UNIT 6

DISCOVERY AND INVENTION

LEARNING OBJECTIVES

Watch and listen

Watch and understand a video about Nuclear Fusion.

Reading skill

Scan to find information.

Critical thinking

Analyze advantages and disadvantages.

Grammar

Make predictions with modals and adverbs of certainty; use relative clauses; use nouns with dependent prepositions: advantages and disadvantages.

Academic writing skill

Write an introductory paragraph (hook, background information, thesis statement).

Writing task

Write an explanatory essay.

UNLOCK YOUR KNOWLEDGE

Work with a partner. Discuss the questions.

1 Look at the photo. What do you think it shows? Explain your answer.

2 What do you think will happen in science and technology over the next ten years? What kinds of new inventions will there be? How will they help people? Will there be any disadvantages, or dangers?

3 Where do people get ideas for inventions? What inspires new discoveries?

WATCH AND LISTEN

PREPARING TO WATCH

ACTIVATING YOUR KNOWLEDGE

1 You are going to watch a video about energy production. Before you watch, work with a partner and discuss the questions.

1 Where does most energy come from in your country?
2 What do people in your country think about the use of fossil fuels?
3 Is the government working to find other forms of energy?

PREDICTING CONTENT USING VISUALS

2 Work with a partner. Look at the photos from the video and discuss the questions.

1 How do you think the first photo is related to energy?
2 Look at the second photo. What are some dangers of this kind of energy?
3 Where do you think we will get most of our energy in the future?

GLOSSARY

reaction (n) a change that occurs when two chemicals are mixed together
recreate (v) to make something exist or happen again
power station (n) a factory that produces electricity
pressure (n) the force or weight that is put against something
unlimited (adj) having the greatest possible amount
breakthrough (n) an important discovery that helps solve a problem

WHILE WATCHING

UNDERSTANDING MAIN IDEAS

3 Watch the video. Which statement best describes the main idea of the video?

1 Companies and governments are very excited about new research into the sun's energy.
2 Fusion technology offers the best and safest possibility of getting unlimited clean energy, but it is still too expensive.

UNDERSTANDING DETAIL

4 Read the student's notes. Then watch the video again. Complete the notes.

- Fusion is much (1)_____ than nuclear fission.
- Fusion needs extreme heat or (2)_____ or both.
- Fusion uses (3)_____ molecules from sea water.
- Fusion is (4)_____. It creates zero carbon.

DISCUSSION

5 Work in small groups. Discuss the questions.

1 Which do you think is more important: saving energy or finding new sources of energy? Explain your answer.
2 Do you think we will have fusion energy in your lifetime? Why / Why not?

READING

READING 1

PREPARING TO READ

UNDERSTANDING KEY VOCABULARY

1 Read the definitions and complete the sentences with the correct form of the words in bold.

conditions (n) the physical situation that something is in
essential (adj) very important or necessary
harmful (adj) able to hurt or damage
illustrate (v) to show the meaning or truth of something more clearly, especially by giving examples
prevent (v) to stop something from happening or stop someone from doing something
range (n) a set of similar things
unlimited (adj) without end or restriction

1 Before the invention of sunscreen, people had no way to protect themselves from the _____ rays of the sun.
2 The website offers a wide _____ of products that can save time in the kitchen.
3 Vaccines are a special group of medicines. They _____ illnesses from happening, rather than treating an illness we already have.
4 These plants can live in very difficult _____ where temperatures are low and there is very little water.
5 The human brain has an almost _____ memory capacity, far more than that of a computer.
6 If you want to be an engineer or a scientist, it's _____ that you have good qualifications in Science and Maths.
7 The engineer used diagrams to _____ his point about the mechanics of suspension bridges like the Golden Gate Bridge.

USING YOUR KNOWLEDGE

2 Work with a partner. Discuss the questions.

1 *Bio-* is a prefix which means 'life'. What words do you know that start with *bio-*?
2 Read the title and the first paragraph of the article on page 129. What do you think *mimicry* and *biomimicry* mean?
3 Can you think of any inventions which copy their shape or function from something in nature?

