

Resource
one



Look at the resource below.



Robot

Not a robot



**Which of the pictures do you think show a robot? Which are not robots?
Are there any you are not sure about? What might the object in each picture be used for?**



Look at the resource below, which shares some examples of robots throughout time.

2000 years ago

Archaeologists and historians have found artefacts that suggest robots date as far back as 2000 years. Early mechanical robots were known as automatons, which means 'to act on one's own will' and were often made to entertain others.



Pictured above: NASA's rover named Perseverance landed on Mars

1730's

Vaucanson creates an automatic duck that can drink, eat, paddle in water, digest and excrete like a real duck.

1948-9

British robotics pioneer William Grey Walter creates Elmer and Elsie, autonomous machines that mimicked lifelike behaviour with very simple circuitry.

1973

The AI department in Edinburgh, UK, shares Freddy II, a robot that can assemble objects automatically from a heap of parts.



Pictured above: robots in the car manufacturing industry.

2021

NASA's rover, named Perseverance (pictured left) lands on Mars. It's main job is to seek signs of ancient life and collect rock and soil samples for possible return to Earth.

2010

PR2 robots by Willow Garage are created to complete household tasks such as wash dishes, clean up, fold towels and get drinks from the fridge.

1994

A robot called Dante II, built by scientists from Carnegie Mellon University collects samples of volcanic gases from the interior of the Mount Spurr volcano in Alaska.

Did you know?

The first use of the word 'robot' came from a play, Rossum's Universal Robots, written by Karel Čapek in 1920. It came from the Czech word 'Robota', meaning 'forced labour'.



**How do you think robots have changed over time?
Which robot do you think has the most value?**



Will robots make the world a better place?

A robot named Ai-Da has become the first robot to speak in the House of Lords in Westminster, London. The robot spoke to the House about Artificial Intelligence (AI) and the future of arts, fashion, and music. Ai-Da's creators hope that she will give the House of Lords and others a fresh perspective on how technology can be used to create art in the future. Built in Cornwall by Engineered Arts, Ai-Da was then programmed by an international team and named after English mathematician, Ada Lovelace.



- Look at this week's poster image and talk about what you can see. Explain that the robot on the poster is an artist and has recently spoken to people in government about the future of robots in areas like fashion and art.
- Talk about your own understanding of what a robot is, have you ever seen one in action? Do you consider interactive speakers like Amazon's Echo or Google Home devices as robots?
- Read through the information found on the assembly resource. Share your thoughts on robots producing art. What other creative things do you think robots might do next? E.g., dancing, writing, stories etc.
- Talk about what you imagine the future of robots might be? What kinds of things do you think they might do? What would you like them to be able to do?
- Make a list of some pros and cons of robots. Do you think there should be more or fewer robots around?
- Watch this week's useful video. What do you think about Ai-Da's speech? Why do you think she was asked to speak?

Reflection

Robots, like many other technologies, have made parts of our lives easier and more efficient. However, it's important to understand their limitations and understand the difference between robots and real life.



KS1 focus

What is a robot?



- Write the word 'robot' on the board. What do you think a robot is? What do you know about robots? Do you have any robot toys at home? Have you read any books or seen any films that feature robots?
- Look at resource 1. Which of the pictures do you think show a robot? Which are not robots? Are there any you are not sure about?
- Focus on the image of the car. Explain that a car is a vehicle used to transport people. Usually, a person operates the car so we would not describe this as a robot. However, there are some cars that are robotic or self-driving. They use technology to sense their surroundings.
- Explain that a robot is a machine that is usually programmed by a computer. It can carry out a range of actions automatically, which means with very little or no help from humans. Discuss some of the jobs robots help us do e.g., exploring space, manufacturing cars. Are there any jobs you would like a robot to be able to do for you?
- Thinking back to some of the robot toys you may have at home or school (like the Lego robot on resource 1), which do you think are actually robots and which are models of robots?

Reflection

There are many different types of robots that carry out a range of actions automatically. Many robots have been designed to help us and make our lives easier.



