



Teacher Edition

AlphaWorld

Written by Rod Rees

Robots



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How to use this book

The AlphaWorld teacher editions support teachers as they guide children's reading and thinking during one or more guided reading sessions. Teachers can observe children as they read and choose from the given suggestions to suit individual needs.

Before reading

Setting the context, front cover and title page:

The suggestions help teachers to set the scene and prepare children for reading the book. Prompts help to determine children's prior knowledge. Where necessary, background information is provided. Teachers are encouraged to check that children understand the vocabulary listed and to discuss the meanings and/or the structures of these words. Previous experiences with similar text types may also be discussed.

During reading

Predict, Read, Reflect:

Questions encourage children to engage with the text by making predictions. The children then read a section of the text and reflect on what they have read. The focus is on the content, language and text features of the book.

Observe and support:

Prompts help teachers to focus on the strategies children use as they read. Teachers can then select from and adapt the suggestions according to the needs of the individual child. The suggestions aim to develop a child's reading abilities. Interruptions to the child's reading should be minimal.

After reading

A selection of reading and writing activities:

The last pages of the teacher edition provide follow-up activities and include the assessment focus.

Selected text features

- Question boxes on selected pages
- Clear diagrams explain some concepts

Vocabulary

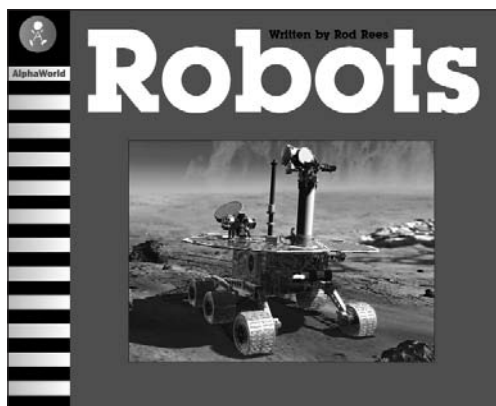
assemble, computers, dangerous, dishwasher, explorers, flexible, humans, information, instructions, machines, metal, operations, patient, photographs, plastic, programmed, respond, robots, robotic, scientists, sensor, suction

Setting the context

Tell the children that they are going to read a factual book about robots. Have them work in pairs to list as many questions as they can think of that might be answered by reading this book. Then, as a group, compile a list of these robot questions on a chart.

Background information

This book explores the concept that robots are machines that perform tasks on their own. Robots can follow instructions and perform tasks, but they can only do what they are programmed to do, they cannot think for themselves. The text shows how robots are used around the house, in the workplace and for fun.



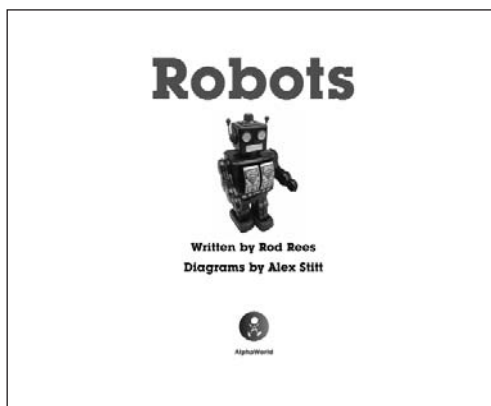
Front cover

Show the front cover.

Read the title and author together.

What can you see on the front cover?

What sort of robot do you think this is?



Title page

Turn to the title page.

What do you notice about this robot? What job do you think it does?

Point out the name of the author and the person responsible for the diagrams in this book.

Predict

*This is the contents page. What is a contents page?
Let's read through it together to find out what this book is about.*

Discuss any words or concepts that the children find difficult to understand.

Turn to page 4.

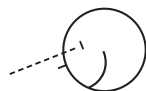
This is the introduction. It introduces us to what we will read about in this book. It says that there are robots everywhere in the world today. Look at the photos of the robots on these pages. Are they all photos of robots? Why do you think so?

