Unit 11 SCIENCE AND TECHNOLOGY

GETTING STARTED

At the Science Club

1 Listen and read.

Duong, Nick, and Chau are talking with Dr. Nelson after listening to his talk about the roles of science and technology in the 21st century.

Dr. Nelson: Well, as you know, developments in science and technology are greatly changing the way we live, communicate, travel, everything …

Duong: You mean science and technology are changing our lives in every field?

Dr. Nelson: Right.

Duong: For the better?

Dr. Nelson: Mostly for the better. Science and technology also have enormous effects on economic development.

Nick: Well, my dad told me that only robots would work in factories and clean our homes in the future. Is it right, Dr. Nelson?

Dr. Nelson: Sure. And we'll have flying cars and spaceships so that we can travel faster and further than before.

Chau: So we won't have traffic jams any more?

Dr. Nelson: No, we won't. Science and technology are the keys to development in other fields too. They will certainly bring a lot more benefits to people.

Chau: And what about education? Our science teacher said that there would be no more schools: we'd just stay at home and learn on the Internet.

Dr. Nelson: That's right. Students won't go to school like now …

Duong: Wow! I hope that happens soon.

THIS UNIT INCLUDES:

VOCABULARY
Science and technology
Inventions

PRONUNCIATION
Stress in words starting with *un-* and *im-*

GRAMMAR
Future tenses: review
Reported speech: statements

COMMUNICATION
Talking about the roles of science and technology
Expressing agreement and disagreement about how science and technology can help us solve problems in the future

Objectives:

By the end of this unit, students can:

- pronounce words with the prefix *un-* and *im-* correctly in isolation and in context
- use the lexical items related to science and technology
- use the future simple and future continuous to talk about science and technology in the future
- use direct speech and indirect speech to report what people say or tell
- read for specific information about the role of science and technology in the future
- talk about the roles of science and technology
- listen for specific information about how science and technology solve some problems in the future
- write to express agreement and disagreement about the roles of science and technology

GETTING STARTED
At the Science Club

Introduction

Review the previous unit by asking Ss to call out all the forms of communication that they can remember from the previous unit. Then divide the class into two teams. Call out a form of communication, e.g., *body language*. The first group to give an example of body language gets a point, and so on.

Put the heading 'Science and Technology' on the board. Do a brainstorming session by asking Ss to suggest any words or phrases related to this topic. Accept all ideas, organise them in a word web if possible.

1 Ask Ss to open their books to Unit 11, cover the conversation and look at the pictures. T asks prediction questions:

What can you see in the pictures?

Do you know these characters?

Where are they now?

What are they talking about?…

Ss answer the questions as a class. Then play the recording and have Ss listen and follow along. Check if Ss' predicted answers match the conversation. If not, have Ss correct them.

a **Find the words in A in the conversation. Then match them to the words in B with similar meanings.**

A	B
1. developments	a. the answers
2. field	b. area
3. enormous	c. progress (n)
4. economic	d. big
5. the keys	e. money-making
6. benefits	f. help

b **Answer the questions.**

1. Where are Nick, Duong, and Chau?
2. What is the subject of Dr. Nelson's talk?
3. What fields are science and technology greatly changing?
4. What did Nick's dad tell him?
5. What did Chau's science teacher say?

c **Work with a partner. What fields are mentioned in the conversation which are affected by science and technology?**

d **Put a word/ phrase from the box in each blank.**

flying cars | economic development | field | space | the key

1. Technology in the _____ of telecommunications has developed greatly over the last decade.
2. In the future, ordinary people may travel into _____ on spaceships.
3. He said he worked very hard and that was _____ to his success.
4. An international meeting on _____ took place in Singapore last week.
5. If we had _____ now, we could solve the problem of traffic jams.

Look out!
Can you explain the difference between *science* and *technology*?

2 **Put one of the words/ phrases from the box in each gap. There is one extra.**

science subjects | technology | technique | machines | scientific progress | researchers

1. Her teacher said she was really good at _____, but she was not very good at English.
2. Advances in _____ have improved crop yields by over 30%.
3. Cancer _____ have made great progress, but many aspects of this disease need further study.
4. Scientists will be trying to invent _____ to teach children at home.
5. Thanks to _____, our world will be transformed greatly.

3 **Give the opposite of the words in brackets, using the prefix *un-* or *im-*.**

Example: necessary → unnecessary

1. This is a species of insect previously (known) _____ to biologists.
2. I don't like science fiction novels much. I think they are (realistic) _____.
3. It is almost (possible) _____ to keep up with the latest developments in computing.
4. The teacher said that accurate measurement was (important) _____ in this experiment.
5. Fortunately, the river flowing through our town is (polluted) _____.

4 **GAME:** FIND SOMEONE WHO...

Ask your classmates Yes/ No questions, using *do* or *will*. If they say 'Yes' to a question, write their names in the box. A name can be written down only once. The first person to get a name in each box is the winner.

