

5.16 Vocabulary for writing The principles of GM

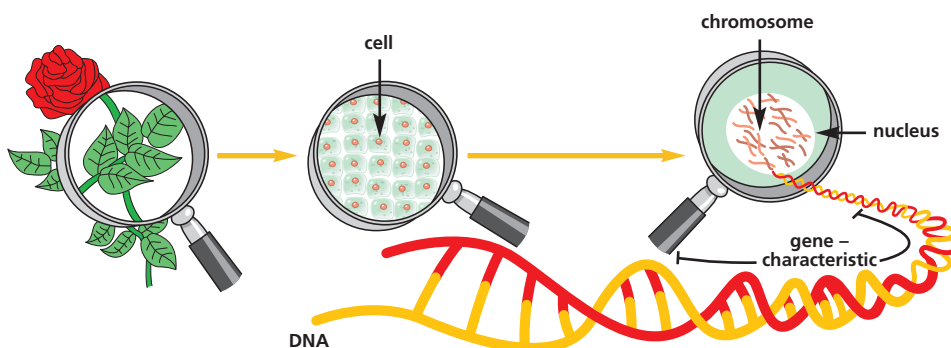


Figure 1: DNA in plants

A Activating knowledge

Complete the first paragraph from a web encyclopedia article with words from Figure 1.

B Building sentences

Write more sentences for the web article. Use each group of words, symbols and abbreviations below. Do not change the order or items or the form of any word.

- GM = 'genetic modification' / 'genetically modified'.
GM stands for 'genetic modification' or 'genetically modified'.
- form of biotechnology.
- Biotechnologists now able modify genes of plant produce new variety / even new species.
1. biotech scientists identify gene for particular characteristic.
- e.g., existing plant resistant to particular pest? / produce bigger yield?
2. gene for pest resistance / higher yield removed from plant.
3. gene inserted into cell belonging to different plant.
- genetics of plant modified
- new variety now has characteristic.
4. seeds gathered – farmers supplied with new variety

C Using new vocabulary

Find pairs of words in the list on the right. Explain the connection.

Examples:

biotechnology, biotechnologist = different forms of the same word

modify + genes = collocation

maintain, sustainability = both have 'ai'

GM

Inside every plant, there are millions of Each cell has a which contains which, in turn, are made up of The DNA in a particular plant can be divided into about 20,000 sections. Each section is called a Each gene carries the information for a particular

additional (*adj*)
because of (*adv*)
biotech (*n*)
biotechnology (*n*)
come to pass
compelling (*adj*)
[= very strong]
conventional (*adj*)
despite (*adv*)
discriminate (*v*)
equivalent (*n*)
extension (*n*) [= next step]
gene (*n*)
genetic modification
(GM)
genetics (*n*)
harm (*n*)
harmful (*adj*)
infectious (*adj*)
maintain (*v*) [= say is true]
migrate (*v*)
migration (*n*)
modification (*n*)
modify (*v*)
mutate (*v*)
mutation (*n*)
nutrient (*n*)
nutrition (*n*)
outsell (*v*)
outweigh (*v*)
pest (*n*)
potentially (*adv*)
precise (*adj*)
relative (*adj*) [= compared
to something else]
relinquish (*v*)
resistant (*adj*)
risk (*n*)
seed (*n*)
selective breeding
shelf-life (*n*)
sustainability (*n*)
turn your back on
vaccine (*n*)
yield (*n*)

5.17 Real-time writing The road to feeding the world?

A Activating ideas

Study the quote in the assignment.

1. What does the green movement think about GM crops, according to the professor?
2. What does the professor think about them?
3. Why might he take that view?

B Preparing to write

Study the questions in the assignment. Work in pairs.

1. Answer the questions from your own knowledge.
2. Find answers to the questions in the research notes on page 177.
3. Look at the spidergram. How many paragraphs is the student going to write?

C Recognizing the essay type

1. What kind of essay do you have to write?

- Argument
- research report
- For and against
- Description

2. What is the hidden thesis in the assignment?

D Reviewing, quoting and citing

You learnt in 3.18 about quoting from authorities and giving research sources. Complete each paragraph of the essay opposite with a quoting verb or phrase from the box in each space. You can use some verbs and phrases more than once.

according to claims concluded finding go
have found maintain maintains points quotes
saying says seems states support supports

E Noticing the discourse structure

Study three paragraphs from the essay opposite.

1. How has the writer organized the research information into paragraphs?
2. What are the main elements of each paragraph?
3. How will the essay continue?

F Completing the essay

Look again at the research notes on page 177.

1. Write five more paragraphs for the essay opposite. Vary the way you write the topic sentence for each one.
2. Write an introduction.
3. Write a conclusion.

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Assignment 3:

GM crops – the road to feeding the world?