Read to the end of page 5.

Reflect

How is this contents page organised?

Do all robots look like people? Why do you think so?



Observe and support

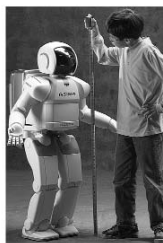
Can the child use the photographs to interpret the information contained in the text?

Can robots move around? How do you know? What can you see in the photos that help you to know this?



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Introduction

There are robots everywhere in our world today.

Robots are machines that are programmed to work by themselves. They have computers that tell them what to do.

Robots do work that is boring, difficult or dangerous.

Some robots are made to look like people, but most robots don't look like people at all. Robots are usually covered in plastic or metal, and they come in all shapes and sizes.

There are robots that can move around, but others stay in the same place all the time.

Predict

The heading on this page is 'Robots around the house'. It says that some of the machines we use around the house are robots.

Point out the diagram on page 7. Read through it together and discuss how the different robots identified work by themselves.

Why do you think people use robots?

Turn to page 8.

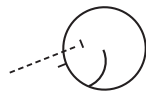
This page has the subheading 'Robots inside the house'. It says that a dishwasher is a robot. What can a dishwasher do by itself?

Read through the diagram on page 9 together. Note how each step follows the previous one until the cycle is finished. Point out how the parts of the dishwasher are labelled.

Read to the end of page 9.

Reflect

Read and discuss the question boxes on pages 6 and 8.



Observe and support

Can the child explain how a dishwasher works using the diagram on page 9 to help?

Tell me in your own words how a dishwasher works. You can use the diagram to help you. What is the first thing that happens? What is the last thing that happens?

Robots around the house

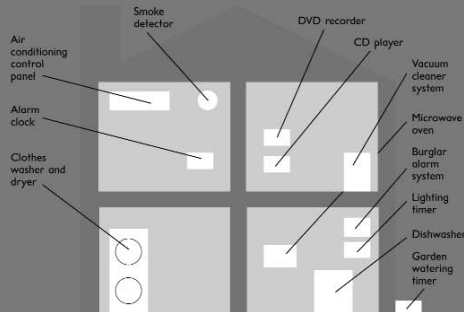
Some of the machines we use around the house are robots. If a machine is programmed to work by itself it is a robot. When you use your DVD to record a television show, you are using a robot.

We use robots to do work we don't want to do, or don't have time to do ourselves. Robots save people time and energy because they can work by themselves.

Do you think there will ever be a robot that can do the shopping?



Robots in your house



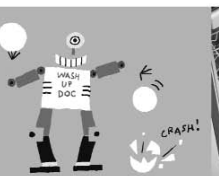
Robots around the house

Robots inside the house

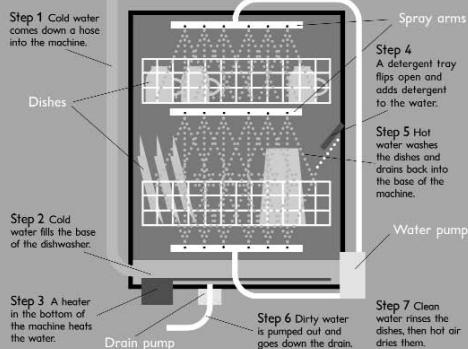
A dishwasher is a robot. It can wash and dry the dishes by itself. A dishwasher knows what to do because it has been programmed to carry out all the steps needed to wash dishes.

When a dishwasher is turned on, it starts to wash the dishes. When one part of the job is finished, it does the next part of the job. It keeps doing this until the cycle has finished and all the dishes are washed and dried.

Do you think there will ever be a robot that loads and unloads the dishwasher?



Inside a dishwasher



Predict

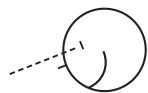
This page contains information about robots outside the house. It says that swimming pools need to be cleaned often and using a pool-cleaning robot makes the job easier. Why would it be easier for a robot to do this job?

