

Robots and Artificial Intelligence

Artificial Intelligence is no match for natural stupidity.
Unknown



Starting Out

Things a Robot Might Do

1. Put these words into the correct box.

accurate
able to work in dangerous places
efficient
get bored
get tired

make mistakes
reliable
strong
think creatively
understand human feelings

A robot is

A robot does not

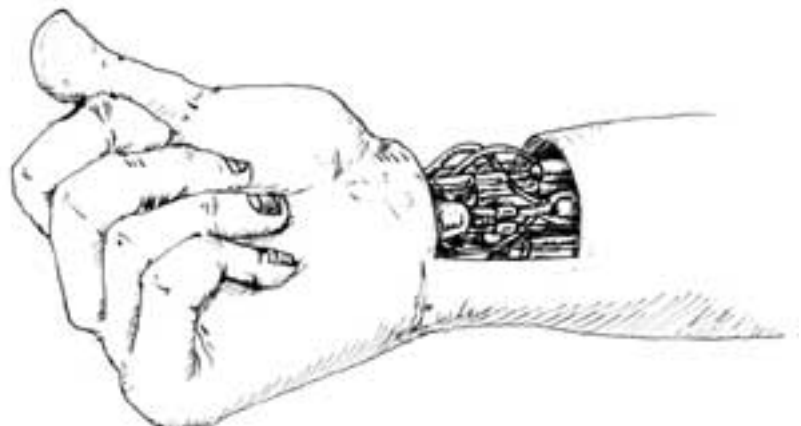
2. What could a really intelligent robot do for you? Add your own ideas to this list.

A robot could ...

cook my dinner.

chat with me when I'm bored.

3. Share your ideas with a partner.





1. Listen to the conversations between Ms. Oldfashioned and Mr. Lazybones and write the number of the conversation next to each phrase.

<input type="checkbox"/> cook meals	<input type="checkbox"/> get stolen or damaged	<input type="checkbox"/> would really annoy me
<input type="checkbox"/> chat to me	<input type="checkbox"/> be boring	<input type="checkbox"/> cooking is fun
<input type="checkbox"/> go shopping	<input type="checkbox"/> damage the furniture	<input type="checkbox"/> talking to people is more interesting
<input type="checkbox"/> clean my house	<input type="checkbox"/> not understand your tastes	<input type="checkbox"/> robots are just expensive toys

Ms. Oldfashioned: What do you think a robot would be useful for?

Mr. Lazybones: Hmm, it could _____. That would be great.

Ms. Oldfashioned: Yes, but it might _____.

Mr. Lazybones: I guess that's possible.

Ms. Oldfashioned: I think that _____.

2. Close your book and shadow the conversations as you listen.

3. Practice the conversations with your partner. Use the Look, Cover and Say technique.



Reading 1

Robots at Home and at Work

1. Before reading, decide whether you agree (A) or disagree (D) with each of these statements.

Robots have been used in industry for many years.

The factory of the future will have no human workers.

Japan has more robots than any other country in the world.

Robots will cause people to lose jobs.

Robots are more intelligent than many animals.

Humans will always be more intelligent than computers and robots.

	Your Opinion	Writer's Opinion
.....	()	()
.....	()	()
.....	()	()
.....	()	()
.....	()	()
.....	()	()

2. Now read to find out whether the text agrees (A) or disagrees (D) with each statement. Write (N) if it does not give enough information to decide.

Robots have been important in industry for many years. Japan is a world leader in robotics and there are 400,000 robots working in Japanese factories, more than any other country in the world. The European Union has about 300,000 robots at work, mainly in the automobile industry. In 2003, industry around the world ordered eighty thousand robots. Robots are not just becoming more common—they are also becoming more versatile. They are now at work in industries like entertainment and food processing. Robots increase efficiency, but many people are worried that human workers will lose their jobs. Other people argue that robots can do dirty, dangerous, or boring work, and that workers will move into better jobs.

Artificial Intelligence (AI) is also developing quickly. One robot toy maker says that his robot toys are more intelligent than many animals. He is certainly correct. Many machines are already smarter than humans in their area of specialization. Computers can now play chess, explore Mars and analyse financial markets far better than most humans. AI doesn't necessarily work in the same way as human intelligence, but machines will eventually be more intelligent than humans in most ways. The use of AI brings great hopes and possibilities, but also dangers and risks. Someday in the future, will machines try to kill all humans as they do in the Hollywood movies *Terminator* and *The Matrix*?

3. Check your answers with a partner.



1. Circle the words that you hear.

accurate	versatile	coal mining	more competitive	robotics
automobile industry	artificial intelligence	efficient	dangerous	repetitive
maintenance	installing robots	virtual reality	bored	electronics

2. Listen again and complete these sentences.

Robots have some important advantages over people.

