

11 What do you think?

Making predictions

- Read some predictions scientists have made about the future. Match each one to a topic.
 - New materials and inventions
 - Computers and artificial intelligence
 - The human body and medicine
 - The human mind
 - Creatures from space
- Look at the words and phrases in *italics> in the text. Match each one to the correct definition.

 - artificial materials that have special properties because of their structure
 - something that gives a reason for believing something
 - important discovery or development*

- the smallest living parts of an animal
- parts of the human body that have a particular function
- the science of building devices from single atoms and molecules
- put something in a particular place or position
- removing people's body parts and putting them into other people's bodies
- people who give part of their body for medical use
- an experiment where a human judge engages in two conversations, one with a human and one with a machine. If the judge cannot tell which is which, then the machine will pass the trial.

Brave New World

As part of its 50th anniversary celebrations, the New Scientist magazine asked some of the world's most brilliant scientists for their predictions for the next 50 years. Here are some of the things they said:

How far will we get in 50 years? By then we will almost certainly have machines that can pass the *Turing Test* and communicate with us just as well as a human being.

– Terry Sejnowski, the Francis Crick Professor at the Salk Institute for Biological Studies

One exciting *breakthrough* in biomedicine will be the ability to produce human *organs* like kidneys and hearts for *transplants*. They will be grown by introducing human *cells* into animals, so we won't need human *donors*. But one organ we might not want to do this with is the brain. We probably won't want to put a human brain in an animal body.

– Bruce Lahn, Geneticist at the University of Chicago

Nanotechnology and *metamaterials* will revolutionize our lives. New materials and inventions are likely to be developed that no one has thought of yet.

– Nathan Myhrvold, Co-founder of Intellectual Ventures and formerly Chief Technology Officer at Microsoft

In the next 50 years we may find evidence of alien life in the frozen surface of Mars. We could also find alien life forms here on Earth.

– Chris McKay, Planetary Scientist at NASA Ames Research Center

We can already *plant* false memories into the minds of ordinary people – memories such as being lost in a shopping mall or cutting your hand on broken glass. Over the next 50 years we will probably become expert at planting more memories.

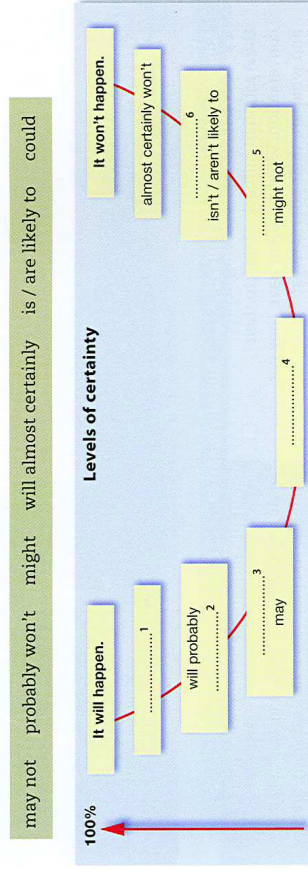
– Elizabeth Loftus, Psychologist working on human memory, University of California, Irvine

3 Work in pairs or groups. Discuss these questions.

- Which predictions do you think will come true? (Why?)
- Which predictions do you think will not come true? (Why?)
- Which prediction would you most like to come true? (Why?)
- Do any of the predictions worry you? (If so, why?)

4 Look at the text again. How sure are the scientists about their predictions? Find words and expressions that indicate they are not 100% certain.

5 Complete the diagram below with these words and expressions.



6 Read some more predictions. Do you think they will happen in the next 20 years?

Insert expressions from the chart so they express your views. Compare your answers with some other students. Do you agree?



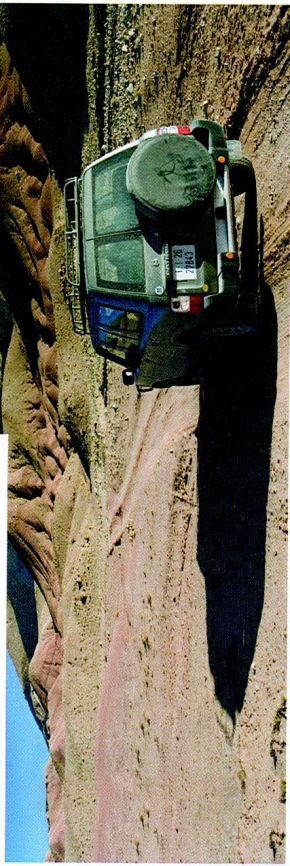
- We will all use flying cars.
- Robots will run our homes. They'll feed the cat, clean the kitchen, take out the rubbish, and check the kids' homework.
- There will be a way to slow down the ageing process, and most people will live till they are 100 or more.

