



## ROBOT CODING

Play this game to learn to do some simple coding.

### Overview



Learn how to use a simple code to control a robot by playing our game. Grab some scissors, a felt tip pen and our game print outs and you are ready to go.

 [Printable version](#)

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### What you'll need

- Robot game printout [here](#).
- Scissors
- A felt tip or dry wipe pen

### Duration

10 minutes or so.

### Suitable for...

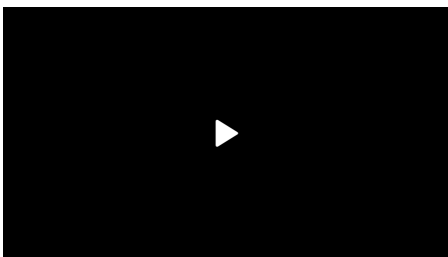
Age 3 and up.

### Safety notes

You know your children better than anyone, and you should judge whether they're ready for this activity. You might want to think in particular about:

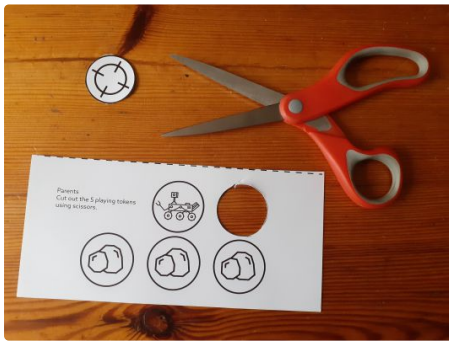
### What to do

#### Step 1



You might want to watch this story called Robots, Robots Everywhere! by Sue Fliess. Can you spot all of the ways robots help us in our everyday lives. Would you like a robot dog or even a robot friend?

#### Step 2



Print out the game and instructions. Cut out the 5 playing tokens using scissors. The robot in this game is a Mars Rover. It travels to Mars and collects samples so we can find out more about the planet.

- Supervision: watch children using sharp scissors.

### Careers Link – Robotics Engineer

A robotics engineer is responsible for creating robots and robotic systems that are able to perform duties that humans are unable or prefer not to complete. They design and build robots that help to make jobs safer, easier, and more efficient, particularly in the manufacturing industry. Robotics engineers may work in the agricultural, military, medical, and manufacturing industries, developing new uses for robots, designing improved robots for existing systems, or repairing and maintaining industrial robots.

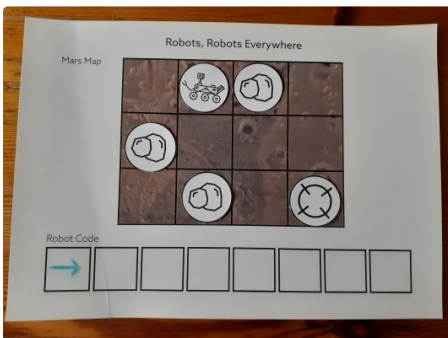
**Attributes:** resilient, curious, open-minded

### Step 3



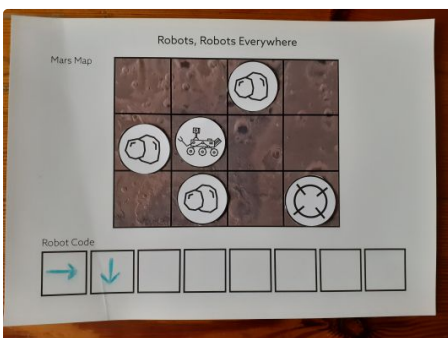
Place the robot and target tokens wherever you want on the map. Place two or three rock tokens onto the map making sure there is still room for your robot to get past.

### Step 4



You need to programme your robot to reach the target without bumping into the Mars rocks. Your robot needs to be programmed to move one square at a time. Draw an arrow in the first square of the code box to show your robot which way to move first.

### Step 5



Continue programming your robot by drawing more arrows and moving your robot until it reaches the target. Remember to watch out for rocks!

Robots, Robots Everywhere

Mars Map

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🪨		🚗	
	🪨		🚫

Robot Code

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Robots, Robots Everywhere

Mars Map

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Robot Code

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Robots, Robots Everywhere

Mars Map

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🪨			
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Robot Code

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Things to discuss

- Did you programme your robot to reach the target without bumping into any rocks?
- How many moves did you programme your robot to make?
- What happens if you put the target near to the robot? Do you need to programme your robot to make more or less moves?
- What is the largest number of moves you can programme your robot to make before it hits the target?

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## How it works

Humans use robots to do jobs that are too boring, dirty or dangerous for us to do. Robots can't decide what to do by themselves, they need to be told what to do. Robots are controlled by a computer which needs to be programmed by a human. Programming is the way that humans communicate with computers. Humans use a language called code to give instructions to the computer. The code used in the game uses arrows as the code. This told the robot where it had to move next. Visit this [BBC Bitesize page](#) to find out more about coding.

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## Other things to try

Make your own robot!



Make a model or picture of a robot using things you find around your home. You could use pens and paper to draw or screws, nuts and bolts, like in the photograph above. If you want to build a robot, you could use empty, clean food packaging, building blocks

First, decide which job you would like your robot to do. What sort of special equipment or features might your robot need? Will your robot need to move around? How will it do this? Maybe you will build a robot to solve a problem or a robot pet or friend to keep you company.

Find out more about space rovers



The NUSTEM team have written a story all about space rovers called Are We Nearly There Yet? To find out more, visit our [Family Space Explorers page](#).

