ENGLE205F

Module 3

Skills and strategies for academic reading

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Figure on p. 8.

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Introduction

This module aims to give you practice in a variety of skills and strategies for dealing with academic texts. As in *Modules 1* and *2*, the activities in this module do not relate directly to IELTS test questions but instead focus on developing your ability to comprehend a range of academic reading texts. In *Module 7*, you will be asked to apply this ability to reading passages similar to those that might be used in the IELTS reading test.

After discussing the reading process in general, *Module 3* introduces you to some skills and strategies which should help you to improve your comprehension of various kinds of academic texts. This module is divided into three main parts, with each part representing a particular set of key reading skills and strategies. Specifically, you will learn how to:

- orient yourself towards a reading passage and predict its likely content and structure;
- read quickly for main points by focusing on first and last paragraphs and topic sentences;
- read intensively for specific information;
- assess how relationships between ideas and paragraphs are ordered and organized, and note how discourse markers are used;
- determine the meaning of unfamiliar words from context, and knowledge of word forms, word roots, prefixes and suffixes;
- identify possible synonyms for key words and phrases;
- analyse complex sentences to identify their key ideas;
- identify examples and distinguish supporting information from main points;
- identify an author's opinions, attitudes and bias; and
- assess the intended audience of a text.

We begin this module by looking briefly at the importance of determining our reading purpose. Once we have ascertained *why* we are reading a passage, we are better able to determine *how* we should read it. We practise each of the three sets of skills above by looking at a variety of academic reading passages that deal with topics such as computers, health and medicine, drugs, technology, astrobiology, genetic engineering and cosmetic surgery. Although these texts are 'academic' in terms of their structure, style and language, their content is quite general and understanding them does not require any specialist knowledge. They also deal with topics that you *may* come across in reading passages in the IELTS test.

Understanding your reading purpose

Whenever you begin to read a text, you should try to ask yourself 'why am I reading this?' For example, when you read a university course prospectus for the next semester, you are probably trying to find out the aims, content coverage and assessment requirements of a particular programme or course. Similarly, if you are reading a scientific report on a laboratory experiment, your aim is probably to discover the results and their implications.

Activity 3.1

Think about the following kinds of texts and what your *main reading purpose* might be as you approach each of them:

1 user instructions for installing new computer software

2 a newspaper editorial that is critical of a new government immigration policy

3 a chapter in an accounting textbook that outlines procedures for assessing a client's property tax

4 a memo to student teachers from their lecturer reminding them about suitable behaviour when making school visits and observing classes

5 a journal article that reports on research into the hole in the ozone layer.

In each of the above texts, an understanding of your reading purpose will guide the way you read. For example, if you are a student teacher reading text (4) above, you might quickly skim over any introductory information and then focus your attention on specific language related to 'dos and don'ts' when making a school visit. In contrast, if you had a particular interest in the new policy in text (2), you might read the introduction in the editorial quite closely to establish the writer's views and his/her position on the policy.

Once you have determined your reason or purpose for reading a text, you can then decide *how* to read it – for example, whether you need to focus on key points, specific details or the writer's opinion.

Activity 3.2

Imagine that you are doing some research for an essay you have to write for a university course. You have found 15 journal articles that relate broadly to your essay topic, some of which may be worth using and some not. You have two hours to review them to decide if they are worth reading more closely. Each journal article has 15–20 pages, so you have about 200–300 pages to cover in two hours! How would you approach these articles to determine whether or not they are worth reading in more detail? What reading skills or strategies might you use in the two hours you have available?

Your task in the above activity was to think about skills and strategies you could use to *quickly* review each article and determine whether or not its main ideas were useful for your essay. Once you know the main points of an article, you are in a better position to decide if you should read it more intensively. Let's look more closely at skills/strategies for *reading for main points or ideas.*

Reading for main points

Reading for the main points entails a number of skills and strategies. Many of these are related to *using your prior knowledge of the structure and language* of a text to predict and locate key information. *Skimming* skills – such as looking quickly at the title and paragraph topic sentences – are also critical. As you will see in *Module 4*, many of the prediction skills and strategies for reading a text effectively can also be applied to improving your listening comprehension.

Orienting yourself to a text

We saw in the last section that we bring different purposes to different kinds of reading texts, and that this determines the way we read. When approaching a text, we first have to *orient ourselves to its structure and content*.

Look for a minute at the following passage which tells users of the OUHK's Online Learning Environment (OLE) how to save OLE email messages to their hard disks. What do you think would be your main purpose when reading this?

Reading passage 1

Saving your email messages on your hard disk

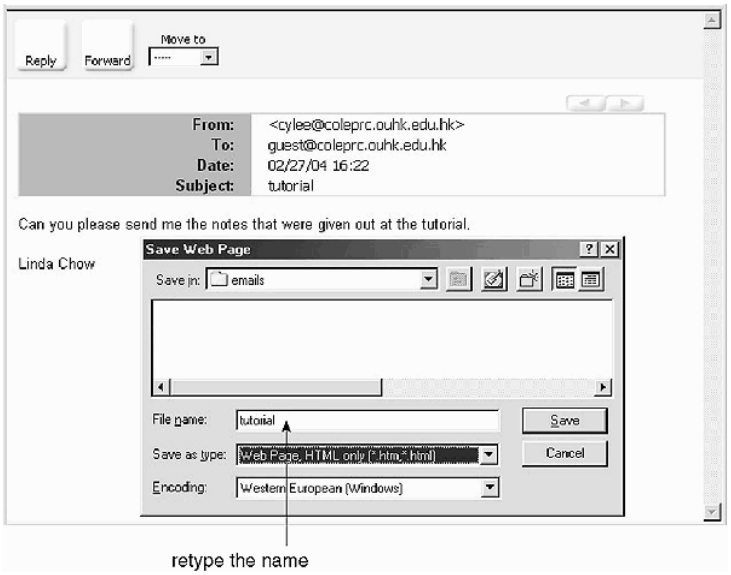
To clear your email storage space, you can save some of your emails on your hard disk:

1 Create a new folder (you can name it 'emails') on your desktop or in a drive of your hard disk.

2 Open the message that you want to download.

3 Click **Save as** from the 'File' menu. Select the folder that you have created to store your downloaded message.

In the 'File name' box, rename the message by deleting the long file number and retyping a name for the file.



In the 'Save as type' box, select 'Web Page HTML only (*.htm, *.html)' and then click the **Save** button. The message will then be saved in the folder you created in your hard disk.

Note: If the email message has an attachment, the attachment will not be saved in the hard disk. You will need to open the attachment and use the **Save** option to save your attachment separately.

4 Once you have saved the email message on your hard disk, **you should delete the email message from your email folder in order to clear the email space.**

Our purpose when reading instructions such as these is usually to determine what procedures we need to follow, and in what order.

Go back to Reading passage 1, and think about the following questions:

- Would you agree that this passage has features that are common to a set of instructions? If so, what *structure, layout and language features* are generally distinctive to instructional texts like this?
- What *verb form* is mostly used in this kind of text? Is this verb form commonly used in instructional texts? Why?
- Why is a *numbering system* used in a passage like this? Why do you think a graphic has been included?