- Prime numbers (invisible numbers like 3, 17, and 23) are a mystery today. The higher you count, the more difficult it is to predict the next prime. But in 20 years we will understand their secrets.
- There will be a crewed space mission to Mars. And in 50 years there will be a self-insurance colony on Mars. It will provide insurance against whatever catastrophes might occur on Earth.

- We will develop drugs which can heal and regenerate our bodies and even 're-grow' lost fingers, arms, and legs. Complete body replacement will be routine.
- Office software will be developed that has no bugs.
- There will be revolutionary changes in city and town planning. People will live in village-like communities, not in suburbs far from their workplace.
- Artificial intelligence will be very advanced and robots, not people, will make all the important scientific breakthroughs. We'll have an inexhaustible source of safe, environmentally friendly energy.
- We'll have more time to spend on our hobbies and with our families and friends.
- We will discover that most of the predictions we made today are wrong.

Weighing alternatives

- Have you ever been to a desert? Would you like to travel across a large desert like the Sahara? (Why / Why not?)



- Four people are travelling across the Australian outback. Listen to their conversation. What problem have they got and what are their alternatives?
- Work with a partner. Answer these questions.
 - What exactly is wrong with their vehicle?
 - What alternatives do they have?
 - How far is the town?
 - How long could it take for a search party to find them?
 - What do you think they should do? (Why?)

- Read a survival expert's opinion and find out if you were right. What will happen if they try to walk?

If they stay near the vehicle, their chances of survival are very good. With no water at all, people can survive for two days or more at temperatures of 50 °C. They need to find shelter and conserve energy. A very strong and experienced hiker might be able to walk 30 km a day if the ground is flat, but most people simply aren't fit enough. They will quickly become exhausted in the heat. Staying with your vehicle is the best alternative in nearly every case.

Gradable and ungradable adjectives

Some adjectives, like *tired*, *bad*, and *cold* are gradable. You can be a little *tired*, *fairly tired*, or *very tired*.

Other adjectives like *exhausted*, *terrible*, and *freezing* describe extreme conditions and are ungradable. We use more extreme words to modify them like *absolutely* or *really*.
 Absolutely *exhausted* Really *terrible*
 NOT *Very exhausted* / *terrible*

- Look at the gradable adjectives in the sentences below. Suggest more extreme adjectives you could use in their place.

- Our chances of survival are *very good* if we stay with the car.
- We'll become *very tired* if we try to walk in this heat.
- It's *very hot*.
- The water container's *very big*. We can't carry it far.
- I want something to eat. I'm *very hungry*.
- There's so much dust. I'm *very dirty*.
- The chances of someone driving by are *very small*.
- It'll be *very cold* tonight.
- But walking is a *very bad* idea.
- I'll be *very angry* if they make me walk.

- Match these ungradable adjectives to the correct phrases in 5.

freezing tiny excellent furious exhausted boiling enormous
 filthy terrible starving

- Work with a partner. Act out a conversation using the sentences in 5. **B** should agree with **A** using an ungradable adjective.

A Our chances of survival are *very good*.

B Yes, they're *excellent*.

- Read another survival problem and decide what to do. Should you stay where you are or walk?

Your six-seater single engine plane has crash landed in northern Canada. The temperature is 15° below zero and it will get even colder tonight. There's snow on the ground and fir trees nearby. You think to rescue the following items from the plane: you're about 5 km off route from the flight plan you filed, and there's a small town about 25 km to the north-east. You're all wearing winter coats, hats, gloves, and shoes. Nobody is injured. You managed to rescue the following items from the plane:

	Extremely useful	Useful	Not very useful
A large knife	☐	☐	☐
An empty cigarette lighter (no fuel)	☐	☐	☐
One space blanket per person	☐	☐	☐
A compass	☐	☐	☐
A map	☐	☐	☐
A roll of aluminium foil	☐	☐	☐
A cosmetic mirror	☐	☐	☐
A loaded gun	☐	☐	☐
One pair of sunglasses per person	☐	☐	☐
A bottle of whiskey	☐	☐	☐
A large bag of jelly bean sweets	☐	☐	☐

- Work in groups. Decide how useful the items are and compare your views with the other students. Think of different things you can do to:

- keep warm.
- create a shelter from the wind and cold.
- signal your position to rescuers.
- stop yourselves from getting hungry and thirsty.
- keep your spirits up.

- Listen to a survival expert discussing the situation and check your answers.