The magic of mimicry

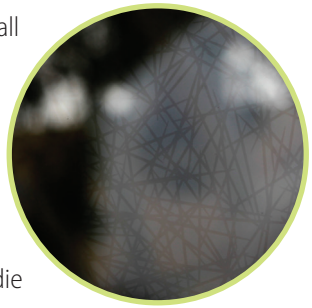
1 **To *mimic* people means to copy their speech, dress or behaviour. In contrast, in science, *mimic* means copying ideas from nature or natural processes to prevent or solve problems or to create helpful products. The influence of this so-called *biomimicry* can be seen in a huge range of everyday products, from clothing to cars.**

2 Perhaps the best-known example of biomimicry is Velcro®. It was invented in 1941 by a Swiss engineer called George de Mestral. One day, Mestral noticed the burdock seeds that stuck to his dog's hair. Under the microscope, he discovered that these seeds had hooks on them, so they stuck to loops on clothing or hair. Mestral copied this idea and created two strips of material: one with tiny hooks and the other with loose loops. When he put both strips together, they stuck like glue. However, unlike with glue, he could peel the strips apart and reattach them. Velcro® was initially unpopular with fashion companies, but after it was used by NASA to stop items from floating in space, it became popular with children's clothing companies. Today, it is used to fasten everything from lunch bags to shoes.

3 Another example comes from the ocean where mussels can stick to surfaces even when the water is moving very fast around them. Mussels produce a very strong adhesive[1] that works in wet **conditions**. Scientists were able to copy this material and found that it was three times stronger than other underwater adhesives. Another advantage is that it will not hurt the environment.

4 For NASA, protecting astronauts' eyes from the sun's rays is very important, but protecting their eyes from other dangerous radiation is also **essential**. Scientists studied how eagles and falcons clearly recognize their prey. Scientists discovered that the birds have yellow oil in their eyes, which filters out **harmful** radiation and allows them to see very clearly. NASA copied this oil, and it is now used by astronauts and pilots in Eagle Eyes® glasses. In addition to protecting eyes from dangerous rays, these sunglasses also improve vision in different weather conditions such as fog, sunlight or just normal light.

5 For birds, cities full of tall glass buildings are a problem. Spider's webs may be the solution. Birds cannot see the glass, so more than a billion of them fly into buildings and die every year. However, they can see spider's webs and they try to avoid them. So, engineers have used this idea in the invention of a new kind of window. These windows have tiny lines on them that look like spider's webs. Birds can see them, but the lines are so thin that humans cannot see them easily. It is likely that we will see these bird-friendly windows on more buildings in the future, and as a result, a significant drop in bird deaths.



6 As these examples **illustrate**, biomimicry appears to have an **unlimited** number of applications. It will be interesting to see which problems nature helps us solve in the future.

[1]**adhesive** (n) a material that can make things stick together

WHILE READING

READING FOR MAIN IDEAS

3 Read the article and choose the sentence which best summarizes the main idea of the article.

a Though mussels are small animals, they produce a powerful adhesive.
b In the future, nature can help us solve many important problems.
c Many useful products have been designed using biomimicry.
d Many useful discoveries have been made by accident.

SKILLS

Scanning to find information

Scanning means reading for specific information. When you scan a text, do not read every word. Look for key words that help you understand what the text is about and identify specific information. For example, look for names, numbers, pronouns or groups of words related to the same topic/theme (e.g. words related to engineering, animals, etc.).

SCANNING TO FIND INFORMATION

4 Scan the magazine article on page 129 quickly to answer the questions.

1 Which products are mentioned in the article?

_____

2 Which plants or animals were copied to produce these products?

_____

ANNOTATING

5 Read the article to find the answers to the questions and annotate the text as you read. Write summary notes in the margin.

1 Which two features of Velcro® make the strips stick together?
2 What are some uses of Velcro®?
3 What product can be used underwater?
4 What does adhesive allow the mussels to do?
5 Whose eyes did NASA want to protect from dangerous radiation?
6 What special feature of an eagle's eyes was copied to make sunglasses?
7 What feature of the new kind of window saves birds lives?