You probably had no difficulty in answering the questions above. This was because you were able to use your background knowledge of different kinds of reading texts to predict *the structure of the passage*. Because of your background knowledge of instructional or technical passages, you know that they often have certain features. For example, they usually include diagrams; and they also normally have numbers because they are explaining sequenced procedures. Short sentences without any modifiers (such as 'might', 'can', etc.) are also common because instructions aim to give the reader simple but clear information on how to do something.

Your background knowledge of instructional or technical reading passages also helps you to predict *content and vocabulary*. It tells you that you can expect to see the use of particular language such as the imperative verb form (e.g. 'create', 'open', 'click', 'select') because instructions are telling the user what to do. As Reading passage 1 is about computers and email, you are not surprised to find specific vocabulary (such as 'hard disk', 'desktop', 'folder' and 'delete').

By recognizing that this text is set of instructions, we can therefore also predict much of its specific form, layout, and grammatical structures. Similarly, by recognizing that the passage is about email and computers, we can predict much of its content and vocabulary, even before we read it closely.

This is also true for other kinds of reading passages. By orienting ourselves to a passage – that is, recognizing what kind of text it is, and predicting what kind of layout and language it might have – we can begin to comprehend its meaning.

Activity 3.3

Look again at the types of texts you came across in Activity 3.1, and think about the *kinds of structures*, *layouts*, *content* and *language* they might have. In each case, consider whether the text is likely to include graphics, bullets or numbers; how headings and paragraphs might be organized; whether the language will be persuasive or factual; and what sorts of grammatical forms (e.g. different kinds of verb tenses) are likely to be used. Think also about some of the vocabulary that might be used for each topic:

1 a newspaper editorial that is critical of a new government immigration policy

2 a chapter in an accounting textbook that outlines procedures for assessing a client's property tax

3 a memo to student teachers from their lecturer reminding them of suitable behaviour when making school visits and observing classes

4 a journal article that reports on research into the hole in the ozone layer.

List different features and predict some possible language for each passage.

Once you have oriented yourself to a particular reading passage, and predicted some of the sorts of content and language that might be used, you are now ready to *skim read* it.

Skimming a text for its general meaning

Skimming a reading passage means reading it *quickly* to get the *main idea* of the text.

How do we go about this? We can, for example:

1 Look at the *title*. What key words does it include? What does it suggest about the passage?

2 Look at the text's *layout and structure*. Are there numbered parts? Are there sub-headings? Are there boxed pieces of information? Are these labelled? How do sub-headings and any boxed pieces of information relate to the main title? Can you see any progression of ideas?

3 Look at any *figures* or *graphics*. What do they illustrate? Do they relate to the key words in the title and sub-headings?

4 Read the *first* and *last paragraphs* quickly. These often contain the main ideas.

5 Read quickly *the topic sentences* (usually the first sentence) of the other paragraphs. These sentences usually contain the main idea of a paragraph.

6 Set yourself a *time limit*.

You are now going to practise skimming a book review about acupuncture. Remember that your aim is to discover the main ideas quickly, not read and understand every word in the passage.

Before you begin the activity, take a moment to orient yourself to the text and think about the following questions:

1 What do you expect to find in a book review?

2 What do you know about acupuncture? What vocabulary do you think you might find in this passage?

We hope your answer will be roughly similar to ours below:

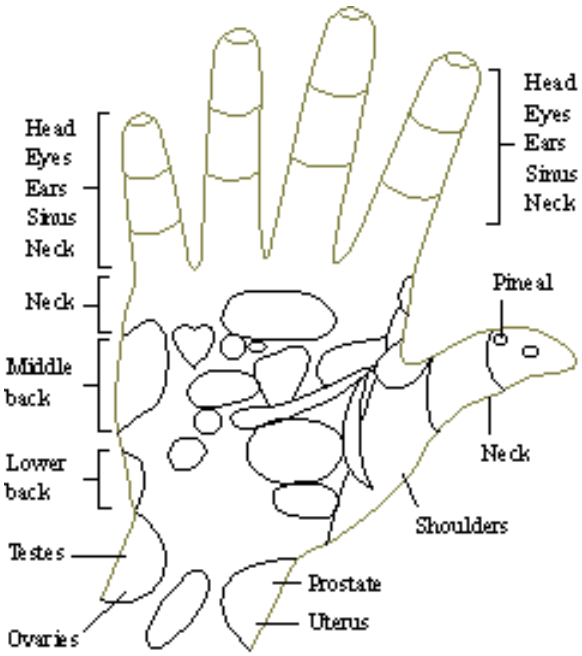
> A book review will describe a book and its contents, move on to a more general discussion of some of the issues raised, comment on the strengths and weaknesses of the book, and suggest what sort of reader might benefit from/enjoy it.
>
> Of course, you may be an expert on acupuncture, but an ordinary person faced with the word 'acupuncture' might predict that the following words could appear in the passage: 'needles', 'Chinese', 'aches and pains', 'giving up smoking', and 'alternative/non-mainstream medicine'.

Activity 3.4

Set yourself a maximum time limit of *two minutes* for reading, and skim the review, using the suggestions above. *After* you have skimmed the book review, answer the questions that follow.

Reading passage 2

Does it really work?



The History of Acupuncture

Orient Press

Coffee table reading

1 Printed on glossy paper, this is an elegant, well-illustrated book. The title, though, is rather a misnomer as after the first chapter the author concentrates on the practice of acupuncture and seeks to promote its use among readers. In this way, the book is a highly partisan one.

2 Acupuncture is no longer something utterly exotic known to only a few. The author tells us that, quite apart from its high reputation in East Asia, more than two million Americans a year undergo acupuncture treatment. Its exact origins are unknown but we have evidence of its use in China for the last two millennia. Treatment, as readers will know, involves the insertion of long thin needles into special points on the body chosen by the acupuncturist depending on the patient's precise ailment.

Restoring the *yin yang* balance

3 What most readers will not know and what is explained most clearly is the theory behind acupuncture. Some very beautiful old diagrams of the body help readers follow the explanation. The health of the body depends on a balance between the forces of *yin* and *yang*,

between the cold, slow and passive and the warm, fast and active. When the balance is disturbed the flow of *qi*, vital energy, along the twenty energy channels of the body, is blocked. The acupuncturist analyses the situation carefully and selects some of the two thousand acupuncture points on the body and by use of the needles unblocks the channels, gets the *qi* flowing again and slowly but surely restores the patient to health.

4 One of the positive aspects of Chinese traditional medicine is that it is holistic. Patients are asked about their lifestyles, diet and sleeping patterns. Where the practitioner thinks necessary, changes will be recommended.

A painless painkiller

5 Naturally, if you, like this reviewer, have not tried acupuncture before you might be anxious about how it feels and any risks involved. The author goes out of his way to reassure. As long as you take the obvious precaution of going to an experienced and qualified acupuncturist (and who would allow just anyone to stick long sharp objects in them?), you should feel no pain and suffer no ill effects.

6 Acupuncture seems to have a wide range of applications. The book discusses the relief of pain at some length and details research supporting its efficacy in relieving victims of osteoarthritis of the knee. It is used to alleviate pain associated with migraine, carpal tunnel syndrome and a diversity of muscular problems. It can help in the rehabilitation of stroke patients, relieve the side-effects of chemotherapy and help with asthma. It is also frequently used in the battle against various types of addiction. The author actually remarks that patients undergoing acupuncture often comment on a general feeling of well-being and an overall improvement in health.

