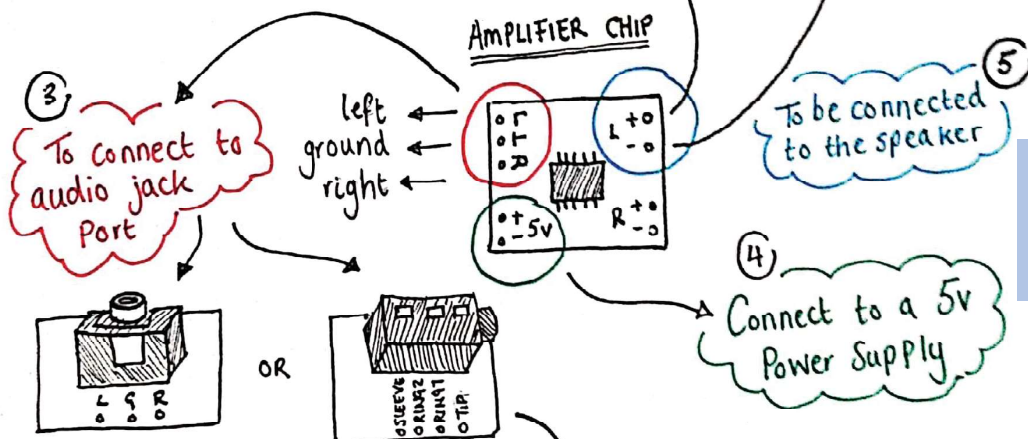
Create a web for weaving, by using thread and crossing it from one side to the other. tie it in position. Make sure that is is tight!

STEP 2

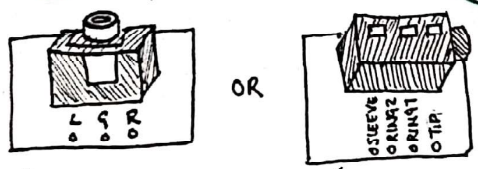
Weave the insulated wire around the web. You need to include as many turns as possible, making sure it's tight. Alternate going under and over the thread to weave into position. Make sure to leave excess at each end. For the electronics, make the different connections for the Amplifier chip as shown in the diagram below. Use thin insulated wire.



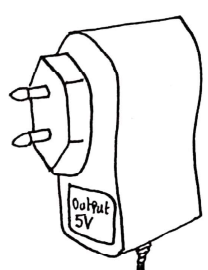
it's always best to test with crocodile clips first before soldering!



Good solder connections are key!

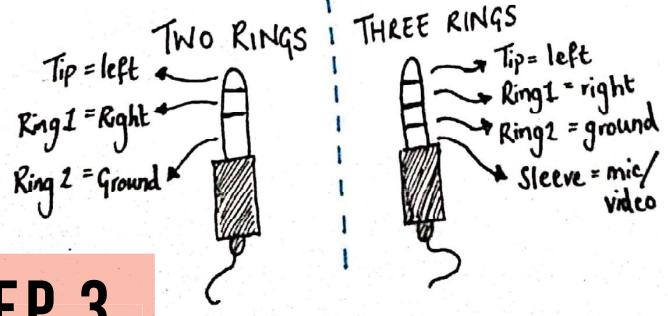


Can be found in old speakers OR Bought online



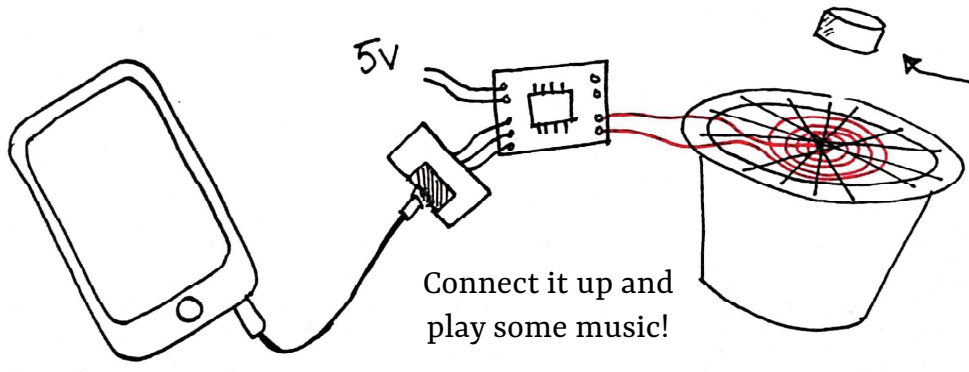
RED → +ve
BLACK → -ve
Strip the end of a 5v adapter