Find someone who...

likes science subjects at school	wants to travel into space in the future	wants to become a scientist
knows a Vietnamese scientist	will go into sciences when finishing school	admires a scientist or an inventor

a Ask Ss to read the conversation again and do the exercise in pairs. Elicit the correct answers and write them on the board. Have Ss substitute the **B** words into the conversation to check that they match. Finally, explain the meaning of any complex words in Vietnamese if necessary.

Key **1.** c **2.** b **3.** d **4.** e **5.** a **6.** f

b Ss work individually to answer the questions. Ss compare answers with a partner and then discuss as a class. Have Ss say where they found the answers in the conversation.

Key:

1. They are at the Science Club.

2. It is the roles of science and technology in the 21st century.

3. Science and technology are greatly changing everything.

4. He told Nick that only robots would work in factories and clean our homes in the future.

5. He/ She said that there would be no more schools: they'd just stay at home and learn on the Internet.

c Ss work in pairs. Tell Ss to refer back to the conversation and do the task. Check their answers.

Key:

1. the economy (economic development)

2. the workplace (robots in factories)

3. the home (robots cleaning our homes)

4. travel (traffic jams)

5. education (school via the Internet)

d Have Ss do this exercise in pairs. Ask some Ss to present their answers. Confirm the correct answers.

Key: **1.** field **2.** space **3.** the key **4.** economic development **5.** flying cars

Look out!

Help Ss distinguish the two words.

- *science:* knowledge about the world, especially based on examining, testing, and proving facts
- *technology:* things and ways of doing things that are based on knowledge about science and computers

2 Tell Ss that in the box are some more words and phrases related to science and technology. Let them work in pairs. Check their work by calling on some Ss to read out their sentences. Allow Ss to write the translations next to the words.

Key:

1. science subjects **2.** technology **3.** researchers **4.** machines **5.** scientific progress

3 Tell Ss to look at the example. T may give some more. Then let them do the task by themselves. After that, they swap their answers with a partner. Correct Ss' answers as a class. Then let them repeat the words in chorus.

Key: **1.** unknown **2.** unrealistic **3.** impossible **4.** unimportant **5.** unpolluted

4 Set this up as a mingle activity. Let Ss stand up and move around with pens and paper/ notebooks to ask questions and take notes. Observe and assist where needed. Once a student has a name in each box they should sit back down. Continue until all, or most, Ss have sat back down. Congratulate the winner(s). T calls on the winning Ss to present their results to the class.

Reference: Some scientists of Viet Nam:

Võ Hồng Anh	Lê Văn Thiêm	Trần Đại Nghĩa
Hà Đình Đức	Hoàng Tụy	Phan Lương Cẩm

A CLOSER LOOK 1

Vocabulary

Look out!

We add *-er, -or,* or *-ist* to a verb or noun to form a noun indicating people.

Example: to learn → learner
to invent → inventor
science → scientist

1 **Complete the following sentences with nouns indicating people.**

1. A person who gives advice is an _____.

2. A scientist who studies chemistry is a _____.

3. A person whose job is to design things is a _____.

4. A person whose job is writing programmes for computers is a _____.

5. A marine _____ is a scientist who studies life in the sea.

2 **Write a noun from the list under each picture.**

doctor chemist physicist
archeologist explorer engineer
software developer conservationist

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

3 **Give the correct form of the words in brackets.**

1. Every day we hear about new (develop) _____ in science and technology.
2. Einstein was one of the greatest (science) _____ in the world.
3. The USA is a world leader in space (explore) _____.
4. Advances in (medicine) _____ science will help people live longer in the future.
5. There is a link between (economy) _____ development and the environment.

Pronunciation

Stress in words starting with *un-* and *im-*

When we add the prefix *un-* or *im-* (meaning 'not') to a root word, the stress of the word does not normally change.

Example: 'friendly → un'friendly
'probable → im'probable

Note: When we add the prefix *un-* or *im-* to a one-syllable word, the stress falls on the root word.

Example: fair → un'fair
pure → im'pure

A CLOSER LOOK 1

Introduction

Explain to Ss that there are three common ways of forming nouns indicating people, but don't say what they are. Write the following on the board:

to learn →
to invent →
science →

Try to elicit from Ss how these words are changed to mean a person who does these things. Now see if Ss can give some more examples. Finally, have Ss open their books and read the **Look out!** box.

Vocabulary

1 Do this activity the first time around as a quiz. Divide the class into two teams. Read out item one and ask Team A to answer. If they get it wrong, the option goes to Team B to answer. Keep a score on the board to increase the fun element. Now have Ss work individually to do the task in their books. Finally, ask some Ss to write the answers on the board. Correct their answers as a class.

Key:

1. adviser/ advisor **2.** chemist **3.** designer **4.** programmer **5.** biologist

2 Ss work in pairs and discuss what the word is for each picture. T checks as a class. For more able Ss, have pairs write the descriptions of these people in the same style as activity **1**. Then put pairs together to read out their descriptions and challenge each other to guess the person, like in the quiz in **1**.

Key:

1. chemist **2.** software developer **3.** engineer **4.** physicist
5. doctor **6.** conservationist **7.** explorer **8.** archeologist

3 T asks Ss to read the sentences and guess part of speech of the word to be filled each blank. Have Ss call out their guesses.