READING BETWEEN THE LINES

6 Work with a partner. Answer the questions.

1 Why do you think Velcro® became popular with children's clothing companies?

2 What uses do you think the adhesive from mussels have?

3 Do you think a lot of new buildings will have bird-friendly windows in the future?

POST-READING

DISCUSSION

7 Work with a partner. Discuss the questions.

1 What advantages could designs based on nature have? What disadvantages could they have.
2 Do you think biomimicry will be more common in the future? Why / Why not?

WRITING

8 Do some research on the internet. Find another interesting example of biomimicry and write a paragraph describing it. What part of nature is the product based on? An animal? A plant? What advantages does it offer?

READING 2

PREPARING TO READ

UNDERSTANDING KEY VOCABULARY

1 You are going to read an article about deepfake technology. Before you read the article, read the sentences below and choose the best definition, a or b, for the word or phrase in bold.

1 It is important to protect your **personal** data, such as your financial and health information.
   a secret; unknown
   b belonging to a specific person
2 Actors use their voices and the **movement** of their bodies to express emotion.
   a change of position
   b location
3 The internet helps to **spread** information and ideas around the world.
   a help people understand something
   b tell a lot of people about something
4 Actors often change their **appearance** so that their fans cannot recognize them.
   a when someone arrives
   b how someone looks
5 This building does not have good **security**. The doors are unlocked and the windows are open.
   a protection against threats
   b sustainability technology
6 Actors often lose their **privacy** after they become famous. People want to know all about their lives.
   a the right to keep your life secret
   b the right to decide your future
7 Experts say **images** are more powerful than words. They are easier to understand and remember.
   a ideas
   b pictures

USING YOUR KNOWLEDGE

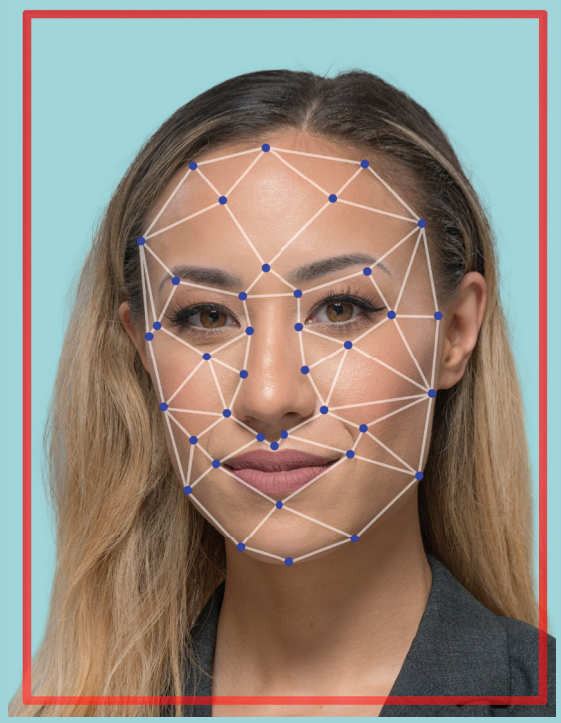
2 Work with a partner. Discuss the questions.

1 Do you believe everything you read on the internet? How do you determine what is true and what is not?
2 What about images? When you see pictures of people on the internet, can you trust that they are real? What about images of famous people, such as film stars, musicians or sports people?

DEEPFAKES

BENEFIT OR THREAT?

1 You have probably already seen something like this online: the head of one actor on the body of a completely different actor. This type of **image** is created by a computer, and it is called a *deepfake*. Deepfakes use a form of artificial intelligence in which a computer model is trained to use information in the same way as the human brain. It can create images and voices that look and sound almost like real people, including actors, politicians and other famous people. In the past, only experts were able to use this technology, but now anyone can create a deepfake. This is causing both excitement and worry.



2 The most familiar use of deepfakes is in entertainment. For example, deepfake technology can make actors in films look much younger. It works much better than make-up! Directors can also use it to produce the image or voice of actors who are not available. For example, a director may discover a mistake and want to film a scene again, but the actors are already working on other projects. The scene can be recreated by artificial intelligence without the live actors. How? Deepfake technology uses the rest of the film to "learn" the actors' **appearance**, speech and **movement**. It can even recreate actors who are dead.