Too good to be true?

7 It was at that point that alarm bells started going off for this reader. How and why are these needles doing so much good and achieving such wonderful results? Yes, the writer has explained about the channels and *qi*, but we know a lot about the human body and there are no energy channels running through it, nor are *yin* and *yang* scientific concepts.

8 This is what the book lacks: a discussion of the scientific status of acupuncture. It seems that not much good research has been done. Plenty of small-scale pieces of work have been done and they should not be ignored, but we await a major study. There is an obvious problem: when you carry out research of this type you need a control group. When a tablet is being investigated it is easy to give the control group a tablet lacking the active ingredient and no one but the researcher knows who is receiving the chemical being tested. You can hardly, however, persuade people they are having needles inserted into them when they are not.

Alternative views

9 In the face of this unsatisfactory situation, a number of theories have been proposed. The most widely accepted seems to be that the needles in some way cause the release of neurotransmitters that in turn trigger pain-killing endomorphins that explain the physical relief and general feeling of comfort mentioned by patients.

10 The main alternative view, towards which your reviewer tends to lean, is that the many successes of acupuncture, and no one denies they do exist, are a consequence of the placebo effect. Acupuncture works because people believe it works. The writer of this book would, however, disagree most strenuously, but at least he should have discussed the matter.

11 Despite these reservations, this is a handsome, well-written book, but it is for your coffee table not your study.

Source of graphic: Fontaine, K L (2005) *Complementary and Alternative Therapies for Nursing Practice*, 2nd edn, Upper Saddle River, NJ: Pearson Prentice Hall, Figure 12.1b.

1 What do the picture, the sub-headings and the layout tell us in this book review?

2 What does the title tell us? Do you think it's a helpful title for describing the main ideas in the review? Why/why not?

3 Having read the first and last paragraphs, what is the reviewer's general view of the book?

Now try practising the skimming skills you have learned with another reading text.

Remember the procedures for skimming a reading passage:

1 Look at the *title*.

2 Look at the *layout and structure*.

3 Look at any *figures* or *graphics*.

4 Read the *first* and *last paragraphs* quickly.

5 Read quickly the *topic sentences* (usually the first sentence) of the other paragraphs.

6 Set yourself a *time limit*.

Activity 3.5

The following reading is a science magazine article about nanotechnology. If you don't know what nanotechnology is, try to guess what this word might mean. ('Nano' means tiny and a 'nanometre' is an incredibly small measurement – one billionth of a metre.) This passage has been written for non-experts. Use your knowledge of magazine writing and of nanotechnology to orient yourself to the possible structure and content of the article, and then use the skimming guidelines above to skim the article. Don't take more than *three minutes* to skim the article. (NB: There are no graphics or sub-headings in this passage, so you need to depend on the first and last paragraphs and the topic sentences of the other paragraphs to get the general meaning of the passage quickly.)

Reading passage 3

The new kid on the block

by J W Carr

1 Nanotechnology is the 'new kid on the block', and as is usual with new ideas or developments, there is a lot of rumour going about, a lot of gossip and innuendo, even some fear. Perhaps it would help if we calm down for a minute and try to get some facts about nanotechnology before we form an opinion on it.

2 First, what is nanotechnology? It is technology on the scale of the nanometre, one billionth of a metre. That is the atomic level (average atomic size is 0.1 to 0.2 nanometres) and the level of DNA (a strand is about 2 nm wide). Why is it special? Apart from being extremely small and being able to get to places we cannot usually go, things are simply not the same at the nano-level. At this level, catalysts can, for example, become far more active, and materials far stronger.

3 When did nanotechnology emerge? The great physicist Richard Feynman imagined it in 1959. It didn't start happening though for another twenty or so years. Two early breakthroughs were the discovery of fullerenes or buckyballs in 1985, and then of carbon nanotubes in 1991. The latter are especially exciting as they are very light and very strong with a multitude of applications.

4 Has nanotechnology really taken off? Yes, there are already hundreds of companies working in the field, a lot of products being planned or produced and laboratories all round the world carrying out research into the field. Billions of dollars are being invested. What changes are we going to see as a result of nanotechnology? That's not entirely predictable because we are discovering things we knew nothing about before and then thinking of ways to use them, but we can confidently look forward to amazing breakthroughs in computers with nano-chips. The implications for medicine are also enormous with 'nano-smartbombs' that can track down and destroy cancers, 'nano-probes' to carry out medical tests and 'nano-messengers' to deliver drugs to different parts of the body, slipping through various immune-system barriers that make this difficult at present. Nanotechnology products also seem to a have lot of potential in cleaning up the environment. There should be new ways to locate and remove dangerous pollutants from water and soil.

More environmentally-friendly catalytic converters and batteries are in the pipeline. Space exploration on a tiny scale will reduce the prohibitive costs of space science. Bullet-proof material should protect people from attack and special sensors may be able to warn us of chemical/biological hazards. No doubt there will be many military uses as well, but we will not claim them as a benefit. More frivolously, a drink is being developed that will change flavour and colour at the wish of the purchaser. Finally as an example of a product that is already on the market, mention can be made of new clear sunscreens that have proved to be highly effective at absorbing harmful rays and can be expected to play a part in reducing skin cancer.

5 New developments for nanotechnology are already on the horizon. In many ways, life itself is a form of nanotechnology and we can learn from biological processes. Bacteria, proteins and viruses may be able to work with nanotechnology. There are plans to 'grow' computer parts inside small organisms. Nano-materials will be able to assemble themselves. They might even be engineered to grow. That has led to a vision of our sending 'nanobots' to the Moon with instructions to prepare it for human colonization.

6 Well, surely, then, this is a 'new kid' we can warmly embrace, but nothing is always that simple and there are, as ever, nay-sayers. Let's address their worries calmly and see if they can possibly outbalance all these benefits. The problem began in 1986, when nanotechnology had hardly been born, with a book called 'The Engines of Creation' in which the author argued that self-replicating robots would take over the world, with disastrous reactions turning the whole planet into a grey jelly. So far it has not happened.

7 What are the other fears? Nano-particles can accumulate in the bodies of animals and do damage. Carbon nano-particles do not set off immune reactions but can actually enter cells; they might therefore be used by bacteria to infect humans. Neutral nano-products might be hijacked and used maliciously by our natural enemies. As the nano-scale makes materials behave differently, we must not assume that the changes are benign; normally useful and harmless substances may become toxic. Nano-materials are not natural to our world. We are creating something new and releasing it in increasing quantities into the environment without knowing the long-term effects.

8 It is difficult to refute these points. It is true that anything in the environment will appear in organisms including ourselves. Somewhere far in the future there might be a scare involving nano-materials, even a mini-outbreak of something we do not like. Naturally we must monitor what is happening as we use these new products. However, none of these add up to sufficient reason to halt the development of nanotechnology. Change in our world is fast and at times we do not feel comfortable with it. It would be nice to sit and debate nuclear energy, engineering or nanotechnology for some years before deciding whether to use it or not. But this is not realistic. The world is not like that. Always trying to stand in the way of progress is a mistake. Yes, someone could have looked at the steam engine and said, 'Let's not use it. We don't really know what the impact will be. People will start burning coal to make steam and

the air will be polluted. And we do not know what the impact of all that water vapour will be.' Well, yes, the coal burning had its downside, yet would anyone, apart from a few dreamers, want to return to a pre-industrial world. There were losses, but surely the gains were greater?