Ss work individually. Ask some Ss to write their answers on the board. Check their answers as a class.

Key:

1. developments **2.** scientists **3.** exploration **4.** medical **5.** economic

Pronunciation

Stress in words starting with *un-* and *im-*

Explain to Ss that the prefixes *un-* and *im-* are used to make adjectives (and adverbs) negative. Explain to them that when these prefixes are added, the stress of the new word does not normally change. Give some examples.

4 Listen and repeat the following words. Mark the stressed syllables in the words.

5 Put the words from **4** in the right columns.

oO	oOo	ooO	oOoo

6 Fill the gaps with one of the words in **5**. Listen and check, then read the sentences.

1. The teacher said this water was _____ and couldn't be used in our experiment.
2. Scientists have identified a link between an _____ diet and diseases.
3. This job would be _____ without the help of a computer.
4. Our natural resources are not _____.
5. It's no good being _____ with small children.

A CLOSER LOOK 2

Grammar

Future tenses: review

1 Put the verbs in brackets into the correct tenses.

1. By 2030 all students (have) _____ their own computers in school.
2. I can't come to your party next Friday as I (work) _____ on that day.
3. I know she's sick, but _____ she (be) _____ back to school tomorrow?
4. You (not pass) _____ your exams if you don't start working harder.
5. Whatever job you (decide) _____ to do in the future, I (support) _____ you.

2 Work in pairs. Read the following predictions about the year 2040 and say whether you think it will happen.

Example:

A: Email will completely replace regular mail.
B: I think it will certainly/probably happen. / It certainly/probably won't happen.

1. We will all be using flying cars.
2. Most people will live to be a hundred years old.
3. Robots will replace teachers.
4. The world will have one money system.
5. The Internet will replace books.

Reported speech

In direct speech, we give the exact words somebody said, and we use quotation marks. In reported speech, we give the meaning of what someone said, but with some changes and without quotation marks.

Example:

Nam: 'I want to become a robot designer.'
→ *Nam said that he wanted to become a robot designer.*

When the reporting verb (e.g. *say* or *tell*) is in the past, the verb in reported speech changes as follows:

4 Play the recording for Ss to repeat the words. Play the recording as many times as necessary. Correct Ss' pronunciation, especially the stress. Then have Ss mark the stress on the words by drawing circle above the stressed syllable.

Audio script:

unforeseen	unlucky	immature	unwise
impatient	unhealthy	impure	unhurt
impossible	unlimited	unnatural	impolite

5 Have Ss read out the words first. Then they work in groups to put the words in the right columns. Call on some Ss to write the answers on the board. Confirm the correct answers.

Key:

oO	oOo	ooO	oOoo
un'wise	un'lucky	unfore'seen	un'limited
im'pure	un'healthy	imma'ture	im'possible
un'hurt	im'patient	impo'lite	un'natural

6 Have Ss work individually to write down the words. Play the recording two or three times for Ss to check.

Key: **1.** impure **2.** unhealthy **3.** impossible **4.** unlimited **5.** impatient

A CLOSER LOOK 2

Introduction

Ss have already learned the future simple *will do* and the future continuous *will be doing*. Tell Ss that this is a review section. T may help Ss recall the form and uses of these two tenses. Also remind them of the uses of present simple and *going to* to express future actions.

Grammar

Future tenses: review

1 Have Ss work individually. Check their answers as a class. T may ask why a certain tense is used to check that Ss understand the rules.

Key:

1. will have **2.** will be working **3.** will she be **4.** won't pass **5.** decide; will support

2 Tell Ss to study the example first. Then they work in pairs to do the activity. Encourage them to talk as much as possible. Remember that there is no 'right' or 'wrong' as long as their sentences are grammatically correct. Move around the class and listen to Ss. If there is a point which everyone is confused about, bring the class back together and do a quick review of it.

Reported speech

Explain to Ss the differences between direct speech and reported speech. Go through the table carefully, using the examples to clarify the rules.

Direct speech	Reported speech
Present simple *'I like sciences.'*	**→ Past simple** *He said (that) he liked sciences.*
Present continuous *'I am staying for a few days.'*	**→ Past continuous** *She said (that) she was staying for a few days.*
Present perfect *'Nick has left.'*	**→ Past perfect** *She said (that) Nick had left.*
Past simple *'Nick left this morning.'*	**→ Past simple/ Past perfect** *She told me (that) Nick had left that morning.*
will *'Man will travel to Mars.'*	**→ would** *He said (that) man would travel to Mars.*
can *'We can swim.'*	**→ could** *They told us (that) they could swim.*
may *'We may live on the moon.'*	**→ might** *He said (that) we might live on the moon.*

Pronouns, and time and place expressions may change in reported speech:

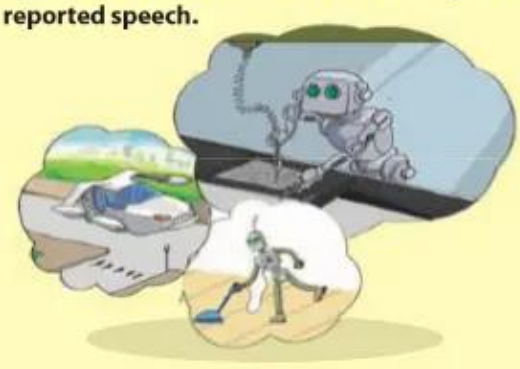
I	→ he/ she
we	→ they
you	→ I/ he/ she
now	→ then
today	→ that day
here	→ there
this week	→ that week
tomorrow	→ the following day/ the next day
yesterday	→ the day before/ the previous day
last month	→ the month before/ the previous month

Example:

'I don't have football today.'