Those in the green movement may have their hearts in the right place, but there is very little knowledge [of GM technology]. The debate is low-grade and alarmist. Our aim is to get more production on less land, which means that less land is used for agriculture. Any ecologist will tell you that conventional agriculture has a larger negative impact on the world than anything else.

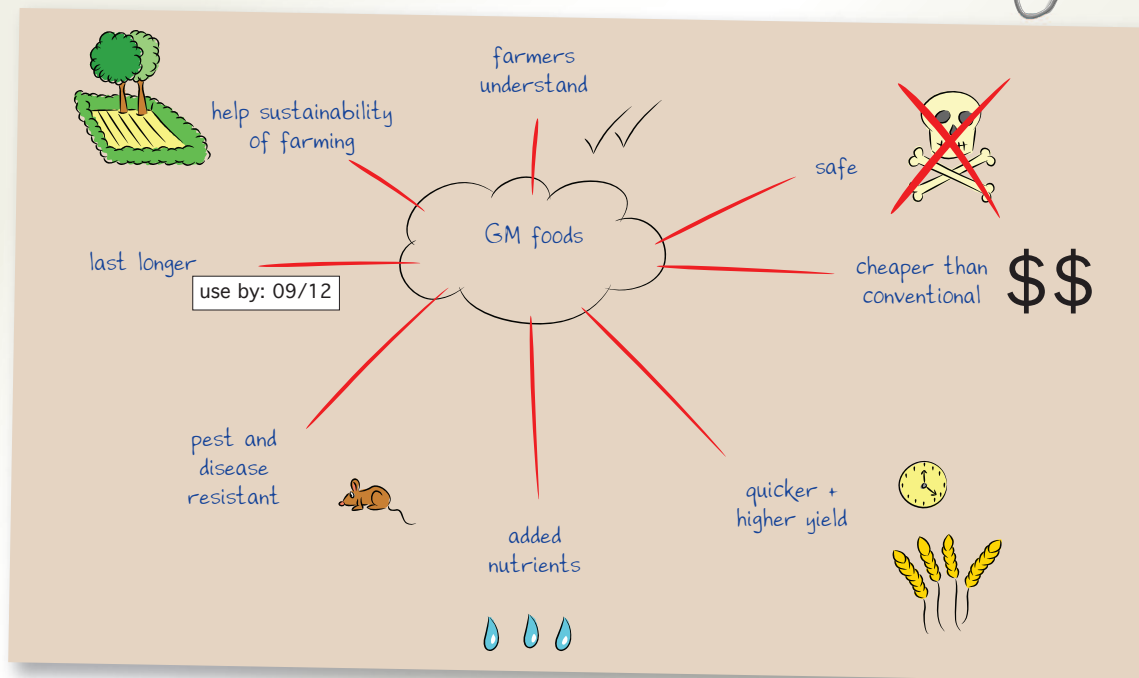
Dr Ray Bressan,
*a professor at Purdue University and
academic with biotech company FuturaGene*

Many people have made up their minds about GM crops already, coming down either in favour or, in most cases, against. But biotechnologists are calling for a proper debate about the issue. In this assignment, you must research the issue and discuss the benefits of genetically modified crops.

Consider these questions:

- Do farmers understand GM crops?
- Are GM foods safe?
- Do they cost more than conventional food crops?
- Do they grow more quickly?
- Do they produce higher yields?
- Are they more nutritious?
- Are they more resistant to pests and diseases?
- Do they last longer?
- Do they help farming to be sustainable?





Discuss the benefits of genetically modified foods.

The first point in favour of GM foods is that farmers understand the basic idea. They are a logical extension of selective breeding. For thousands of years, farmers have been selectively breeding plants, which changes the genetics of the plants. _____ American Public Media, 'Genetic engineering is just the latest form of biotechnology – the most precise method yet' (American Public Media, 2011).

A second argument for producing GM crops relates to safety. Several authors _____ the idea that GM foods are safe. A BBC journalist _____ that 'there is no evidence that modified crops cause illness in humans'. Another journalist _____ 'GM crops are no more harmful to the environment than conventional plant varieties' (Black, 2004). Finally, scientific studies _____ evidence to support their safety. For example, a University of Queensland PhD study _____ that GM crops are worth growing despite the risks. It _____ out that the benefits of GM food outweigh the dangers, _____ 'no compelling evidence of harm to humans from GM plants' (Science Alert, 2008). A GM food producing company, ArgEvo, _____ that GM foods are actually safer than non-GM foods because of additional testing (BBC, 2009b; BBC, 2006).