- A) They never get _____ .
- B) They can do work that would be _____ for humans.
- C) Robots do not get _____ .



3. Listen again and write an industry which makes use of each advantage A, B, and C.

- A) _____ B) _____ C) _____

4. Check your answers with a partner.



1. Read the questions below and think about your answers.

What is the most useful thing that a robot could do for you?	Are you interested in virtual reality?
Do you think that robots take jobs away from people?	Will computers be more intelligent than people someday?

2. Listen to the conversations and write Sarah's answers to these questions.

What is the most useful thing a robot could do for her?

Why will companies buy more robots?

Why does she want to go on a virtual tour?

What are the three types of intelligence that she names?

3. Turn to page 101. Listen again and fill in the missing words in the listening script.

4. Close your book and shadow the conversations as you listen.

5. Use the questions in number 1 to have a conversation with your partner. Before you start, write your "English Target" for today on page 96. You can extend your conversation using the conversation questions on page 97. Remember to use the conversation strategies you have learned.

6. Write your "English Used" in the chart on page 96.



1. Write the answers to these questions as you read the text.

What was Pathfinder doing on Mars?

What did Slick Willy do?

How do robots interact with their environment?

Why is Amadeus like the writer's servant?

Which were his favourite robots at the conference?

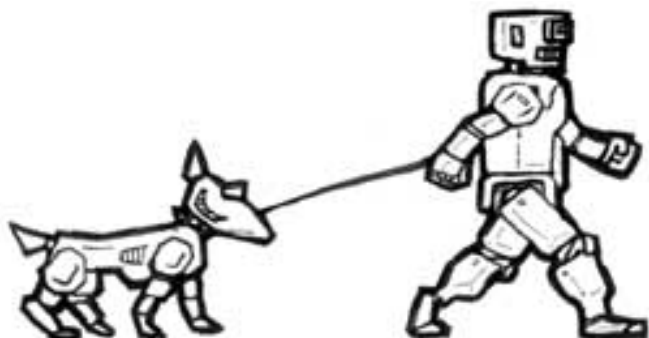
I was really impressed when I saw the NASA Pathfinder robot moving around Mars. There it was, millions of miles away, not a person in sight, and it was happily picking up rocks for analysis. However, thinking about Pathfinder a little more deeply, I came to the rather dismal conclusion that Martian rocks don't really provide much benefit to the average person like me and you. Of course, having one on the mantelpiece would be a good dinner-party conversation piece, but the novelty would wear off pretty quickly and people would start looking for the the dessert trolley again. Even having the Pathfinder in the dining room wouldn't be so great. People might lose their appetite if it started picking up my wonderful strawberry mousse for analysis.

With that in mind, I enjoyed visiting the national conference of the American Association for Artificial Intelligence. This conference featured some really smart people and some robots who may have been even smarter. For example, one robot, Slick Willy, followed instructions to fetch cups and plastic fruit. Yes, I know that plastic fruit isn't the type of cuisine that you expect to find at an academic conference, but it was probably chosen to match the taste of the coffee. Actually, it seems that artificial fruit was used because real fruit is still too difficult for Willie. He doesn't always realize his own strength and your fruit could end up as fruit juice. Still, that would make a pleasant alternative to the coffee.

Willie was not alone at the conference. A total of 20 design teams had programmed their robots to move around the room collecting coffee cups, serving snacks and telling jokes. I'm not too sure about robotic humour, but having robots as servants certainly seems like an excellent idea. It's so hard to get decent hired help these days. However, Willie wouldn't fetch me any plastic fruit until I typed instructions into the keyboard on his head. As he is much smaller than me, this makes me feel as if I am talking down to the servants. Robots see with video cameras, think with laptop computer brains, and feel by using a combination of sensors. They range in size from about 30 centimetres to 1 metre.

Another of my favourite robots was Amadeus. I didn't see him playing the piano or composing any operas, but he seems pretty proficient at finding dirt. He was described as a vacuuming robot, but this was not quite accurate. He did a thorough job of finding dirt and then stood over it saying, "I've found a mess." That reminds me of another servant that I had many years ago who loved finding work to do and then avoiding it. In a few more years, just like my servant, Amadeus may decide to give up work altogether and sit around the kitchen eating cookies all day.