Read through the diagram on page 11 and point out the arrows and labels that help interpret it.

Read to the end of page 11.

Reflect

Let's read the question box together. Do you think there will ever be a robot that teaches people how to swim?



Observe and support

Can the child explain how a pool-cleaning robot works by reading the diagram on page 11?

What does a pool-cleaning robot do? How does it work? Why does it make the job of cleaning a pool easier?

Robots around the house

Robots outside the house

Swimming pools need to be cleaned often. Cleaning a swimming pool takes a person a long time and can be difficult and boring. But using a pool-cleaning robot that can do the job by itself makes it much easier to keep a pool clean.

A pool-cleaning robot can do what a person cannot do — it can stay under the water all the time. When the robot is turned on it can clean all the hard-to-reach places of the pool.

Do you think there will ever be a robot that teaches people how to swim?



A pool-cleaning robot

A robotic swimming pool cleaner creeps around the bottom of the pool sucking up dirt.

Top view of robot

Suction holds the big flat, soft head to the pool floor and walls.

Filtered water is returned to the pool.

Filter Pump

Side view of robot

Water and dirt are sucked up into the handle and then into the flexible hose.

Water and dirt are sucked out of the pool and pass through the pump into the filter.

Predict

This page has the heading 'Robots in the workplace'. What is a workplace?

Look at the photos on this page. What are some jobs that robots can do in the workplace?

Turn to page 14.

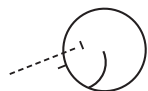
This page has information about robots making cars. There are different robots for all the tasks that are done to make cars. What do you think these different robots would do?

Read to the end of page 14.

Reflect

What are some of the jobs that robots can do in the workplace?

Do robots that work in car factories ever stop? How do you know? Are people still needed to work in factories? Why?



Observe and support

Ask one child to read aloud to you while the others are reading silently.

Can the child read the text fluently?

Model reading a passage of the text to the child.

Have the child read it with you.

Can you read it like I do?

Have the child read the text alone.

Robots in the workplace

Robots are used in many workplaces. They can be programmed to make all kinds of things and to do many different tasks.

Robots are used in factories to put things together. They can be used to make cars and trucks. Robots can help perform operations in hospitals, and they can collect information in space and deep under water.



Robots in the workplace

Making cars

There are different robots for all the tasks that are done to make cars.

One robot puts on the car doors, another robot puts in the windscreen, and a different robot puts in the steering wheel. Robots assemble the parts for the car engine. Robots also spray-paint the cars. They are not harmed by dangerous paint fumes in the air.

People still need to work in factories to make sure nothing goes wrong, but robots can work 24 hours a day, seven days a week.

Do you
think robots
will ever
drive cars?



Predict

Read the heading and subheading together.

Robots are used in medical operations. During the operation the doctor uses a remote control computer to tell the robot what to do. Look at the photo of the medical operation. How do you think the doctor can see inside the patient's body?

Turn to page 10.

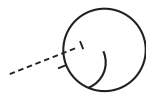
Robots can be explorers. Sometimes scientists send robots to explore places that are too difficult or dangerous for people. Where would these difficult and dangerous places be?

Read to the end of page 18.

Reflect

Why do doctors use robots in medical operations? How does the doctor control what the robot does?

Do you think robots will ever explore the sun?



Observe and support

Can the child identify a question mark and explain what it is used for?

Can you show me a question mark? What does it tell you when you are reading? How does your voice sound when you read a question?

Robots in the workplace

Robots in hospitals

Robots are used in medical operations. During an operation the doctor uses a remote control computer to tell the robot what to do. A tiny robotic arm can get to hard-to-reach parts of the human body much more easily than a person can.

Doctors sit near the patient and control the robotic arms that do the work. A camera allows the doctor to see inside the patient's body.