3 Clearly, this technology offers the film industry many benefits. However, this technology also creates problems. Today, so much of our lives are online. What if someone creates a deepfake of you? Could it be used to get access to your bank account? Your health records? In 2020, thieves created a deepfake voice of a bank manager in the United Arab Emirates. They used it to steal $35 million! As the technology improves, these threats to **security** will definitely increase.

4 Deepfakes can also threaten **privacy**. Our **personal** information, including photos, is often available on the internet. Someone could use your photo and put it on someone else's body. Some celebrities have already found their own images on the internet. They are doing things they never did and saying things they never said! This can be embarrassing or even dangerous. It is very difficult to control these images once they appear on the internet.

5 Finally, deepfakes can be used to **spread** false information. Today, when we watch the news on television or online, we generally believe everything is real. We believe that the heads, bodies and voices all belong to the same, real people. As deepfake technology improves, however, that will probably change. We will not be able to trust what we see and hear because it could be fake. Deepfakes can change today's news, but they may also change history. For example, someone could "discover" a "lost" video of a famous person saying terrible things. Deepfakes may change how we view our world, and our past.

6 Although this technology offers important benefits to the entertainment industry, it also presents some frightening possibilities. Experts advise that we should use the same tool – artificial intelligence – to tackle these problems and make sure that this technology is used responsibly.

WHILE READING

SCANNING FOR INFORMATION

3 Read the first sentence of each paragraph of the article on page 133 to answer the question.

Do you think the author's view of deepfake technology is more positive or more negative? Explain your answer to a partner.

READING FOR MAIN IDEAS

4 Read the article and check your answer to Exercise 3. Then complete the table.

Benefits of deepfake technology for entertainment industry	Problems that deepfake technology creates

READING FOR DETAIL

5 Annotate details in the text. Underline examples of the following:

1 a deepfake threat to privacy
2 a deepfake threat to security
3 how deepfakes can spread misinformation

READING BETWEEN THE LINES

MAKING INFERENCES

6 Work with a partner. Read the following sentences from the article. Notice the quotation marks around some of the words. What do you think they mean?

1 Deepfake technology uses the rest of the film to 'learn' the actors' appearance, speech and movement.
2 For example, someone could 'discover' a 'lost' video of a famous person saying terrible things.

POST-READING

DISCUSSION

SYNTHESIZING

7 Work with a partner. Use ideas from Reading 1 and Reading 2 to answer the questions.

1 Think of some machines or devices you use every day. Which ones will probably not exist in 2035 because something better has replaced them?
2 Inventions and discoveries often solve problems. What problem would you like to solve with an invention?

LANGUAGE DEVELOPMENT

MAKING PREDICTIONS WITH MODALS AND ADVERBS OF CERTAINTY

GRAMMAR

Use the modals *will*, *could* and *won't* with an adverb of certainty (*definitely, probably,* etc.) before the main verb to talk about future predictions. For example:

100% = *will definitely*

Cars ***will definitely*** *become more efficient in the future.*

90% = *will probably*

The next generation ***will probably*** *use more digital devices.*

50% = *could possibly*

We ***could possibly*** *see humans walking on Mars soon.*

20% = *probably won't*

We ***probably won't*** *have flying cars.*

0% = *definitely won't*

We ***definitely won't*** *be travelling to the stars.*

1 Complete the sentences about the future using modal and adverb phrases with the meaning in brackets.

1 In years to come, biofuels _____ become more important. (100%)
2 Genetic modification _____ be very controversial before the end of the decade. (20%)
3 In the near future, electronic human implants _____ become very common. (50%)
4 Biomimicry _____ be a growing industry before too long. (90%)
5 Self-driving cars _____ be everyday products within the next ten years. (100%)
6 People _____ be living on Mars within the next few years. (0%)

2 Look at Exercise 1 again and underline the phrases which refer to future time.

3 Make three predictions of your own about the future. Share them with a partner.

PREFIXES

VOCABULARY

A prefix is a group of letters which goes at the start of a word to make a new word with a different meaning. Each prefix has a specific meaning.

sub (prefix meaning 'under') + *marine* (word related to water) = a kind of boat which goes under the water

Understanding the meaning of prefixes can help you guess the general meaning of difficult academic or technical words.