KS2 focus

How has the use and development of robots changed over time?



- Discuss your experience of robots. Have you ever used a robot or seen one in action? Are robots something that interest you?
- Look at resource 2, which shares some examples of robots throughout time. How do you think robots have changed over time? Which robot do you think has the most value?
- For each robot mentioned on resource 2, discuss what its function is. Do you think robots have become more useful to humans over time? Do you think robots in the future will be more useful and helpful to humans? What jobs or functions do you imagine they can complete?
- Not everyone agrees on the definition of 'robot'. Some people view machines, such as automated looms, introduced during the Industrial Revolution as robots; others believe the machine needs to be controlled by a computer or resemble a human to be a robot. What is your definition of a robot?
- The first use of the word 'robot' came from a play called Rossum's Universal Robots. Have you read any books or watched any films that feature robots? Are the robots depicted as good, evil or both?

Reflection

Industry, science and technology continues to develop and advance. New discoveries, including the use and function of robots, are happening all the time.



KS2 follow-up ideas

Option 1

There are many fiction stories and films that include robots e.g., The Iron Giant, Wall-E, Star Wars, Transformers. Create your own fictional robot character. Think about:

- Describe what your robot looks like.
- How big is it?
- Can you describe the way it moves?
- Is it good or evil?
- What is its main function?
- Does it have a name?
- How does it communicate?
- What sounds or noises does it make?

Challenge – create a narrative featuring your robot as one of the main characters!

Option 2

Use robots to inspire a dance! Work in small groups to choreograph your own robot routine. Create four robot movements, each for eight beats. Include some of the following in your dance:

- Different levels (some moves up high, some down low).
- Different directions.
- Unison (everyone in the group performs the move at the same time).
- Cannon (everyone in the group performs the move one after the other).

Practise and refine your dance considering timing and making sure everyone is synchronized. You could perform your dance to others and ask them to evaluate your routine and performance.



KS1 follow-up ideas

Option 1

Use this opportunity to explore programming your floor robot (e.g., Bee-Bot or Blue-Bot). Programme the floor turtle to complete the following:

- Move in a straight line.
- Turn left.
- Turn right.
- Turn clockwise a quarter turn/a right angle.
- Turn anti-clockwise half a turn.
- Create your own sequence of instructions (algorithms) and enter them.

Challenge – can you programme your floor turtle to draw a number 3?

Option 2

Design and make your very own junk model robot! Begin by looking at some images to inspire you (use the images below or internet search 'junk model robot'). Think about:

- What junk materials will you need? Cereal boxes, kitchen rolls, sweet packets?
- How will you attach your junk materials together?
- How will you decorate your junk model robot? Will you need any other items to help you do this?
- What will you call your robot?



@KirstycMartin
Twitter



@LSEATBelmont
Twitter



@GHDDigiteam
Twitter



This week's useful websites

This week's news story

<https://bit.ly/3CTpNn4>

This week's useful video

AI-Da's speech
<https://reut.rs/3g861eY>

This week's Virtual Picture News

www.picture-news.co.uk/discuss

This week's vocabulary

Artificial Intelligence

A type of computer technology, which is concerned with making machines work in an intelligent way, similar to the way that the human mind works.

The robot spoke to the House about **Artificial Intelligence (AI)** and the future of arts, fashion, and music.

Creative

Involving the use of the imagination or original ideas to create something.

What other **creative** things do you think robots might do next?

Efficient

Working or operating quickly and effectively in an organised way.

Robots, like many other technologies, have made parts of our lives easier and more **efficient**.

Interactive

Allows direct communication between user and machine. Do you consider **interactive** speakers like Amazon's Echo or Google Home devices as robots?

Limitations

What is possible or allowed. However, it's important to understand their **limitations**.

Perspective

A particular attitude towards or way of regarding something; a point of view.

Ai-Da's creators hope that she will give the House of Lords and others a fresh **perspective** on how technology can be used to create art in the future.