9 Nanotechnology will not be all plain-sailing, but its benefits will far outweigh its drawbacks. You can be confident about that.

Source: *Science Horizons* (2006) April:45–46.

Locating key ideas in a paragraph: using topic sentences

In the passage above, you did not have the benefit of graphics or sub-headings to signal main ideas. Also, the first paragraph doesn't tell us much about nanotechnology, except that it is a new kind of technology and that some people do not know much about it and are even frightened of it. You therefore have to rely on the key information in the other paragraphs to get the main ideas of the text.

We saw in *Module 1* that the topic sentence gives the main idea of a paragraph, and is usually the first sentence in a paragraph. The topic sentences in the nanotechnology text are easy to identify because they are all at the beginning of the paragraphs. Some of them are actually questions which are answered by the rest of the information in the paragraph.

Activity 3.6

Look at the key ideas in each of the topic sentences in the nanotechnology passage. Then match each of the paragraph summaries in the left column below with the paragraph that it describes. One answer has already been given as an example.

Paragraph summaries	**Paragraph #**
a Current applications of nanotechnology	
b Nanotechnology is a very new kind of technology which some people are ignorant and even fearful of.	1
c Other fears and potential health and safety concerns	
d Initial worries and fears about nanotechnology	
e Ultimately, the benefits outweigh the potential risks.	
f Definition of nanotechnology	
g New and possible future developments	
h History of the emergence and development of nanotechnology	
i Fears are valid but they should not stop us from embracing the technology.	

Activity 3.7

Now, go back to Reading passage 2 (the book review 'Does it really work: *The History of Acupuncture*') and skim the topic sentences of the paragraphs. Try to make a skeleton or outline of the text by completing the table below. Use just a few words or a short sentence to describe the main point in each paragraph.

Paragraph #	**Paragraph summaries**
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

Understanding the logic and sequence of ideas in a text

As you completed Activities 3.6 and 3.7, did you notice that the writers used certain conventions for organizing their paragraphs? For example, in Reading passage 3 on nanotechnology, after giving the reader an introduction to the topic, the writer:

- gave a definition;
- provided some background history;
- outlined current uses of nanotechnology;
- suggested possible future uses;
- discussed potential problems or concerns;
- mentioned potential solutions for these concerns; and
- recapped the main idea.

Some conventions for organizing writing logically

In most academic reading texts, writers follow some set rules or conventions for organizing their ideas. For example, a definition of a key topic is usually given at the *beginning* of a passage, and the historical background to a topic *is* described *before* its potential future development is discussed. Also, general points are usually made *before* specific details are provided. Likewise, writers usually discuss solutions *after* they describe a problem. If writers are discussing more than one problem, they often describe and explain each one in a separate paragraph and usually describe a more serious problem *after* a less serious one.

To illustrate some of these conventions, look at the cohesive links in the nanotechnology text.

Reading passage 3

The new kid on the block

1 Nanotechnology is the 'new kid on the block', and as is usual with new ideas or developments, there is a lot of rumour going about, a lot of gossip and innuendo, even some fear. Perhaps it would help if we calm down for a minute and try to get some facts about nanotechnology before we form an opinion on it.

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4 Has nanotechnology really taken off? Yes, there are already hundreds of companies working in the field, a lot of products being planned or produced and laboratories all round the world carrying out research into the field. Billions of dollars are being invested. What changes are we going to see as a result of nanotechnology? That's not entirely predictable because we are discovering things we knew nothing about before and then thinking of ways to use them, but we can confidently look forward to amazing breakthroughs in computers with nano-chips. The implications for medicine are also enormous with 'nano-smartbombs' that can track down and destroy cancers, 'nano-probes' to carry out medical tests and 'nano-messengers' to deliver drugs to different parts of the body, slipping through various immune-system barriers that make this difficult at present. Nanotechnology products also seem to a have lot of potential in cleaning up the environment. There should be new ways to locate and remove dangerous pollutants from water and soil. More environmentally-friendly catalytic converters and batteries are in the pipeline. Space exploration on a tiny scale will reduce the prohibitive costs of space science. Bullet-proof material should protect people from attack and special sensors may be able to warn us of chemical/biological hazards. No doubt there will be many military uses as well, but we will not claim them as a benefit. More frivolously, a drink is being developed that will change flavour and colour at the wish of the purchaser. Finally as an example of a product that is already on the market, mention can be made of new clear sunscreens that have proved to be highly effective at absorbing harmful rays and can be expected to play a part in reducing skin cancer.

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9 Nanotechnology will not be all plain-sailing, but its benefits will far outweigh its drawbacks. You can be confident about that.

Knowledge of some of the conventions writers use to order the logic of their writing can help you to predict the order of arguments or information given in a passage, even an unfamiliar one. Try the following activity to see if you can logically organize an unfamiliar piece of writing about Americans' use of behaviour-changing anti-depressant drugs such as Prozac.

Activity 3.8

The paragraphs in the boxes below have been jumbled and are not in the correct sequence. Look at the paragraphs and then try to put them into the correct order.

The topic sentences of each paragraph provide some clues for ordering the paragraphs, but focus also on reference words such as 'these' and 'it' and the cohesive links they create.

Think about what these words refer to. Remember also that general points usually come before specific details or examples, and more serious problems often come after less serious ones. This exercise is intended to help you focus on the structure of the passage and on how the writer uses some of the conventions described above to order the passage logically.

As you sequence the paragraphs, try to remember the reasons for your choices.

a Modern Western medicine is sometimes blamed for being more interested in handling symptoms than investigating and dealing with their causes. This certainly seems to be the case with these drugs. A child is hyperactive and disruptive at school, so he is given pills to make him conform. As the reason for the problem has not been addressed, the treatment will probably have to continue indefinitely. As time goes by, the drug will have less effect and the dosage may be increased or recourse had to another one. All this time, the possibility will remain that it might have been the school and its attitudes that were at fault. No one is complaining though as chemical peace reigns.

b With all these doubts about these drugs and their side-effects – as well as the manic episodes mentioned, such as nausea, sleeplessness and loss of appetite – why are they used so widely?

c There is no question that Lithium and Prozac have done a lot of good for a lot of people, but some question the cost. They say that these drugs work by limiting patients' emotional range. They question whether people should be going through life sedated and feeling less than is normal. This might be good for those suffering from extreme manias and disturbances, but should so many of the population be using them?

d Are Americans becoming over-dependent on behaviour-changing chemicals? That is a question that many people in the States are asking. Sales of anti-depressant drugs are now worth more than twelve billion dollars a year. Thirty million people take them regularly and controls on many are minimal. You can log on to an Internet pharmacy, answer a few questions from a medical consultant and then be sent your prescription. Drugs like Prozac, the best known of the family of SSRIs, or selective serotonin reuptake inhibitors, which increase the amount of serotonin in the brain, are

used to calm the young, cheer up the middle aged and tranquillize the aged.