Even if Amadeus couldn't play the piano, some did a rather entertaining dance routine. I'm more impressed by their display than the ones that become available in the shops, I shall definitely buy a few. Now, where did I put that cookie recipe



2. Check your answers with a partner.

Debate

Benefits and Dangers

1. Give three arguments for and three arguments against the motion that: *Robots and Artificial Intelligence will make our lives better.*

For	Against

2. Take one side of the debate and try to persuade your opponent(s) that your argument is correct.

Sound Bytes

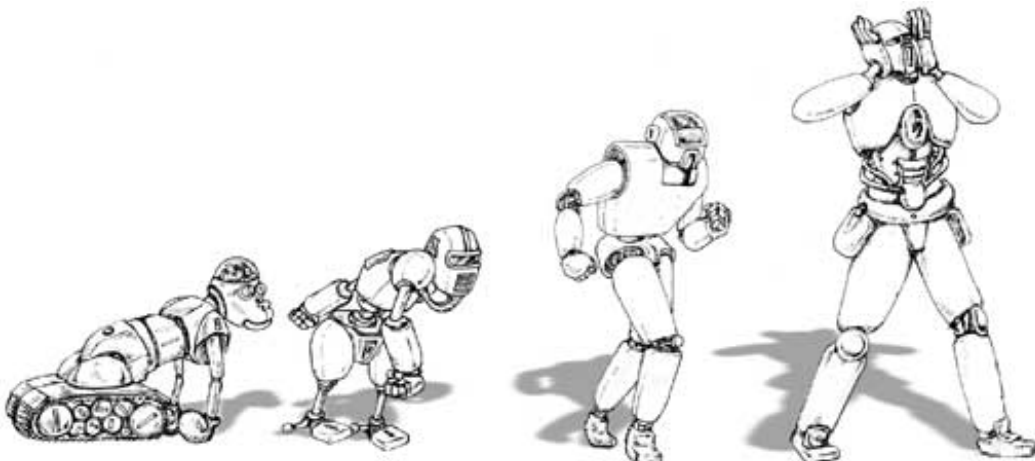
T: 15

- Listen to the four conversations and decide if each statement is true (T) or false (F).

1. _____ Marvin wants a robot to cook for him.
_____ Gaye disagrees.
2. _____ Marvin thinks that computers will be more intelligent than humans in 20 years.
_____ Gaye says that computers are already more intelligent than some humans.
3. _____ Marvin says that we need to be careful not to let computers take over the world.
_____ Gaye did not enjoy the movie *The Matrix*.
4. _____ Gaye wants a personal robot.
_____ Marvin does not want a personal robot.

Writing

- Use the ideas from this unit and other information to write a short composition on the topic *Robots and Artificial Intelligence*. Use the checklist on page 122 to check your work.





1. Learn about problems with robots by asking your partner these questions.

Why will robots become more common?

What is one limitation of robots?

What is the other limitation?

2. Find the answers to your partner’s questions in the text.

The Three Laws of Robotics

The word “robot” was first used in a play in 1921. It had a simple idea: Man created robots and then robots killed Man. The writer Isaac Asimov was one of the first to think about the issue more deeply and to seriously consider the role of robots in society. He became worried that humanity was unprepared for robots becoming a part of society in the future. In 1942, he wrote his three Laws of Robotics:

1. A robot may not injure a human being or allow a human being to come to harm.
2. A robot must obey the orders given it by human beings, except where such orders conflict with the First law.
3. A robot must protect itself as long as such protection does not conflict with the First or Second laws

3. Now find another student A and check his memory by asking the questions again.

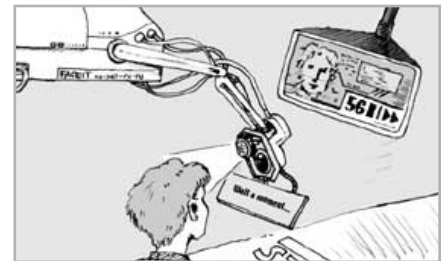


Research and Presentation



1. Before listening to the presentation, try to guess the missing words. Then listen to check your answers.

customer	recognize	forgets	second
future	programmed	meets	words
hour	predict	song	important



Good afternoon. Today, I would like to talk about face recognition technology.

Face recognition technology is already becoming an _____ part of security at airports around the world. It allows machines to _____ criminals or terrorists as they pass through the airport. In the next few years, I _____ that it will become more widely used throughout our cities. For example, your supermarket may recognize you and greet you by name when you go to buy your groceries.

Face recognition technology will also be important for robots of the _____. If a robot is provided with face recognition technology, he will be able to recognize you when he sees you. This will allow the robot to help you in many different ways. For example, a robot at a bar could instantly recognize a regular _____ and bring him his usual drink.

How does face recognition technology work? When a robot _____ a person for the first time, it maps the features of the person’s face into a multi-dimensional face space. In other _____, a picture of the face is stored in digital format. All of us have different features and the computer is _____ to recognize these differences. When the robot meets a new person, he compares it to pictures of people that have already been stored. Even with thousands of stored faces, a successful match can usually be made within a fraction of a _____.

Thank you. Are there any questions?

2. Research, prepare and practice a presentation about a robot or artificial intelligence.

3. Make your presentation to the members of your group. There are some tips on page 121.