→ He said (that) he didn't have football that day.

3 **Look at the conversation in GETTING STARTED again. Find and underline the examples of reported speech.**



4 **Complete sentence b in each pair so that it means the same as sentence a, using reported speech.**

1. a. Nick: 'I come from a small town in England.'
   b. Nick said that _____.
2. a. My friend: 'Brazil will win the World Cup.'
   b. My friend said that _____.
3. a. Olive: 'Chau, I'm leaving Viet Nam tomorrow.'
   b. Olive told Chau that _____.
4. a. David: 'Catherine, I'm unable to read your writing.'
   b. David told Catherine that _____.
5. a. Minh: 'I overslept this morning.'
   b. Minh said that _____.

5 **Change the following sentences into reported speech, using the words given in brackets.**

1. 'I didn't say anything at the meeting last week.' (He said)
2. 'This letter has been opened.' (She told me)
3. 'In 50 years' time we will probably be living on Mars.' (Tom said)
4. 'I hope we will build a city out at sea.' (Mi said)
5. 'My wish is to become a young inventor.' (Son told us)

6 GAME: MY FRIEND SAID...

Each of students stands up or comes to the front of the class. One says a sentence about himself/ herself. The other reports to the class.

Example:

3 Tell Ss to refer back to the conversation in **GETTING STARTED** and find the examples of reported speech. Focus them on the use of the verbs.

Key:

Well, my dad told me that only robots would work in factories and clean our homes in the future.

Our science teacher said that there would be no more schools: we'd just stay at home and learn on the Internet.

4 Ss work in pairs. Ask them to write down the sentences in their notebooks. Call on some Ss to read out what they have done. For a class which needs more support, have two Ss write their answers on the board. Correct their mistakes.

Key:

1. Nick said that he came from a small town in England.
2. My friend said that Brazil would win the World Cup.
3. Olive told Chau that she was leaving Viet Nam the next day/ the following day.
4. David told Catherine that he was unable to read her writing.
5. Minh said that he had overslept that morning.

5 Ss do this task individually. While they are working, some Ss may write their sentences on the board. Correct their sentences as a class.

Key:

1. He said (that) he hadn't said anything at the meeting the week before/ the previous week.
2. She told me that letter had been opened.
3. Tom said that in 50 years' time we would probably be living on Mars.
4. Mi said she hoped they would build a city out at sea.
5. Son told us that his wish was to become a young inventor.

6 This speaking activity could be daunting for some Ss, so allow the pairs to plan what they are going to say before they come to the front of the class. This should help Ss to speak with fluency and accuracy, and as naturally as possible.

Encourage them to give true sentences about themselves. Ideally, all Ss should have a chance to talk before the class.

COMMUNICATION

Quiz: Who invented what?

1 **Match the inventors in A with their inventions in B.**

A	B
Thomas Edison	the steam engine
Sir Alexander Fleming	Facebook
Alexander Graham Bell	the light bulb
The Wright brothers	penicillin
James Watt	the Internet (WWW)
Mark Zuckerberg	the telephone
Tim Berners-Lee	the airplane

2 **Work in groups. Discuss the question: Which invention is more useful?**

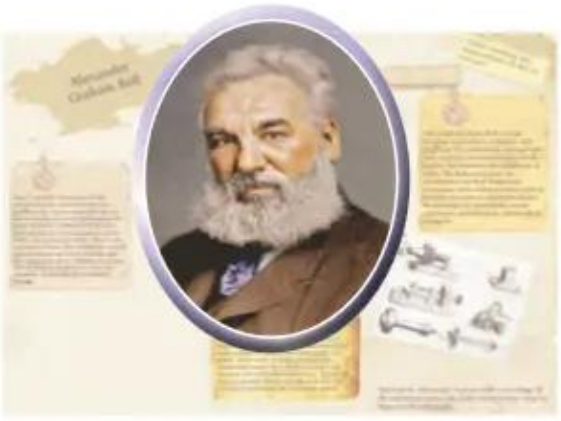
Example:

A: The invention of the airplane is very important because it has changed the way people travel and transport goods around the world.

B: You are right. But I think the invention of penicillin is more useful because it has saved lots of lives.

C: ...

3a **Ha had an interesting dream last night in which she met and interviewed Alexander Graham Bell, the inventor of the telephone.**



Ha: When and where were you born?

Bell: I was born in 1847 in Scotland.

Ha: And did you go to school in Scotland?

Bell: Yes, I went to the Royal High School.