e What may be even more alarming, according to critics, is the possibility that the outbursts of rage and anger might be directed outwards. Courts have accepted that murders have been carried out as a result of adverse reactions to anti-depressants and there is some evidence linking them to the horrific school massacres one rather too frequently reads of as having taken place in the USA. It is amazing then to hear that some states are considering having all their children psychologically screened, a procedure that is bound to lead to many more being put on a course of drugs. Schools are in most cases allowed to make this a condition of attending school.

f Or does it? One difficulty with such lucrative drugs as these is that there are powerful vested interests in favour of them and reluctant to hear any criticism. Advertising from drug companies was worth over three billion dollars in 2003 and continues to increase. Unless an editor has overwhelming reason to think there is a real problem, s/he is not going to do anything to alienate such lavish advertisers. An example of this came a couple of years ago. After reviewing the evidence, the British government concluded that some of the SSRIs caused young people to suffer restlessness and sudden outbursts of mania that might lead to suicide. Their prescription to under-18s was forbidden. The American press did not make a big issue of this, and it took the American authorities quite some time to agree that the drugs might cause an increased risk of suicide attempts, even if not of actual suicides. A warning was accordingly put on the drugs. To be fair, their advocates pointed out that the drugs were only given to rather disturbed individuals and that overall since the introduction of SSRIs, the suicide rate among the young, related or unrelated to that event, had fallen.

Discourse markers

In *Module 1*, we saw how academic writing uses discourse markers to organize ideas and demonstrate relationships between them. Discourse markers can signal examples, a sequence, a cause and an effect, or a similarity or contrast. For example, words such as ‘however’, ‘on the other hand’ and ‘though’ may be used between two sentences to show that one idea is in contrast to another. Notice how in the introduction to the book review in Reading passage 2 the word ‘though’ is used to indicate a criticism:

This is an elegant, well-illustrated book, printed on glossy paper. The title, *though*, is rather a misnomer as after the first chapter the author concentrates on the practice of acupuncture and seeks to promote its use among readers.

Here are some other common discourse markers.

Function	**Discourse markers**
Exemplifying	‘for example’, ‘for instance’, ‘such as’
Generalizing	‘on the whole’, ‘by and large’, ‘basically’, ‘in general’
Joining or adding ideas	‘and’, ‘also’, ‘additionally’, ‘furthermore’, ‘moreover’, ‘as well’
Noting similarity	‘similarly’, ‘in the same way’, ‘likewise’
Noting difference	‘however’, ‘in contrast’, ‘on the other hand’, ‘though’
Signalling cause and effect	‘therefore’, ‘so’, ‘as a consequence’, ‘consequently’, ‘as a result’, ‘thus’
Sequencing stages or procedures	‘first’, ‘secondly’, ‘fifthly’, ‘lastly’, ‘after this’, ‘then’
Summing up	‘in short’, ‘in conclusion’

Activity 3.9

Look now at paragraph 8 in Reading passage 3 (on nanotechnology). Notice the discourse markers that are used in this paragraph to signal ideas that are contradictory, and then complete the following table. An example has been included for you.

Idea	**Discourse marker signalling contrast**	**Opposing idea**
We must monitor what is happening as we use new nanotechnology products	However	Our concerns are not sufficient reason for stopping the development of nanotechnology
It would be good to debate the safety concerns of nanotechnology before deciding whether to use it or not		
Coal burning had its problems and concerns		
The early industrial world had its losses		

To sum up what we have learned in this section, you can identify the main points of a reading passage by:

- *Orienting yourself to the passage:* Look at it carefully. Identify what sort of writing it is and think about what the text is trying to achieve (e.g. giving instructions, giving an opinion, reporting research).
- Using clues like the *title*, *sub-headings* and *graphics* to get a clear picture of the main topic. Start to generate expectations, and recall what you know about the topic.
- *Skimming quickly* through the passage, paying special attention to the title, the beginning, and the end.
- Focusing on the *topic/first sentences of paragraphs*.
- Thinking about the *logic of the passage* and considering how *relationships between ideas and paragraphs are ordered and organized*.
- Taking note of *discourse markers* to determine the relationship between ideas.

Reading intensively

Having used a number of strategies to grasp the main points of a text, we now look at how to read more intensively. Reading intensively also involves a number of particular skills, which include:

- being able to *scan* (or locate *specific information)*;
- using strategies for understanding the meanings of *unfamiliar words*;
- identifying *synonyms* and related words in a passage;
- gaining meaning from *long* and *complex sentences*; and
- being able to *identify examples* and *supporting information*.

Scanning

Scanning involves identifying specific information quickly. This information might be numbers, measurements, a person's name, a place, or a technical word or phrase. Scanning is the technique you often use when looking up a name in the telephone book or a word in the dictionary. In most cases, you know what words you are looking for, and so you can concentrate on finding particular information, rather than on trying to get the general meaning of a paragraph. Generally, scanning is a technique that is helpful when you are looking for the answer to a known question. Here are some strategies for scanning efficiently:

1 Use your knowledge of a text's organization to direct your search for a word. For example, if you are scanning for a definition of a key topic, it is likely that you will be looking in the earlier (rather than the later) paragraphs of a passage.

2 If you have skimmed a passage, use your knowledge of its main ideas to guide your scanning.

3 To scan a reading text, you should start at the top of the page and then move your eyes quickly towards the bottom.

4 Look for capital letters when trying to locate a name or place.

5 Numbers are often in numeric – rather than alphabetic – form, and so are usually easy to find.

6 If you are scanning for information to answer a test question, make sure that you note exactly what the key word in the question is (remember its spelling and don't confuse it with other similar words).

7 Set yourself a time limit.

The following activity asks you to scan for specific information in part of the nanotechnology text.

Activity 3.10

Scan the excerpt below from Reading passage 3 for the information that answers these questions:

1 What is nanotechnology? (*Hint*: In which part of the text are you most likely to find a definition or an initial explanation of the main topic?)

2 How wide is a strand of DNA? (*Hint*: Note that you are looking for a number or measurement, which will be located close to the words 'strand' and 'DNA', or their synonyms.)

3 Who was the first scientist to pioneer nanotechnology? (*Hint*: You are looking for a name with capital letters.)

4 When did nanotechnology first emerge as a science? (*Hint*: You are looking for a date.)

Reading passage 3

The new kid on the block

Nanotechnology is the 'new kid on the block', and as is usual with new ideas or developments, there is a lot of rumour going about, a lot of gossip and innuendo, even some fear. Perhaps it would help if we calm down for a minute and try to get some facts about nanotechnology before we form an opinion on it.

First, what is nanotechnology? It is technology on the scale of the nanometre, one billionth of a metre. That is the atomic level (average atomic size is 0.1 to 0.2 nanometres) and the level of DNA (a strand is about 2 nm wide). Why is it special? Apart from being extremely small and being able to get to places we cannot usually go, things are simply not the same at the nano-level. At this level, catalysts can, for example, become far more active, and materials far stronger.

When did nanotechnology emerge? The great physicist Richard Feynman imagined it in 1959. It didn't start happening though for another twenty or so years. Two early breakthroughs were the discovery of fullerenes or buckyballs in 1985, and then of carbon nanotubes in 1991. The latter are especially exciting as they are very light and very strong with a multitude of applications.