Know Your Aux



Make sure to use a 5V supply only. Any bigger and the Amplifier chip will be damaged. Strip the end of the plug and make the correct connections by soldering in place.

STEP 3



Connect it up and play some music!

Hover the magnet slightly above the centre of the speaker

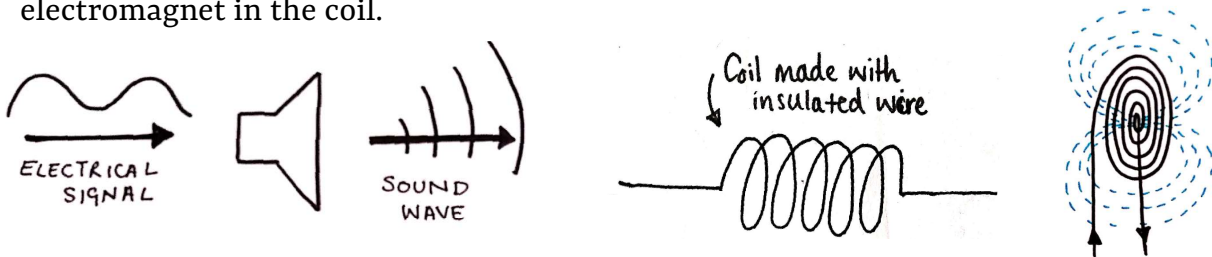
How it Works

Connect up your phone and play some music.

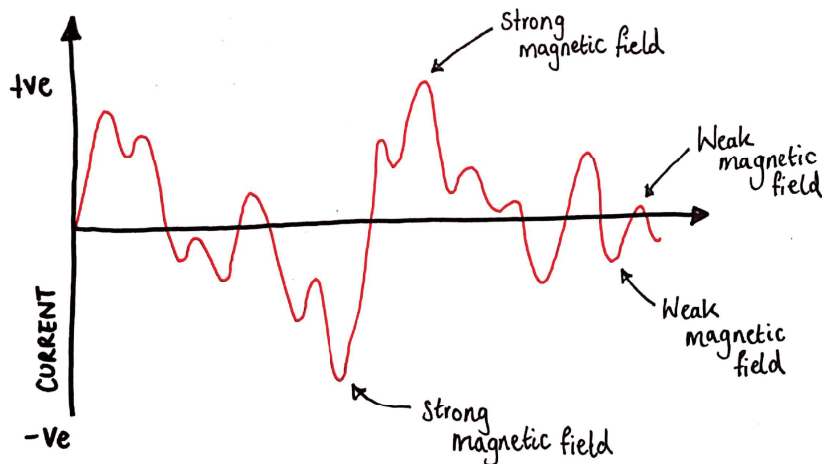
Hover the magnet over the top of the speaker. Listen very carefully and you should hear your music play!

The woven speaker is an electromechanical transducer as it converts an electrical signal (from the phone) to sound waves.

The phone supplies an electric signal with a varying current, which runs through the coil of wire (which was created when weaving the spiral). This creates an electromagnet in the coil.



This electromagnet changes polarisation and strength in accordance with the electric current. As the signal provided by the phone varies, with a varying current, the properties of the electromagnet field also change.



This electromagnet is attracted to and repelled by the magnet which is held above the coil, causing the woven spiral to move up and down. This movement creates a pressure wave which allows us to hear sound.