Ha: What subject did you like best?

Bell: I always liked sciences, especially biology.

Ha: Did you go to university?

Bell: Yes, I went to Edinburgh University, and then to the University of London.

Ha: And what did you do after that?

Bell: I taught the deaf-mute in Boston, USA.

Ha: When did you invent the telephone?

Bell: Well, I invented the telephone quite by chance in 1876 when I made a mistake while doing an experiment ...

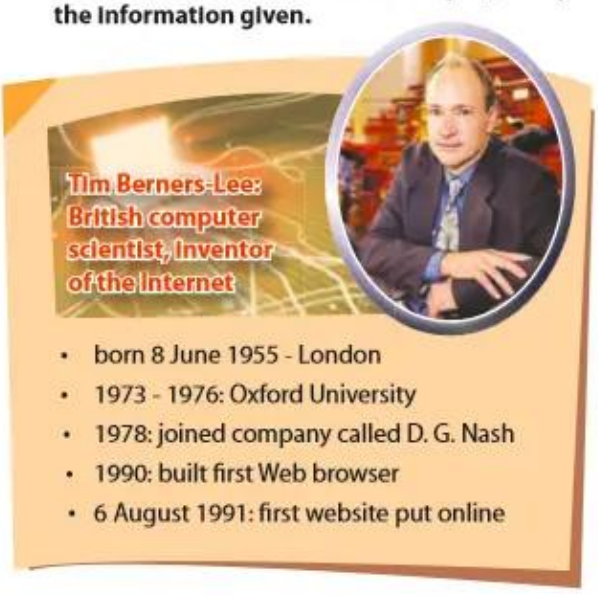
Ha: How interesting!

b **Two days later, Ha told her friend what Alexander Bell said. Now report what Ha told her friend, using reported speech.**

Example: Alexander Bell said that he had gone to the Royal High School.

1. _____.
2. _____.
3. _____.

4 **Work in pairs. One of you is a reporter, and the other is Tim Berners-Lee. Role-play, using the information given.**



- born 8 June 1955 - London
- 1973 - 1976: Oxford University
- 1978: joined company called D. G. Nash
- 1990: built first Web browser
- 6 August 1991: first website put online

COMMUNICATION

Quickly review the grammar points that are used in this section: the past simple and reported speech.

1 This activity can be done as a class competition. Ss work individually. Give them one minute to match by drawing lines from the inventors to the inventions. For increased fun, count down the final 10 seconds and then tell everyone to stop. Now have Ss swap books and mark each other's answers. Elicit the answers from Ss in full sentences, *Thomas Edison invented the light bulb*. Ask for a show of hands for those who got all eight right, then seven, and so on.

If time allows, T may ask questions about these inventors to find out what Ss know about them:

- *Are they still alive/ dead?*
- *What are they famous for?*
- *Do you know anything interesting about them?*
- *Do you know any interesting sayings by them? (Graham Bell: 'Self-education is a lifelong affair.'/ Thomas Edison: 'Genius is one percent inspiration and ninety-nine percent perspiration.' …)*

Key:

- Thomas Edison invented the light bulb.
- Sir Alexander Fleming discovered penicillin.
- Alexander Graham Bell invented the telephone.
- The Wright brothers invented the airplane.
- James Watt invented the steam engine.
- Mark Zuckerberg invented Facebook.
- Tim Berners-Lee invented the Internet.

2 Form groups of three or four Ss to discuss the inventions. Encourage Ss to talk as much as possible; this is a fluency stage, so don't worry about accuracy at this point. Move around the groups and give assistance where needed. Invite some groups to present their ideas. Other groups can add some ideas if possible.

3 Call on two confident Ss to come to the front and act out the dialogue between Ha and Alexander Graham Bell. Then put Ss into pairs to report on the conversation.

Suggested answers:

- Alexander Bell said/ told me (that) he was born in 1847 in Scotland.
- He said/ told me (that) he had always liked …
- He said/ told me (that) he had taught …
- He said/ told me (that) he had invented …

4 Let Ss work in pairs to role-play, using the information given. Walk around to observe and give help if needed. If time allows, ask some pairs to role-play in front of the class. The class then votes for the best performance.

SKILLS 1

Reading

1 **Quickly read the passages. Match the headings with the passages.**

1. Can we live longer?
2. Can we live there?
3. Future home prediction

A

Travelling to Mars might become a reality sooner than you think. Scientists are planning to send people (not animals!) to explore Mars in the near future. They believe it's the only way to find out if there is, or ever has been, life on this planet. They will explore the possibility of living there. So people may go there to live one day!

B

Scientists say that in the future people will live longer. Incurable diseases will be cured and 'bad' genes will probably be replaced. With healthier lifestyles and better medical care the average person will live to be 100 instead of 70 (for men) or 75 (for women) like today. Anti-ageing pills will also be invented to help people live longer.

C

Future homes will be located on the ocean, in the air, or underground. These homes will have advanced energy saving devices such as solar panels, solar windows, and smart home technology. Future homes will take advantage of robots to do chores such as cleaning, cooking, washing, and organising everything for their owners.