Strategies for understanding the meanings of unfamiliar words

There are two main strategies for understanding the meaning of words that you don't know:

- using the *context* of the word to guess its meaning
- using your existing knowledge of *word roots*, *prefixes* and *suffixes.*

Using an unfamiliar word's context

When you come across an unfamiliar word, you can understand its meaning by looking at the words *before* and *after* it and the *sentences around it*.

For example, consider the meaning of 'carbon nanotubes' in the following paragraph:

> When did nanotechnology emerge? The great physicist Richard Feynman imagined it in 1959. It didn't start happening though for another twenty or so years. Two early breakthroughs were the discovery of fullerenes or buckyballs in 1985, and then of carbon nanotubes in 1991. The latter are especially exciting as they are very light and very strong with a multitude of applications.

'Fullerenes' and 'buckyballs' are also unfamiliar technical words and they don't help us much, but the next sentence gives us some clues and tells us that 'carbon nanotubes' have particular qualities and uses.

Next let's practise our skills to work out the meaning of some less common words in a longer passage.

Activity 3.11

Refer to Reading passage 4 'America and drugs' below. Scan for the following words, then find clues to understand what each word means by looking at the context of each word:

By paragraph:

1 minimal

2 sedated

3 hyperactive, conform, dosage

4 alienate, lavish, advocates

6 nausea

Reading passage 4

America and drugs

1 Are Americans becoming over-dependent on behaviour-changing chemicals? That is a question that many people in the States are asking. Sales of anti-depressant drugs are now worth more than twelve billion dollars a year. Thirty million people take them regularly and controls on many are minimal. You can log on to an Internet pharmacy, answer a few questions from a medical consultant and then be sent your prescription. Drugs like Prozac, the best known of the family of SSRIs, or selective serotonin reuptake inhibitors, which increase the amount of serotonin in the brain, are used to calm the young, cheer up the middle aged and tranquillize the aged.

2 There is no question that Lithium and Prozac have done a lot of good for a lot of people, but some question the cost. They say that these drugs work by limiting patients' emotional range. They question whether people should be going through life sedated and feeling less than is normal. This might be good for those suffering from extreme manias and disturbances, but should so many of the population be using them?

3 Modern Western medicine is sometimes blamed for being more interested in handling symptoms than investigating and dealing with their causes. This certainly seems to be the case with these drugs. A child is hyperactive and disruptive at school so he is given pills to make him conform. As the reason for the problem has not been addressed, the treatment will probably have to continue indefinitely. As time goes by, the drug will have less effect and the dosage may be increased or recourse had to another one. All this time, the possibility will remain that it might have been the school and its attitudes that were at fault. No one is complaining though as chemical peace reigns.

4 Or does it? One difficulty with such lucrative drugs as these is that there are powerful vested interests in favour of them and reluctance to hear any criticism. Advertising from drug companies was worth over three billion dollars in 2003 and continues to increase. Unless an editor has overwhelming reason to think there is a real problem, s/he is not going to do anything to alienate such lavish advertisers. An example of this came a couple of years ago. After reviewing the evidence, the British government concluded that some of the SSRIs caused young people to suffer restlessness and sudden outbursts of mania that might lead to suicide. Their prescription to under-18s was forbidden. The American press did not make a big issue of this, and it took the American authorities quite some time to agree that the drugs might cause an increased risk of suicide attempts, even if not of actual suicides. A warning was accordingly put on the drugs. To be fair, their advocates pointed out that the drugs were only given to rather disturbed individuals and that overall since the introduction of SSRIs, the suicide rate among the young, related or unrelated to that event, had fallen.

5 What may be even more alarming, according to critics, is the possibility that the outbursts of rage and anger might be directed

outwards. Courts have accepted that murders have been carried out as a result of adverse reactions to anti-depressants and there is some evidence linking them to the horrific school massacres one rather too frequently reads of as having taken place in the USA. It is amazing then to hear that some states are considering having all their children psychologically screened, a procedure that is bound to lead to many more being put on a course of drugs. Schools are in most cases allowed to make this a condition of attending school.

6 With all these doubts about these drugs and their side-effects – as well as the manic episodes mentioned are nausea, sleeplessness and loss of appetite – why are the drugs used so widely?

Using word form knowledge to guess the meaning of words

This means looking for possible similarities between known and unfamiliar words. It also involves using knowledge of a word's Latin, French or Greek roots and of its prefix (first syllable) or suffix (last syllable). For example, in the book review in Reading passage 2, the writer refers to the title of the book as being a 'misnomer'. What does the writer mean by this word? You can probably guess its meaning by breaking it up into its parts:

mis + *nom* + er

The root (or main part of the word) is 'nom'. Can you think of other words that use this root? (We thought of '*nom*inal' and '*nom*ination'.) This root comes from Latin and means 'name'.

The prefix mis- comes from French and is used in many English words (e.g. '*mis*take', '*mis*pronounce', '*mis*conception'). Based on your knowledge of the root and the prefix of the word 'misnomer', do you think a title which is a 'misnomer' is appropriate or inaccurate?

Having some knowledge of the meaning of common roots, prefixes and suffixes can help you to guess the meaning of many unfamiliar and technical words. Here is a list of some of the more common and productive prefixes and suffixes.

Prefixes	**Meanings**	**Examples**
a-	negative	'atypical'
ante-	before	'antenatal'
anti-	against	'antibiotic'
astro-	star	'astronomy'
auto-	self	'automobile' (self-moving)'

bi-	two	‘bicycle’
bio-	life	‘biotechnology’
chron-	time	‘chronicle’
co-/com-	together	‘collaborate’ (labour together)
contra-	against	‘contradict’ (speak against)
de-	away from	‘depart’
di-	two	‘divide’
dis-	negative	‘disappear’
eco-	home	‘ecology’ (study of habitats)
ex-	out of	‘exit’
graph-	writing, marking	‘geography’ (study of the Earth)
gyn-	woman	‘gynaecology’ (study of women, medical)
hemi-	half	‘hemisphere’
hetero-	other	‘heterosexual’
homo-	same	‘homogeneous’ (same type)
hydro-	water	‘hydroelectric’
hyper-	above	‘hyperactive’
hypo-	below	‘hypodermic’ (below the skin)
im-/in-	negative	‘impossible’
kine-/cine-	movement	‘cinema’
lum-	light	‘luminous’
meg-	great	‘megabyte’
metre-	measure	‘metric’
micro-	small	‘microwave’
mis-	incorrect	‘mispronounce’
mono-	one	‘monotonous’
nano-	tiny	‘nanotechnology’
paed-/ped-	child	‘paediatric’ (child medicine)
ped-	foot	‘pedal’
pan-	all	‘panacea’ (cure all)

photo-	light	‘photography’
poly-	many	‘polygamy’ (many wives)
post-	after	‘post-modern’
pre-	before	‘pre-historic’
psycho-	mind	‘psychology’
retro-	backwards	‘retrograde’
super-	above/beyond	‘supermarket’
sym-/syn-	together	‘synergy’ (working together)
tele-	far	‘television’ (see afar)
thera-	healing	‘physiotherapy’ (body healing)
therm-	heat	‘thermal’
trans-	across	‘transport’ (carry across)
tox-	poison	‘toxic’
uni-	one	‘uniform’ (one type)
xeno-	foreign	‘xenophobia’ (dislike of foreigners)