4 Look at these prefixes, their meanings and the examples. Then, add your own examples to the table. Use a dictionary to help you.

prefix	meaning	example
de-	become less, go down	decrease, _____ , _____
dis-	opposite	disagree, _____ , _____
en-	cause	enable, _____ , _____
pre-	before	preview, _____ , _____
re-	again	rebuild, _____ , _____
trans-	across, through	transport, _____ , _____
un, in, im-	reverse, not	unlikely, _____ , _____

5 Compare the pairs of sentences using the table above. Do the sentences have the same or opposite meanings? Write *S* (the same) or *O* (opposite).

1 Flying cars are **unsafe**.
Flying cars are dangerous. _____
2 We have to **rethink** the way we use technology.
We have to think again about how we use technology. _____
3 Genetic engineering **dehumanizes** us.
Genetic engineering makes us more human. _____
4 Can this software **translate** a document from French to English?
Can this software change the language of a document from French to English? _____
5 This laboratory is very **disorganized**.
This laboratory is neat. _____
6 The font on your presentation is too small. Can you **enlarge** it?
Can you make it bigger? _____

6 Work with a partner. Choose words from the table above and make five predictions about new technology. Then, compare your ideas.

WRITING

CRITICAL THINKING

At the end of this unit, you will write an explanatory essay. Look at this unit's writing task below.

Choose a new area of technology or invention and discuss its advantages and disadvantages.

SKILLS

Analyzing advantages and disadvantages

A common way of explaining a topic is to discuss its advantages (benefits or positive aspects) and disadvantages (problems or negative aspects). When planning an essay organized in this way, you may want to use a kind of graphic organizer called a T-chart, which is useful for examining two sides or aspects of a topic. Look at the example.

invention: tablet computers	
advantages	disadvantages
lightweight *portable* *fast start-up*	*no physical keyboard* *too small for working on multiple documents* *uncomfortable to use for long periods of time*

REMEMBER

1 Work with a partner. Review the chart you created in Exercise 4 on page 134. Brainstorm recent inventions in each area of technology below. You could also do an internet search for 'best recent inventions in …'.

areas of technology	inventions
medicine	*CT scanner, insulin pump,*
home	
space	
transport	
entertainment	
computers	
agriculture	

APPLY

2 Choose two of the inventions from your table in Exercise 1. Fill in the T-chart with advantages and disadvantages of these inventions.

invention: _____

advantages	disadvantages

ANALYZE

3 Work with a partner. Explain why you think the inventions you chose will / will not be around ten years from now.

GRAMMAR FOR WRITING

DEFINING RELATIVE CLAUSES

GRAMMAR

Use *defining relative clauses* to identify or describe nouns without starting a new sentence. A defining relative clause gives information about the noun that is necessary to understand the sentence. It answers the question: *Which X?* Defining relative clauses begin with *that* or *which* for things. Use *that* or *who* for people.

Look at these sentences from Reading 1 on page 129.

One day, Mestral noticed the burdock seeds. ***Which burdock seeds****?*
The burdock seeds stuck to his dog's hair → *One day, Mestral noticed the burdock seeds* ***that*** *stuck to his dog's hair.*

1 **Underline the defining relative clause that answers the question. The first one has been done for you.**

1 Scientists have developed <u>robots that are able to do dangerous work</u>. *Which robots?*
2 A journalist wrote about a video that had been "lost." *Which video?*
3 Inventions that are based on nature have many advantages. *Which inventions?*
4 Deepfake technology can recreate images of actors who are not available. *Which actors?*
5 The images that are created by deepfake technology can seem very real. *Which images?*

2 **Join each pair of sentences to make one sentence with a defining relative clause.**

1 There are many news stories about celebrities. Celebrities are the victims of deepfake technology.

_____

2 There is a huge amount of new investment in biofuels. Biofuels are cleaner and more sustainable than fossil fuels.

_____

3 Scientists at Cambridge University have published research in biomimicry. The research will have a major influence in the field.