Thirdly, there is the question of cost. It _____ that GM crops can be cheaper than non-genetically modified foods (BBC, 2006). A Chinese professor _____ that people have been eating GM foods in China since 2000, because of their relative cheapness (Juan, 2010). Krebs (2000) _____ this view, _____ that 'GM tomato paste, which is slightly cheaper than non-GM paste, is outselling its conventional equivalent in J. Sainsbury plc' (Krebs, 2000). Some people _____ further, maintaining that GM foods are the future of cheap food. The *Times* _____ a scientist as _____ that resistance to GM foods may mean the end of cheap food (Henderson, 2007). 'If we turn our backs on the technology which scientific learning can offer, then the end of cheap food can come to pass' (ibid.).

5.18 Learning new writing skills Using lexical cohesion

A Reviewing grammar

Find the mistake in each sentence and correct it.

- In this essay, I look at the advantages for GM foods.
- I consider the ability of GM foods increasing the sustainability of farming.
- The first point in favour of GM foods they are a logical extension of selective breeding.
- For thousands of years, farmers are selectively breeding plants.
- A second argument for producing GM foods relate to safety.
- Scientific studies find evidence to support the safety of GM crops.
- Thirdly, there is the question of costing.



B Identifying a new skill

- How could you improve these two paragraphs?

a. GM crops can be grown more quickly than non-GM crops. GM crops can produce a higher yield than conventional crops. Biotechnology can produce more crops. It can develop better crops. This is important because there is a need to increase food crops as world population rises.

b. Biotechnologists can add nutrients to GM foods to make them even healthier than normal crops. Biotech researchers have added beta-carotene to rice. It may even be possible to add vaccines to crops. If scientists can add vaccines, GM foods could protect humans from infectious diseases.

- Read the Skills Check. Then rewrite the two paragraphs above.

C Practising the new skill

Rewrite each sentence below in two different ways, using the words in brackets.

1. It costs a lot of money.	expensive	high
<i>It is very expensive. The cost is very high.</i>		
2. They are cheap.	expensive	cost
3. They last longer.	long-lasting	bad
4. Some scientists take a different view.	opinion	see
5. There are risks in the experiment.	risky	dangerous
6. They are not harmful.	harm	danger
7. It seems that they are safe.	apparently	appear
8. There are many tests on them.	tested	conducted
9. Firstly, I consider price.	issue	relates
10. The results were difficult to interpret.	It was hard	interpretation

Skills Check

Using lexical cohesion

It is bad style in English to repeat the same word many times in one paragraph. You can avoid repetition of **nouns** by using:

- a **different noun** for the same item
- a **different sentence structure**
- a **pronoun** instead of a noun

You can avoid repetition of **verbs** by using:

- a **different verb** for the same action
- a **different part of speech** formed from the verb
- the verb **do** as a replacement verb

Don't worry about repeating nouns and verbs in the first draft of your essay. But make a note of repetition during editing and make changes in the final version.

5.19 Grammar for writing *although / because vs. despite / because of*

The structure of a **subordinate clause** depends on the introductory **adverb**.

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Study the examples in the table. What structure do we use ...

- after *although* and *because*?
- after *despite* and *because of*?

main clause			subordinate clause / phrase		
GM crops	may be	worth growing	although	there are risks.	
			despite	the risks.	
GM foods	are said to be	safer	than non-GM foods	because	they are tested more.
				because of	additional testing.

Remember! We can also begin a sentence with a subordinate clause.

A Changing sentences into noun phrases

Change these sentences into noun phrases which could be used after *because of / despite*.

1. There are risks.	<i>the risks</i>
2. They are tested more.	
3. It doesn't cost very much.	
4. It is very fast.	
5. It takes a long time.	
6. It is very difficult.	
7. It is very profitable.	
8. The company was sold.	

B Choosing the correct adverb

Complete each sentence with *although / despite / because* or *because of*.

- Reality TV is popular with TV companies *because* it is cheap to make.
- population ageing started later in developing countries, it is now happening faster.
- Sales of fountain pens continued to decline the significant price reduction.
- Sales of fountain pens increased later the manufacturers rebranded their product.
- its location in Western Europe, the UK does not suffer from tropical diseases.
- Switzerland is land-locked, it is still extremely successful economically.
- Most parts of Italy have easy access to seaports it is a peninsula.
- the thickness of the new ink in Biro's invention, it did not flow properly.

C Using clauses and phrases after subordinating adverbs

Complete each sentence in four ways, using *although*, *despite*, *because* and *because of*.

- Organic food is gaining in popularity in Britain ...
 - *although it is more expensive than conventional food.*
 - *despite costing more than conventional food.*
 - *because many people are becoming worried about intensive farming methods.*
 - *because of growing concern about intensive farming methods.*
- Many biotechnologists support GM foods ...
- Audiences like reality TV ...
- Population ageing is a worldwide problem ...
- Some countries are successful economically ...

5.20 Applying new writing skills **The road to disaster?**

A Reviewing vocabulary

What is the opposite of each word or phrase?