Suffixes	**Meanings**	**Examples**
-cide	death/killing	‘suicide’ (self-killing)
-crat/-cracy/-archy	ruling	‘democracy’ (rule by the people)
-escent	becoming	‘adolescent’ (becoming adult)
-itis	disease	‘bronchitis’ (disease of breathing tubes)
-logy	study	‘biology’
-mania	madness/obsession	‘manic-depression’
-oid	shaped like	‘spheroid’
-path	feeling	‘sympathy’ (feeling with)
-phil	love	‘sinophile’ (lover of Chinese things)
-phobia	fear	‘claustrophobia’ (fear of small spaces)
-phone	sound	‘phonetics’
-proof	able to withstand	‘waterproof’ (keeps out water)

Activity 3.12

Try to work out the meaning of these words from their roots, prefixes and suffixes:

1 anarchy

2 autobiography

3 luminescent

4 foolproof

5 psychotherapy

6 deformation

7 megalomania

8 chronometer

9 misogynist

10 monologue

11 antipathy

12 disqualification

13 hydrological

14 psychokinetic

15 hypothermia

Identifying possible synonyms for key words and phrases

If you are reading a passage to answer a comprehension question or to check a fact, you usually need to read intensively to find specific information. Sometimes this process simply involves scanning for a specific word. Sometimes, however, it also involves scanning a passage for a *synonym* of a key word or phrase.

For example, imagine that you were reading the following paragraph from the 'America and drugs' text in order to answer the following comprehension question:

> TRUE or FALSE: 'Anti-depressants are being used in America to make young people better behaved and to make people in their 40s and 50s feel happier.'

America and drugs

Are Americans becoming over-dependent on behaviour-changing chemicals? That is a question that many people in the States are asking. Sales of anti-depressant drugs are now worth more than twelve billion dollars a year. Thirty million people take them regularly and controls on many are minimal. You can log on to an Internet pharmacy, answer a few questions from a medical consultant and then be sent your prescription. Drugs like Prozac, the best known of the family of SSRIs, or selective serotonin reuptake inhibitors, which increase the amount of serotonin in the brain, are used to calm the young, cheer up the middle aged, and tranquillize the aged.

In the above paragraph, most of the key words in the true-or-false question weren't used. If you were scanning the paragraph for phrases such as 'better behaved', 'people in their 40s and 50s' or 'feel happier', you would not find them. However, you can find *synonyms* for these phrases (e.g. 'the middle aged' has the same meaning as 'people in their 40s and 50s' and 'cheer up' has the same meaning as 'feel happier').

Therefore, when you are searching for specific information in a reading text, you need to look for *indirect* references, as well as literal or direct references, to key words and phrases. To practise this skill, try the following activity.

Activity 3.13

The paragraph below discusses computer viruses. Find words and phrases in the paragraph that mean the same as the ten synonyms in the left column below. The answers should be in the same order as they appear in the text.

	Synonym	**Word in passage**
1	joined	
2	continuous	
3	unpleasant	
4	difference	
5	forms	
6	frequently used	
7	careful	
8	harmful	
9	software that harms	
10	odd	

Computer viruses

Any computer connected to the Internet is under constant attack. This is a grim fact of cyberlife. Viruses and worms (the distinction is almost lost now) arrive in various guises and can cause serious damage. Messages about email that cannot be delivered and prizes we have won are common ways to get themselves on a computer. The wary know never to open them and to delete at once. Trojan horses are an ever-present danger allowing your machine to be remotely controlled from afar. Spyware is as nasty as it sounds along with its slightly less noxious cousin adware. Downloading free software is a risky business nowadays as often some malware gets in at the same time. These programmes slow down your computer, make your web browser behave in peculiar ways and generally degrade the performance of your machine.

Academic reading often involves being able to cope with long and complex sentences. We now discuss some strategies that can help you unpack or simplify complex sentences.

Unpacking complex sentences

As you saw in *Module 1*, conjunctions such as 'while', 'and', 'but', etc. are used to subordinate (or join) two or more short sentences into a longer, *complex* sentence. Complex sentences that use coordination or subordination are a key element of academic writing, and allow the writer to express more sophisticated or complicated ideas by linking clauses. In most complex sentences, one clause usually carries more meaning or importance than the other parts of the sentence. For example, in the following sentence, the second half carries the stronger meaning:

> Although there has been a great deal of research, *a vaccine has not yet been found*.

Being able to 'unpack' complex sentences and identify their main clauses is a key skill in reading intensively, as it helps you to determine the main ideas and establish a writer's main arguments.

Recognizing concession

In academic arguments, writers often acknowledge (or 'concede') that there is more than one point of view. To signal differences in opinion, writers often express two points of view by combining two contrasting clauses in one complex sentence. They also often signal to the reader that one point of view has *more importance* than the other by placing the less important view *first* in the sentence – often preceded by a preposition that indicates some concession to a different or opposing argument.

Preposition signalling concession	**Contrasting opinion**	**Main opinion or argument**
While	many people may be frightened of the possible dangers of nanotechnology,	we should not be reluctant to embrace its many potential uses.
Although	coal-burning has its downside,	few people would want to return to pre-industrial life.
Despite the fact that	anti-depressants have a number of side-effects and potentially carry health risks,	they are widely used by people of all ages in America.

As well as indicating a concession to another opinion, complex sentences can also include a concession to a contrasting fact. For instance, in the following example, the first clause gives some facts but then emphasizes contradictory information. The second (*italicized*) conveys the main point in the complex sentence:

> Although tests have not been completed, *permission has been given for the wider use of the new drugs.*

Activity 3.14

Examine the following complex sentences and, *in your own words*, paraphrase the *main opinion or argument*.

1 Regardless of the fact that severe piracy laws have been enforced, pirated CDs and DVDs are widely available in shops and markets.

2 Although it is certainly not impossible, the theory may not strike one as especially plausible.

3 Despite many people's desire to believe that life exists on other planets, there are no clear scientific signs that extra-terrestrial life exists.

Identifying examples

In addition to recognizing a writer's concession to an opposing fact or argument, it is also important to be able to recognize how writers use examples to support their opinions.

Discourse markers that are used to identify an example include:

For example,

For instance,

This is indicated by …

This is shown by …

The order of sentences in a paragraph also helps us to distinguish examples from the main opinion. Generally, writers give their main point or argument first, and then follow this with examples to support the argument. For instance, look again at the following paragraph from the 'America and drugs' passage:

> Modern Western medicine is sometimes blamed for being more interested in handling symptoms than investigating and dealing with their causes. This certainly seems to be the case with these drugs. A child is hyperactive and disruptive at school so he is given pills to make him conform. As the reason for the problem has not been addressed, the treatment will probably have to continue indefinitely. As time goes by, the drug will have less effect and the dosage may be increased or recourse had to another one. All this time, the possibility will remain that it might have been the school and its attitudes that were at fault. No one is complaining though as chemical peace reigns.

Activity 3.15

In the paragraph below (which also discusses the use of anti-depressants in America):

- underline the main argument;
- highlight any discourse markers that signal to the reader that an example is being given; and
- list specific examples that support the writer's main argument.