2 **Underline the following words and phrases in the passages in 1. Match each of them with its explanation.**

1. a reality	A. examine carefully to find out more about something
2. explore	B. used instead of something else
3. possibility	C. equipment that helps save energy
4. replaced	D. a thing that actually exists or happens
5. anti-ageing pills	E. something that is likely to happen
6. energy saving devices	F. medicine that can prevent ageing

3 **Answer the questions.**

1. Why are scientists planning to send people to Mars?
2. How will anti-ageing pills help people?
3. How long does an average person live now?
4. What are some energy saving devices?
5. What will home robots do in the future?

Speaking

4 **Think about your ideas about scientific advances in these fields. Look at the example and make notes.**

Advances	Advantages	Disadvantages
robots	do a lot of things	unemployment
nuclear energy		
nutrition pills		
smart phones		
space travel		

5 **Work in groups. Express your agreement and disagreement about how scientific advances can help us solve problems in the future.**

Example:

A: I think robots will help us do many boring or difficult jobs.

B: Yes. But at the same time, they may bring a lot of unemployment.

C: And they'll make us lazy and inactive.

Look out!

We use 'at the same time' to introduce a contrasting fact.

SKILLS 1

Reading

Write these headings on the board:

Travel | Health | Homes

Brainstorm with the class some predictions for future developments in these three fields. Encourage Ss to use their imagination. Now open the book and do the reading tasks.

1 Ask Ss to read the passages quickly looking for keywords and then match them with the headings.

Key: 1. B 2. A 3. C

2 Have Ss do the task individually. Then Ss can check their answers in pairs. Elicit the answers from Ss.

Key: 1. D 2. A 3. E 4. B 5. F 6. C

3 Ask Ss to read the passages again and answer the questions. Ss can ask and answer in pairs. T corrects the answers as a class. If time allows, have Ss show where they found the answers.

Key:

1. To explore Mars/ To find out if there is, or ever has been, life there/ To explore the possibility of living there.
2. They help people live longer.
3. 70 or 75 years.
4. Solar panels and solar windows.
5. They can do chores such as cleaning, cooking, washing, and organising things.

Speaking

Set up the **SPEAKING** stage by getting Ss to think about the pros and cons of advancements in science and technology. Explain that nothing is 'black and white'; there are always advantages and disadvantages. For example, say:

More and more robots will be invented and used in the future. One of the advantages of this is that robots will be able to do dirty or dangerous jobs that humans don't want to do. At the same time, there are disadvantages – robots will replace people in some areas so there will be unemployment.

4 Ss work in pairs to think about these pros and cons. Encourage Ss to think of as many ideas as possible. Move around to give some cues and observe.

nuclear energy: - convenient, clean, available…
- expensive, unsafe, environmentally unfriendly…

nutrition pills: - people can live longer, convenient,…
- expensive, create an ageing population, create overpopulation…

smart phones: - convenient, quick, entertaining…
- environmentally unfriendly, discourage face-to-face communication, people can be tracked at all times…

space travel: - exciting, adventurous…
- expensive, dangerous…

5 Divide the class into groups of five or six. Each group talks about one of the fields in **4**. Tell Ss to read the example before they start. Encourage them to use the phrase given in the **Look out!** box. While Ss are talking, T goes around to give assistance if necessary.

If time allows, have Ss summarise their group's ideas and present to the class.

SKILLS 2

Listening

1 **Listen to the conversation and choose the best summary.**

a. The benefits that advances in science and technology may bring to people's lives.
b. The benefits and drawbacks that advances in science and technology may bring to people's lives.
c. The drawbacks that advances in science and technology may bring to people's lives.

2 **Listen again to the conversation between Nick, Duong, and Chau. Circle the words and phrases as you hear them.**

1. problems
2. high yields
3. the moon
4. overcrowding
5. on television
6. bring unemployment

3 **Listen again and answer the questions.**

1. What will help feed the large population on Earth?
2. Where may we be able to live?
3. What does Nick say he likes?
4. Does Chau think science and technology may bring problems?
5. What does Nick think at the end of the conversation?

Writing

Writing to express agreement or disagreement

Introduction: I agree/ disagree with the idea that …

Explaining your opinion:
Firstly, Secondly, …
Furthermore, In addition …

Conclusion: In short/ For these reasons …

4 **Look at the sample paragraph and fill the outline below.**

I disagree with the idea that robots will only bring benefits to people in the future. Robots will also have some negative effects. Firstly, they will be very expensive and we will spend too much money buying and fixing them. Secondly, robots in factories will be able to do everything the workers do, so robots will make them jobless. Thirdly, robots in our homes will do all the housework for us, so we will become lazy and inactive. In short, robots will do many things for us, but they may not improve the quality of our lives.

Introduction: disagree
Idea 1:
Idea 2:
Idea 3:
Conclusion: not always good

5 **Make notes, then write a paragraph on the following topic.**

Do you agree or disagree with the following idea?

With the help of technology, students will benefit greatly from studying by themselves at home.