Using a robot to do a medical operation means the patient needs fewer cuts and there is less bleeding. The patient also gets well more quickly, suffers less pain and has smaller scars.

Do you think robots will ever replace doctors and nurses?



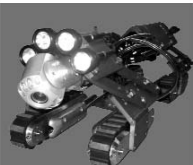
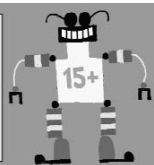
Robots in the workplace

Robots in dangerous places

Robots can be explorers. Sometimes scientists need to explore places that are too difficult or too dangerous for people. Scientists can send robots to these places to gather the information they need.

Robots can go deep under water to explore the bottom of the ocean. They can go into volcanoes to collect rocks or take photographs. Robots are often sent into space to gather and send information back to Earth.

Do you think robots will ever explore the sun?



Predict

The heading here is 'Robots just for fun'. Robots can be used for fun.

Look at the photos on this page and read the caption that accompanies them.

There is also a robot dog that behaves like a real dog. What does that mean? What might it be able to do?

Turn to page 22.

New kinds of robots are being developed all the time. A robot named Roomba has been programmed to clean carpet and other floors in the house all by itself. What else might be special about Roomba?

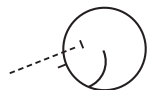
Read to the end of page 22.

Reflect

Why would a robot dog be easier to look after than a real dog? Which one would you prefer?

Tell me about some other new robots that have been developed.

Discuss the question box: Do you think there will ever be a robot that looks exactly like a human?



Observe and support

Can the child use the information contained in the photographs to help interpret the text?

What did you learn about robots by looking at the photos on pages 20 and 21?

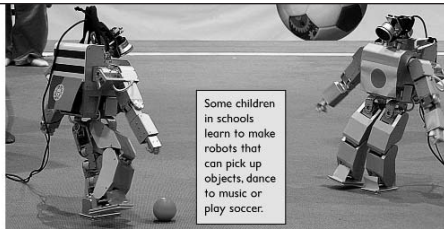
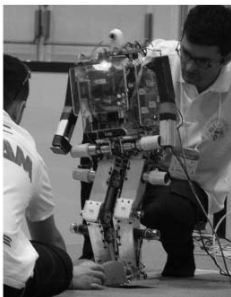


Robots just for fun

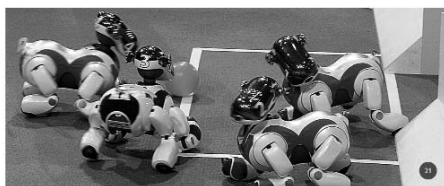
Robots can be used for fun.

There is a robot dog that behaves like a real dog. It can sit, beg, roll over, shake its head and wag its tail. The robot dog has a sensor inside so that it can respond when its owner talks to it. A robot dog doesn't need to be fed or walked, and it doesn't make a mess.

Many toys are robots. When these toys are turned on they can light up, make a noise, or move around.



Some children in schools learn to make robots that can pick up objects, dance to music or play soccer.



New robots

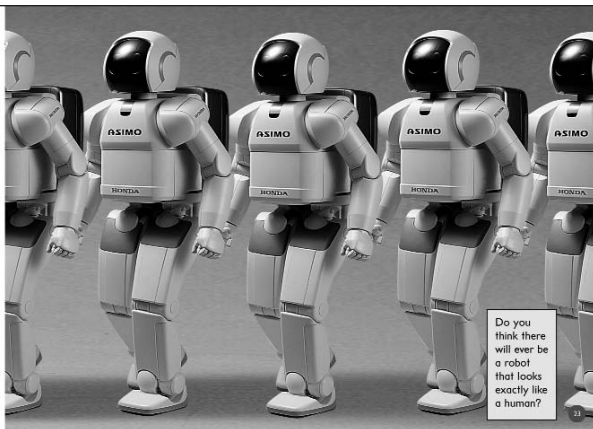
New kinds of robots are being developed all the time.

