



# STEM clubs

co-ordinated by merseySTEM

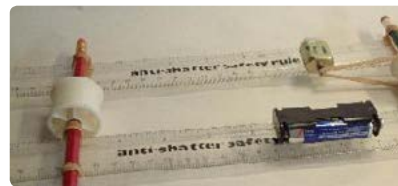
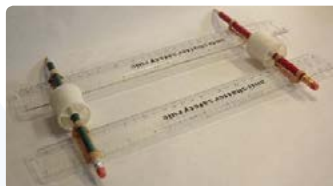
## MAKE YOUR OWN ROBOT

### Focus: Design Technology

Robotic devices are anything that we make to take over a job which is boring, repetitive or dangerous to humans. The basic unit created in this activity imitates a robot buggy, the winding drum for a robotic lift, the drum of a washing machine, and lots of other robotic devices.



**AIM** For students to make a simple robot from everyday materials



### Equipment:

- two pencils
- two rulers
- two cotton reels
- rubber bands
- one electric motor
- one battery holder

### Instructions:

1. Lie a pencil over one end of one of the rulers to create a 'T' shape.
2. Loop an elastic band over one end of the pencil, pull it down under the ruler and loop over the other end of the pencil so that the pencil is attached to the ruler
3. Repeat this action to fix the second pencil to the other end of the ruler.
4. Slide one cotton reel onto each of the pencils.
5. Loop an elastic band around one of the cotton reels.
6. Attach the second ruler to the pencils in the same way as No.2.
7. Attach the electric motor and battery holder to the rulers with blu-tac or plasticene. Connect the cotton reel to the motor using the elastic band. It only needs to be slightly tight.
8. Connect the electric motor to the battery and the cotton reel should rotate.

### Discuss:

1. Which objects can you see in the room that have been invented by humans to make life easier, quicker or safer?
2. What other situations can you think of where robots are used to do jobs that are boring, repetitive or dangerous to humans?

### Useful Links:

NRICH website – a fuller outline of this activity, including supporting materials can be found here: <https://nrich.maths.org/8044>

Science Kids website – games, facts, quizzes, projects  
<http://www.sciencekids.co.nz/robots.html>



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