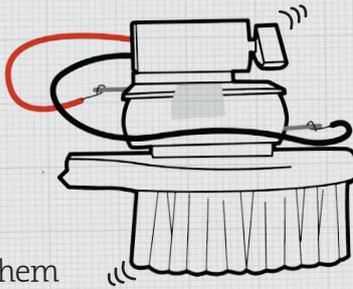


Indoor Inspiration

Activity

RACE BUG ROBOTS



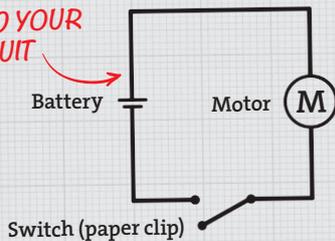
Make skittering brush-bots and pit them against each other in a rapid race

Suitable for Cubs, Scouts, Explorers, Network

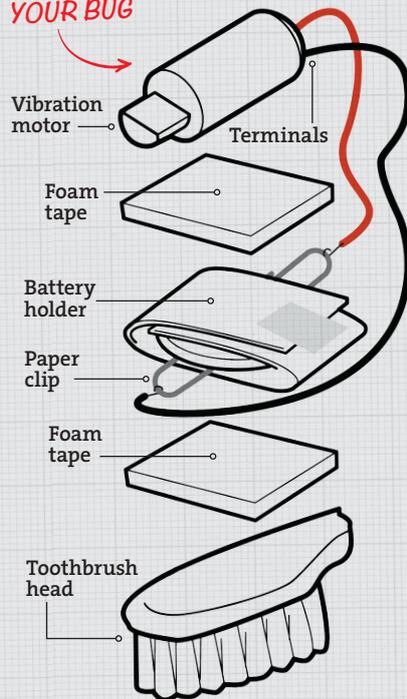
You will need:

- Mini vibration motor ● Wire stripper ● Two paper clips ● Scissors
- Small piece of card ● 3V coin battery ● Sticky tape ● Double-sided foam tape ● Toothbrush head
- Googly eyes, pipe cleaners (optional)

BUILD YOUR CIRCUIT



ASSEMBLE YOUR BUG



1 To prepare your motor, cut down the wires from the motor so that they are about 4cm long. Strip 1–2cm of insulation from the end of each terminal of the motor.

2 Attach a paper clip to each wire, Loop the wire through and twist it around on itself. The paper clips are the battery contacts, one of which will act as your switch.

3 To make a battery holder cut a rectangle of card the same height and slightly over three times the width of your 3V coin battery. Wrap it round into a pocket that the battery can slide in and out of and stick it together – it should have two layers of card on one side and one on the other.

4 To assemble the bug, stick the motor to the top of the pocket with the double-sided foam tape – make sure the motor can rotate freely. Insert the battery into the pocket.

5 Clip one paper clip onto the single layered side of the cardboard pocket, keeping the other end of the paperclip attached to the terminal. Stick the single layered side of the pocket to the back of the toothbrush head.

TIME NEEDED

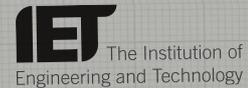
30–40 minutes

BADGE



The Institution of Engineering and Technology (IET) partners the Scout Electronics Activity Badge.

PARTNER



OUTCOMES

This activity is an introduction to electronic engineering, helping Scouts to recognise common components and the functions they perform in electronic circuits.

MORE INFORMATION

Equipment for this activity can be purchased cheaply from suppliers such as kitronik.co.uk; rapidonline.com or maplin.co.uk. Visit scouts.org.uk/IET for more information and activities.

6 Clip the second paper clip onto the inside fold of the battery pocket so that it makes contact with the battery. The motor should switch on.

7 To switch the bug on and off, unclip the top paper clip to switch the motor off. Replace the paper clip to switch your brush bug on. Finish your bug by adding eyes and other features. Add some pipe-cleaner stabilisers if your bug is prone to toppling over.

8 Use cardboard tubes, old shoe boxes and cardboard boxes to create a course for your brush-bots. And now you're ready to race!