SKILLS 2

Listening

1 Have Ss read the three options. Then play the recording and elicit the answer from Ss.

Key: **b.** The benefits and drawbacks that advances in science and technology may bring to people's lives.

2 Play the recording again, once or twice. Ask Ss to listen carefully and tick the words/ phrases according to what they hear in the passage.

Key:

1. problems	**2.** high yields	**3.** the moon
4. overcrowding	**5.** on television	**6.** bring unemployment

3 Play the recording again. Tell Ss to take notes/ write down the key words as they listen. Then they answer the questions in writing or verbally. Correct their answers as a class.

Key:

1. High yields in farming will (help feed the growing population on earth).
2. (We may be able to live) on other planets.
3. He says he likes the idea of having lessons at home with a robot, and on the Internet.
4. Yes, she does.
5. He thinks there will be many new problems.

Audio script:

Nick: Hey, Duong and Chau, do you remember Dr. Nelson's talk on science and technology?
Chau: Yes. He said that science and technology would help us solve the world's problems in the future.
Nick: Right. I think world hunger is a problem now, and developing ways to get high yields in farming will help feed the growing population on earth.
Duong: Good point. Also we may be able to live on other planets, so overcrowding won't be a problem any more…
Nick: And I like the idea of having lessons at home with a robot, and on the Internet.
Duong: And no more paper books. We'll have e-books, and tablets for everything.
Chau: That doesn't sound like a benefit to me. I'd still want to go to school. I'd like to communicate face-to-face with teachers and friends. In my opinion, science and technology will bring new problems to people.
Duong: Like what?
Chau: Well, robots will bring unemployment, and high yields in farming may destroy the environment and sending people to Mars may cause pollution…
Nick: You're right: so many new problems…

Writing

Tell Ss to read the notes in the box carefully.

4 Have Ss read the sample paragraph. Explain that the first sentence in the sample is the topic sentence which tells the reader whether the author agrees or disagrees with the statement. The following sentences express the reasons. The last sentence is the concluding sentence, which summarises the main points in the paragraph. Now have Ss work in pairs to fill the outline. Check as a class.

5 Have Ss read the argument put forward. Then work in pairs to make notes using the model in **4**. They must decide if they agree or disagree, give three supporting points, then conclude their argument. Move around to provide help. If time allows, have Ss work from their notes to write the paragraph in about 100 words. Make sure that they use proper connectors *first/ firstly, second/ secondly*, … and pay attention to spelling and punctuation. T may collect some Ss' work and mark them, then give comments to the class.

Otherwise, help Ss develop a good outline for their writing and write the paragraph as homework. Remind Ss to bring their work to class in the next lesson.

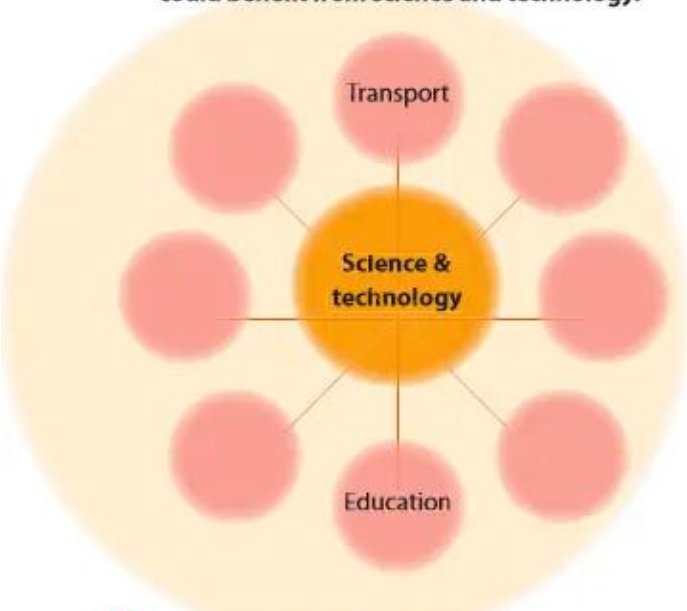
LOOKING BACK

Vocabulary

1 **Write the correct form of the words in brackets.**

1. My friend said he really enjoyed doing (science) _____ experiments and finding out how things worked.
2. Production of these chemicals causes serious (environment) _____ pollution.
3. There have been major new (develop) _____ in space research and satellite technology.
4. It is known that new scientific (discover) _____ are being made all the time.
5. It seems (natural) _____ for a child to spend so much time by himself or herself.

2 **Complete the word web with the fields that could benefit from science and technology.**



3 **Fill each gap with a word from the box to complete the passage.**

science	inventions	inventing
benefits	productive	laboratory

Thomas Edison was one of the greatest inventors of the world. He was responsible for more than one thousand (1) _____ including the electric light bulb and the record player. He also created the world's first industrial research (2) _____.

Edison was born in 1847 in Ohio, USA. When he was 10 years old, he set up a small laboratory after he had read a (3) _____ book his mother showed him. In 1869, he borrowed some money and began to make inventions. In 1876 he built a new laboratory so that he could spend all his time (4) _____. He planned to turn out minor inventions every ten days and a 'big trick' every six months. He developed many devices that brought great (5) _____ to people's life. He once said that the value of an idea lay in the using of it. Edison died in 1931, after having a remarkably (6) _____ life.