_____

3 Work with a partner. Describe one person in your class using a defining relative clause. Then share your descriptions with your partner. Can they guess who it is?

Example:

Susan is the student ***who always arrives late.***

1 ... is the student _____.

NON-DEFINING RELATIVE CLAUSES

GRAMMAR

A non-defining relative clause, in contrast to a defining relative clause, gives extra information about the noun. It can be removed from the sentence, but the key information about the noun will still be clear. It answers the question *Can you tell me a little bit more about X?* Non-defining relative clauses have commas before and sometimes after them. Use *which* for things and *who* for people.

Eagles' eyes contain a yellow oil. ***Can you tell me a little bit more about the oil?*** *The oil filters out harmful radiation.* → *Eagles' eyes contain a yellow oil, which filters out harmful radiation.*

4 Underline the non-defining relative clause with extra information about the noun phrases in bold.

1 Deepfakes are based on **deep learning**, which is a form of artificial intelligence.
2 **The adhesive produced by the mussels**, which scientists have been studying for years, is now used in industry and medicine.
3 Another example of biomimicry is **a new kind of window**, which is based on a spider's web.
4 **Several celebrities**, who are very concerned about their privacy, discussed the dangers of deepfake technology.

NOUNS WITH DEPENDENT PREPOSITIONS: ADVANTAGES AND DISADVANTAGES

GRAMMAR

Some nouns appear with specific prepositions. These are called *dependent prepositions*.

increase in	impact on
difference between	reason for

At the start of a sentence, writers often use nouns with dependent prepositions to introduce the advantages and disadvantages of a topic.

An ***advantage of*** *the adhesive made by mussels is that it can be used underwater.*

One of the main ***problems with*** *deepfake technology is that it can be misused.*

5 Complete the table with the phrases in bold.

1 The main **advantage of** … is …
2 The main **disadvantage of** … is …
3 The main **worry about** … is …
4 One **point against** … is …
5 One **good thing about** … is …
6 One **bad thing about** … is …
7 A real **benefit of** … is …
8 The main **argument in favour of** … is …
9 The main **argument against** … is …
10 The **problem with** … is …

positive arguments	negative arguments

6 Choose a negative or positive phrase from Exercise 5 to complete each sentence. More than one answer is possible.

1 _____ robots is that they can do dangerous or boring jobs instead of humans.
2 _____ genetic engineering is that the new plant species may change human DNA.
3 _____ medical imaging is that you can see clearly inside patients' bodies.
4 _____ robots is that they take jobs away from people.

7 Using phrases from Exercise 3, write sentences to describe two advantages and two disadvantages of the invention from your chart on page 138.

ACADEMIC WRITING SKILLS

WRITING AN INTRODUCTORY PARAGRAPH

SKILLS

The first, or introductory, paragraph of an essay usually has three parts:

- a hook
- background information
- a thesis statement

The **hook** is a statement, definition or question at the beginning of the paragraph. Its purpose is to get the reader interested in the topic so he or she will want to keep reading. A good hook can be an interesting question, a surprising fact or statistic, a request to the reader to imagine a situation, a definition, something another person said, etc. For example:

In 2019, Americans spent an average of 97 hours sitting in traffic. Imagine what we could do with all that time if we did not need to commute.

Many nations are in danger of running out of water. However, a company has invented a machine which turns water from the air into water you can drink.

Background information helps readers understand the essay. Background information can include an explanation of words or phrases, historical information, data and statistics or a general explanation of the topic.

This is an electronic suit with robot arms and legs which follows the wearer's movements.

The **thesis statement** is usually the last sentence of the introduction. It tells the reader how the essay will be developed. A thesis statement has two parts: a topic and a point of view. For example:

topic point of view

Flying cars may reduce congestion on the ground, but they may create additional problems, such as congestion in the air and pollution.