1. GM foods	conventional foods
2. natural	
3. benefit	
4. harmful	
5. precise	
6. drawbacks	
7. support (an idea)	
8. much more	
9. add	
10. long-lasting	

B Reviewing vocabulary

Study the assignment.

1. What does the professor think about GM crops?
2. Find words in the questions which mean:

a. not on purpose	accidentally
b. tell the difference between	
c. go from one place to another	
d. change in a bad way	
e. possibly	
f. give away	
g. owned by	

3. Can you answer any of the questions now?
4. What is the hidden thesis in this Argument essay?
5. Complete the introduction to the essay on page 164.

C The TOWER of Writing

1. Research the assignment on the Internet. Type *GM* + each of the questions in the assignment. Make a note of points from one or two sources for each question. Record the sources.
2. Organize the information into sections. Use the assignment questions and the introduction to help you organize. Write one or more paragraphs for each section.
3. Write the first draft. Don't worry about lexical cohesion! Try to use *because of* and *despite* correctly a few times.
4. Exchange drafts with a partner. Mark your partner's work in the normal way. In addition, on this occasion, write *R* next to any repetition of nouns or verbs.
5. Write the essay again.



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Assignment 4: GM crops – the road to disaster?

There are a lot of people in Europe in favour of biotechnology [in GM crops], who are prepared to take risks, but a considerable number are resistant and see no benefits. Many people see biotech taking us into the realm of unknown dangers.

George Gaskell,
Professor of Social Psychology at the London School of Economics

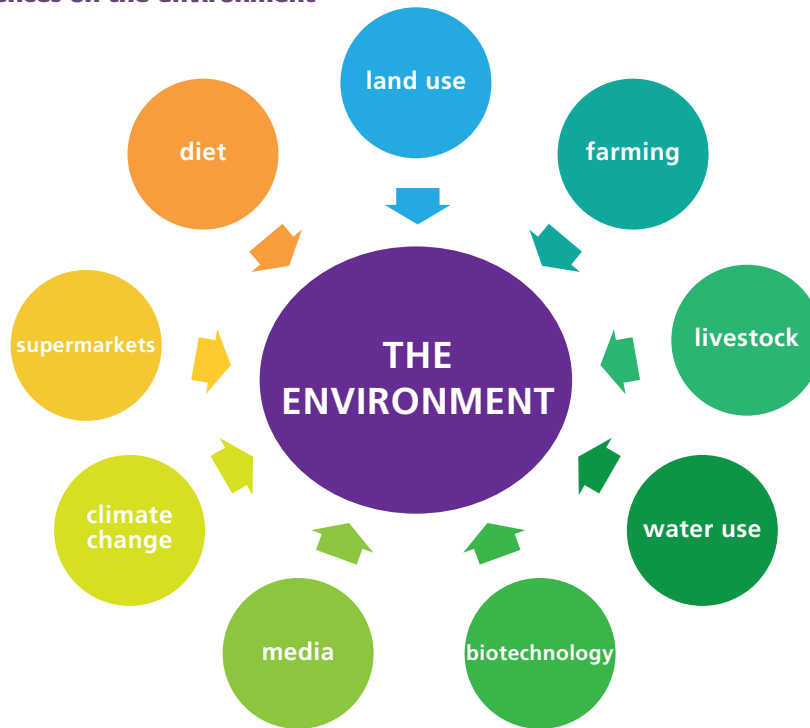
In the last assignment, you considered the benefits of GM crops. This time, you must look at the other side of the debate and discuss the dangers.

Consider these questions:

- Can genes mutate with harmful effects?
- Can genes be modified accidentally?
- Can genes migrate to modify other species?
- Are GM crops potentially harmful to birds and insects?
- Is it possible accurately to discriminate GM products from conventional products on supermarket shelves?
- Do farmers relinquish control of seed production to biotech companies?
- Do new species become the property of biotechnology companies?

Portfolio

Influences on the environment



A **Activating ideas**

Study the diagram above. Which area(s) do you associate each word or phrase below with?

aquifer audience carnivore cells characteristic cloning crop rotation deforestation
desalination DNA documentary education emissions food miles genetics
growth hormone manure modify pesticide pollution research reservoir saturated fat
soil erosion stress taste uniformity vegetarianism waste yield

B **Taking part in a discussion**

Work in groups.

1. What dangers do some of the areas hold for the environment?
2. What benefits can some of the areas bring to the environment?

C **Gathering and recording information**

Choose one of the areas in the diagram. What effects does this area have on the environment? Research positive and negative points, from information in this Course Book and on the Internet.

D **Preparing a presentation**

Prepare to give a talk about your research. Use slides and/or visuals to illustrate your points.

E **Listening to a presentation**

Work in groups. Make notes about the positive and negative points about each area that is presented.

F **Writing**

Choose one of the following:

1. Write an essay about the area that you researched in Exercise C.
2. Make a poster presentation of all the areas in the diagram above.