

Make your own:

UNDERWATER HYDROPHONE

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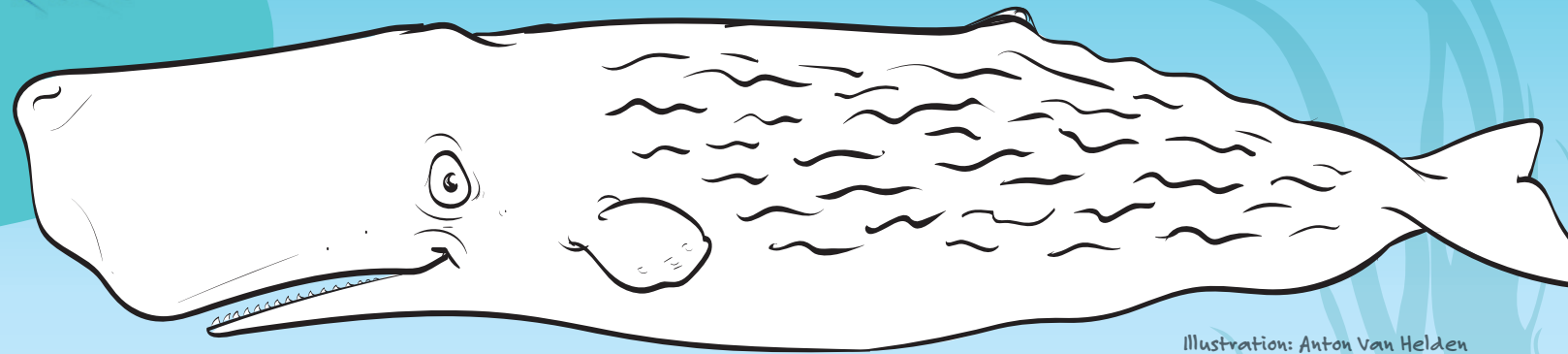
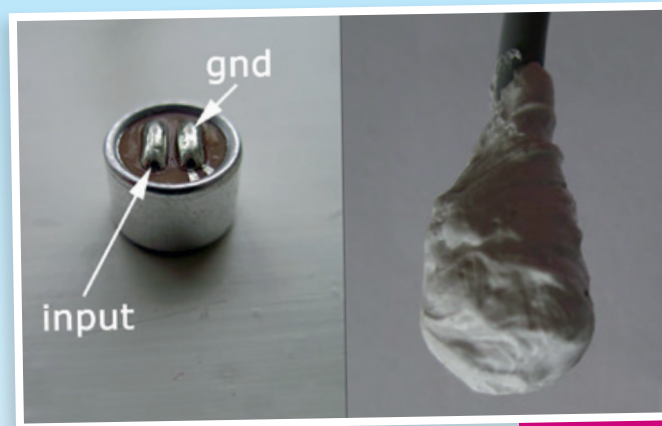


Illustration: Anton Van Helden

What to do:



Steps 1-2

1 Solder the two leads at one end of the audio cable to the electret. Make note: Which colour is soldered to the ground or "gnd" connection? Which colour to the "input" connection?

2 Cover the microphone and end of the audio lead with flexible sealant (as shown in the picture). Allow the sealant to set.

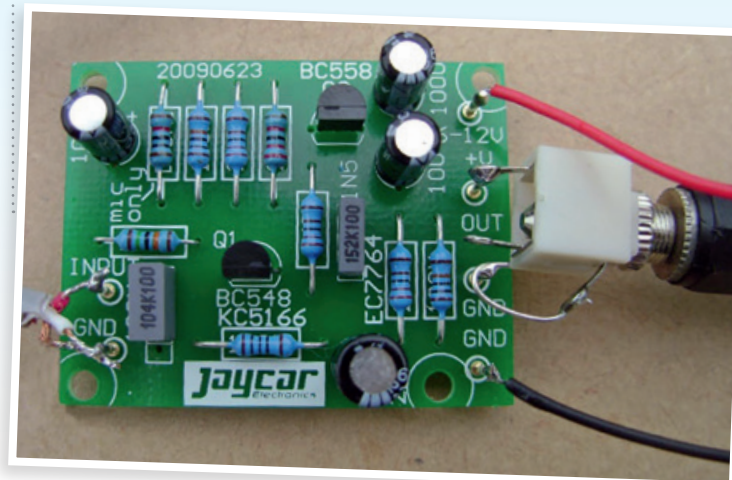
3 Make-up the preamplifier following the instructions that comes with the kit.

4 Solder the "gnd" lead of the microphone audio cable to the "gnd" of the preamplifier. Solder "input" lead to the "input" of the preamplifier.

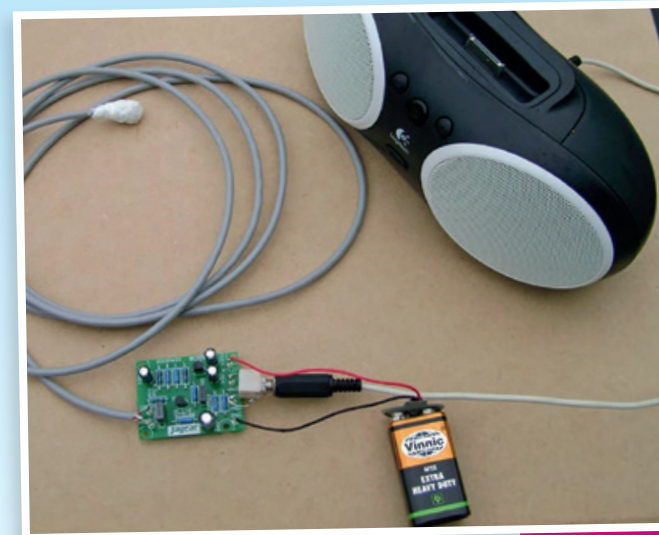
5 Solder the battery snap leads and the 3.5mm socket connections to the preamplifier (as shown in the picture).

6 A short length of wire is needed to be soldered between the side connection of the socket and the "gnd" connection because the side connection cannot reach. Use an off-cut of wire taken from one of the components soldered earlier in the preamplifier circuit for this.

Note: The central connection of the socket isn't used.



Steps 3-5



Steps 7

7 Connect the main amplifier to the preamplifier using a 3.5mm audio lead. The picture shows the complete set up.

8 Fill up your bucket/aquarium with water and place hydrophone in. Listen to a range of sounds you can make with your collection. What differences are there between hearing them underwater, and hearing them in the air?

You'll need:

(Cat#s are for parts from JayCar Electronics)

- One electret microphone insert, Cat# AM4010 or AM4011
- Audio connecting cable 2-3m long, Cat# WB1500
- Flexible silicone sealant, such as Selley's Wet Area Silicone, 75g tube
- One Pre-Champ Versatile Preamplifier Kit, Cat# KC5166
- One 3.5mm enclosed socket, Cat# PS0122
- One 9 volt battery snap connector, Cat# PH9230
- One 9 volt battery
- Solder, soldering iron, and tools to construct the preamplifier
- Main amplifier (battery-operated speaker or similar)
The input of the main amplifier needs to be able to connect to the 3.5 output socket of the preamplifier. If the amplifier does not have a suitable lead, you will need an audio lead with plugs at both ends. Jaycar sells a 1.5m long lead 3.5mm stereo plug to 3.5mm stereo plug, Cat# WA7008
- 10L plastic bucket or a small aquarium
- Collection of things to make sounds with (eg, paper straws, a hand-operated egg beater, a small bottle, wooden play blocks etc.)

Illustration: Anton Van Helden