Grammar

4 **Change the sentences into reported speech.**

1. "They are doing an experiment."
→ He said that _____.
2. "You have to sign the paper again."
→ She told me that _____.
3. "We watched a television documentary on the future of nuclear power."
→ Tam said _____.
4. "The 10 o'clock flight to Kuala Lumpur will be an hour late."
→ They announced that _____.
5. "In 50 years' time we may be living on the moon."
→ Scientists said that _____.

5 **Rewrite these sentences in direct speech.**

Example:

Louise told me that he had rung me the night before.
→ Louise: "I rang you last night."

1. Kien said that he had missed the train.
2. Duong said that he could run very fast.
3. Mia told me that she would hand in the report the next day.
4. She said that she was reading a science fiction book about life on Venus.
5. He told me he would be a lawyer when he grew up.

LOOKING BACK

This is the review section of the unit. Tell Ss to record their results for each exercise in the **LOOKING BACK** section in order to complete the final **Finished! Now I can** … assessment.

Vocabulary

1 Ss can do the task by themselves or in pairs. Correct as a class. After that let some Ss read the sentences aloud.

Key:

1. scientific **2.** environmental **3.** developments **4.** discoveries **5.** unnatural

2 Give Ss a few minutes to complete the word web. T may give some cues/ examples:

- *Engineering*
- *Farming*
- *Home life*
- *Entertainment*
- *Energy*
- *Medicine*
- *Space exploration*
- *Communication*
- *Architecture*
- *Leisure*

……

Have Ss read out loud their answers.

3 Let Ss read the passage and complete this exercise individually. Less advanced classes can complete this exercise in pairs.

Key: **1.** inventions **2.** laboratory **3.** science **4.** inventing **5.** benefits **6.** productive

Grammar

4 First let Ss repeat the rules of changing the pronouns, the verb(s), and time and place expressions in reported speech. Have them do tasks **4** and **5** in their notebooks. Then call on some Ss to read their answers, sentence by sentence. Correct their answers.

Key:

4
1. He said that they were doing an experiment.
2. She told me that I had to sign the paper again.
3. Tam said that they had watched a television documentary on the future of nuclear power.
4. They announced that the 10 o'clock flight to Kuala Lumpur would be an hour late.
5. Scientists said that in 50 years' time we might be living on the moon.

5
1. Kien said, "I missed/ have missed the train."
2. Duong said, "I can run very fast."
3. "I'll hand in the report tomorrow," Mia told me.
4. She said, "I'm reading a science fiction book about life on Venus."
5. "I'll be a lawyer when I grow up," he told me.

Communication

6 **Write one prediction for each of the following fields, based on the cues and your own ideas. Then share it with the class.**

education food leisure energy
home life transport communication

Example:

In transport, we will probably travel faster and further in flying cars and spaceships.

Cues:

- solar energy all year round
- no schools, lessons on the Net
- nutrition pills instead of normal food
- 5D-cinema at home
- home security protection with cameras
- entertainment centre at home
- smart phone app

Finished! Now I can	✓	✓✓	✓✓✓
• talk about the roles of science and technology • use future tenses • use reported speech • pronounce words starting with *un-* and *im-* correctly in isolation and in sentences • write a paragraph to express agreement/ disagreement about the roles of science and technology			

PROJECT

Young Inventors

1 **Read the following passage and answer the questions that follow.**

John J. Stone-Parker

John J. Stone-Parker is one of the youngest inventors in the world. While still a small child, John was very fond of creating new things. He saw that his dad had trouble every time he had a drink with ice cubes in it, so John came up with the idea of creating a star-shaped device that would prevent the ice cubes from slipping out of the glass. He patented this object when he was just four years old in 1989.

1. What was John J. Stone-Parker's invention?
2. Do you think that his invention was useful?

2 **If you could invent something new, what would you develop? Choose one of these or your own idea.**

- a game that can be played by four people
- a sport that can be played indoors by a group of people
- a medicine that can make you do something great
- a device that can prevent accidents at home
- a machine that can recycle everything at home

3 **Write/ talk about your invention:**

- what it is
- what it is used for
- how it works
- how it can help people

Communication

6 Have Ss work individually. Tell them to be imaginative. Make sure they write a prediction for at least three of the fields. Have Ss read out one of their predictions to the class. Others can ask them questions about their prediction. This can also be done in small groups.

Finished!

T asks Ss to complete the self-assessment. Discuss with the class what difficulties remain and what areas Ss have mastered. Provide further practice on the weak areas of the class.

PROJECT
Young Inventors

1 Ss work in groups. Give Ss enough time to read the passage and discuss the questions.

2 Encourage Ss to use their imagination, brainstorm ideas and then choose what they would like to invent.

3 Divide the four areas between members of the group to develop their ideas and write them down. Allow groups enough time to prepare their talk. They can make their preparations out of class, and in the next lesson have them present their invention. The class votes for the best or the most useful invention.