A robot named Roomba has been programmed to clean carpet and other floors in your house all by itself. Roomba is smart enough to move around tables, chairs and other furniture. Roomba can even clean under beds.

There is also a robot that people can wear like a jacket. This robot makes the person wearing it stronger. Nurses can wear this jacket to make them strong enough to lift hospital patients out of bed and into a wheelchair.

There are robots that look and act like humans. Some scientists are even trying to make a robot that can respond to how people feel by smiling, sulking, winking or blushing.

Toy robots by Honda



Do you think there will ever be a robot that looks exactly like a human?

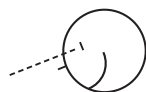
Predict

*This is the conclusion. What does a conclusion do?
It says that robots can only do things they have been
programmed to do. What else can robots do?*

Read to the end of page 24.

Reflect

Why are robots useful machines?



Observe and support

Can the child interpret the text?
Why can't robots think for themselves?

Conclusion

Robots can only do things they are programmed to do. Robots can follow instructions and work by themselves, but they can't think for themselves.

Robots are useful for doing difficult or dangerous jobs. They can also do boring jobs that need to be done over and over again.

Robots are very useful machines.



After reading

Being a meaning maker

Encourage the children to support their answers with evidence from the book as they discuss these questions:

What are robots?

What sorts of work do robots do around the house?

What sorts of work do robots do in the workplace?

Do you think robots will ever drive cars?

Do you think robots will ever replace doctors and nurses?

How are robots used for fun?

What would you like a robot to be able to do? Why?

Being a code breaker

Explore the following language features:

- Use of commas to separate lists of ideas in a sentence
- The rhyme /ot/: not, robot, robotic, rot, slot
- Use of scientific language specific to robots: assemble, camera, computers, control panel, information, machines, photographs, programmed, robotic, scientists

Being a text user

Refer back to the chart of questions generated prior to reading. Have the children compare the information in the book with the questions posed on this chart. Invite the children to change and add to the chart.

Which questions were answered by reading this book?

Which questions were not answered?


What questions do you still have about robots? How could they be answered?


Being a text critic


The author of this book thinks that robots are very useful machines.

What do you think? Why?

Responding to text

 Ask the children to re-read a specific section of the text, for example, the third paragraph on page 22 that describes the ‘jacket’ robot that can assist nurses to lift patients. They could then draw a detailed picture of it to illustrate the information discovered about this robot in the text.

 The children could write sentences about important facts about robots.

 List the scientific language specific to robots found in the text. Children could select one of these words and explain its meaning. Their work could then be compiled into a robot index to accompany the book.

Writing links

Model drawing a design of a robot. After drawing the design, add labels and captions to explain its purpose and how it works. With a partner the children could draw their own design and provide information about it on labels and captions.

The children could write a narrative text about their own imaginative robot.

Discussing the following questions could assist them to plan their piece of writing.

What does your robot look like?

What can it do?

What trouble does it get into?

How is this problem fixed?


How will your story begin? How will it end?

What will your story be called?


Possible assessment focus

Can the children:

- explain a concept using the diagram to assist them?
- share extra information gained from the photographs?

 whole text activity

 sentence activity

 word activity

Robots

Topic: Technology/Inventions

Curriculum link: Study of Society

Text type: Report

Reading level: 22

Word count: 884

Vocabulary: assemble, computers, dangerous, dishwasher, explorers, flexible, humans, information, instructions, machines, metal, operations, patient, photographs, plastic, programmed, respond, robots, robotic, scientists, sensor, suction

Possible literacy focus:

- Understanding how to read diagrams.
- Interpreting the information provided in the pictures.

ESL possibilities:

- Understanding how the headings and subheadings are related.
- Responding to the questions in the text.



Summary

This book discusses robots, which are very useful machines. They follow instructions and work by themselves. There are lots of robots in your house. Can you guess what they are?

AlphaWorld



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