This thesis statement informs the reader that the topic, flying cars, will be followed by both advantages and disadvantages of flying cars.

1 **Read the first paragraph of the article on page 129 again. Answer the questions.**

1 What is the hook? Does it get your attention? If so, how?

_____

2 What kind of background information does the paragraph include?

_____

3 According to the thesis statement, what is the topic of the article? What is the point of view? How many paragraphs will the body of the article probably have? What will each paragraph probably discuss?

_____

_____

2 Now read the introductory paragraph to 'Deepfakes – benefit or threat?' on page 133 again. Answer the questions.

1 What is the hook? Does it get your attention?

2 What kind of background information does the paragraph include?

3 According to the thesis statement, what is the topic of the article? What is the point of view? What will each paragraph probably discuss?

4 Which of the two introductions makes you more interested as a reader? Why?

WRITING TASK

Choose a new area of technology or invention and discuss its advantages and disadvantages.

PLAN

1 Look at the table you created in Exercise 2 in the Critical thinking section. You will need to take a point of view about this invention. Did you list more positive or negative points?

2 Plan your essay's introductory paragraph. Write notes on the following parts of the introduction. Make sure that your thesis statement (1) expresses your point of view and (2) tells the reader what to expect in the rest of the essay.

Hook: _____
Background information: _____
Thesis statement: _____

3 Create an outline for the body of your essay. Include both advantages and disadvantages. How many paragraphs will it have? If your invention has a lot of advantages (or disadvantages), you may need more than one body paragraph to discuss them. You can start with the body paragraph(s) that agree with your point of view, then list the body paragraph(s) with the opposing point of view. Or you can start with the opposing point of view and then list the paragraph(s) that agree with your point of view.

4 Plan your concluding paragraph. It should repeat your thesis statement and make a prediction about the future.

5 Use the Task checklist below as you prepare your essay.

WRITE A FIRST DRAFT

6 Write the first draft of your essay using your essay plan. Write 250–300 words.

REVISE

7 Now exchange your work with a partner. Comment on your partner's work. Underline the thesis statement, advantages/ disadvantages. Use the Task checklist to review your essay for content and structure.

TASK CHECKLIST	✔
Did you write about advantages and disadvantages?	
Did you include an introductory paragraph that has a hook, background information and a thesis statement?	
Does the number of paragraphs in the body match the point of view in the thesis statement?	
Do the main body paragraphs have a topic sentence, supporting sentences and a concluding sentence?	
Does the concluding paragraph repeat the thesis statement and make a prediction about the future?	

8 Make any necessary changes to your essay.

EDIT

9 Use the Language checklist to edit your essay for language errors.

LANGUAGE CHECKLIST	✔
Did you use modals and adverbs of certainty to make predictions about the future?	
Did you use *who, that* and *which* correctly in sentences with relative clauses? Did you use commas correctly?	
Did you introduce advantages and disadvantages with dependent prepositions?	

10 Make any necessary changes to your essay.

OBJECTIVES REVIEW

1 Check your learning objectives for this unit. Write *3*, *2* or *1* for each objective.

3 = very well 2 = well 1 = not so well

I can ...

watch and understand a video about Nuclear Fusion. _____

scan to find information. _____

analyze advantages and disadvantages. _____

make predictions with modals and adverbs of certainty. _____

use defining and non-defining relative clauses. _____

use dependent prepositions with advantages and disadvantages. _____

write an introductory paragraph (hook, background information, thesis statement). _____

write an explanatory essay. _____

2 Use the *Unlock* Digital Workbook for more practice with this unit's learning objectives.

UNLOCK DIGITAL WORKBOOK

WORDLIST

appearance (n)	image (n)	security (n)
conditions (n pl)	movement (n)	spread (v)
dehumanize (v)	personal (adj)	translate (v)
disorganized (adj)	preview (v)	unlimited (adj)
essential (adj)	privacy (n)	unsafe (adj)
harmful (adj)	range (n)	
illustrate (v)	rethink (v)	

= high-frequency words in the Cambridge Academic Corpus