> What may be even more alarming, according to critics, is the possibility that people taking anti-depressants might direct outbursts of rage and anger outwards towards others. This claim has been given some credence by the fact that courts have accepted that murders have been carried out as a result of adverse reactions to anti-depressants. There is also evidence linking anti-

depressants to horrific high-school massacres that have taken place in the USA.

To sum up what we have learned in this section, you can *read intensively* and *locate specific* information in the following ways:

- Scan for specific information. Use your knowledge of a text's organization to direct your search for a word; start at the top of the page and then move your eyes quickly towards the bottom; and look for clues that signal names, dates, places or technical words.
- Work out the meaning of an unfamiliar word or phrase from its context. Look at the words and sentences around the unfamiliar word.
- Use knowledge of word forms, word roots, prefixes and suffixes to understand the meaning of an unfamiliar word.
- Identify possible synonyms for key words and phrases.
- Unpack complex sentences to identify their key ideas. Look for words or phrases that signal concessions or conflicting facts and arguments.
- Identify examples and distinguish supporting information from main points. Look for discourse markers that signal examples and use your knowledge of a paragraph's logical structure to locate the main idea and its supporting examples or evidence.

Identifying an author's opinions, attitudes and bias

Having used a number of ways to read intensively and locate specific information, we now consider skills and strategies which help us to read *critically* and *analytically*, to determine a writer's *opinion*, *attitude* and *bias*. We look first at how to determine a writer's attitude and assess whether it is positive or negative, subjective or neutral, certain or tentative. We also look at strategies for identifying the *intended audience* of a piece of writing.

Identifying a writer's attitude

You can establish the attitude of a writer (and of people mentioned in a text) by looking at the vocabulary that is used to describe the key incidents, ideas or beliefs.

Signals of positive and negative attitudes

Emotive verbs, adjectives and adverbs often signal a writer's attitude to the topic. These may be *negative* ('awful', 'regrettable', 'nasty') or *positive* ('magnificent', 'splendid').

For example, look at how the negative and emotive underlined words in the passage below connote the author's belief that viruses are dangerous and a serious problem.

Computer viruses

Any computer connected to the Internet is under constant attack. This is a grim fact of cyberlife. Viruses and worms (the distinction is almost lost now) arrive in various guises and can cause serious damage. Messages about email that cannot be delivered and prizes we have won are common ways to get themselves on a computer. The wary know never to open them and to delete at once. Trojan horses are an ever-present danger allowing your machine to be remotely controlled from afar. Spyware is as nasty as it sounds along with its slightly less noxious cousin adware. Downloading free software is a risky business nowadays as often some malware gets in at the same time. These programmes slow down your computer, make your web browser behave in peculiar ways and generally degrade the performance of your machine.

Sometimes, however, a writer takes neither a strongly negative nor strongly positive attitude. In these cases, the writer's opinion can be called 'neutral'. Compare the strongly negative tone in the paragraph above with the neutral tone in the following paragraph.

Computer viruses

Any computer connected to the Internet may be affected by a virus. Viruses and worms come in different forms and can alter a computer's operation. Trojan horses are viruses that allow a computer to be remotely controlled. Spyware and adware are other kinds of viruses. These programmes can reduce the operating speed of your computer, and make the web browser behave in unusual ways.

As well as expressing a positive, negative or neutral attitude, writers can express varying degrees of certainty about their topic or opinions.

Assessing a writer's level of certainty

A writer's attitude may be certain or uncertain.

Adverbs and prepositional phrases that signal *certainty* include:

Undoubtedly, …

Clearly, …

Without question, …

Noun phrases that use strong adjectives such as 'a definite problem', 'clear facts', or 'undeniable and indisputable evidence' signal a high degree of certainty.

In contrast, auxiliary modal verbs such 'seem', 'may', 'appear', 'might', and adverbs such as 'perhaps' soften an argument and make the writer seem *less* certain. Also, verbs such as 'suggest' and 'indicate' can also make a statement more tentative and less certain.

Activity 3.16

The paragraph below discusses whether life exists on other planets. What is the author's attitude to this issue? Underline any words that help you to determine the writer's attitude to the question of life on other planets. How certain is the author of his/her opinions?

Astrobiology

In the history of humankind's thinking about itself, one thing is very clear. We began by assuming we were unique and we have gradually realised this is an illusion. Earth is not the centre of the Solar System. We are not unrelated to other animals. We are not the only animals that use tools and have ways of communicating. Our Sun is not an especially impressive star. There are inconceivably many more galaxies than ours. Many stars have planets. It is highly likely that our belief that life is unique to Earth is also going to be proved wrong. The signs are already there.

Activity 3.17

Now read the passage that the above paragraph was taken from (Reading passage 5 below) and note the degree of certainty in the other paragraphs. Mark the following statements as 'very sure' or 'not completely sure' according to the passage. Remember to look for words that express doubt – for example, 'maybe', 'possibly', 'could', 'might' and 'seem' – or certainty, such as 'definitely', 'it is clear that', 'obviously' and 'fact'.

Statement	**Very sure**	**Not completely sure**
1 Mars is cold and dead.		
2 Some bacteria can survive in deep ice.		
3 Large colonies of bacteria live far beneath Earth's surface.		
4 Red giants produce organic molecules.		
5 Difficult conditions help the formation of life.		
6 Evolution would lead alien life towards intelligence.		
7 We have not detected any external intelligent radio activity.		
8 Intelligence is not stable.		

Reading passage 5

Astrobiology

1 In the history of humankind's thinking about itself, one thing is very clear. We began by assuming we were unique and we have gradually realised this is an illusion. Earth is not the centre of the Solar System. We are not unrelated to other animals. We are not the only animals that use tools and have ways of communicating. Our Sun is not an especially impressive star. There are inconceivably many more galaxies than ours. Many stars have planets. It is highly likely that our belief that life is unique to Earth is also going to be proved wrong. The signs are already there.

2 A few years ago one of the principal arguments supporting the idea that life might be an extremely rare phenomenon was its fragility. The list of requisites was deemed to rule out most places: liquid water, a narrow temperature range, protection from harmful rays and even ultra-violet light that breaks up organic molecules, and freedom from bombardment from space debris. Finding such a place was likely to be very difficult. A view of our own neighbours underlined the problem. Mercury suffers terrible extremes of heat and cold and

any liquid must have long been boiled off by the Sun. Venus is a hydrocarbon furnace. Mars appears to be cold and dead. The planets beyond that are gas giants with incredible pressures and temperatures close to absolute zero.

3 Gradually, however, we have become aware that there are many types of bacteria that thrive in places we thought automatically dead. We have found bacteria that have been locked away for millenia in deep polar ice but have still been able to revive. We have found entire ecosystems around thermal vents in the deepest oceans. We have found bacteria in the planetary rock at depths we never imagined possible and even now wonder if there are large colonies living kilometres below the surface. Such endoliths could be active in any of the rocky planets or moons of the solar system. A deep, hot biosphere could even be present on our Moon.

4 Now that they can look at Mars in more detail many astrobiologists expect us sooner or later to find life on the planet. We have discovered there is water on or just below the surface and that once there was lot of surface water there. Ages ago, Mars was warm and wet. Life may well have appeared and hung on in hidden niches below the surface. Subterranean bacteria could explain the rather puzzling presence of methane in the Martian atmosphere. Some even believe a meteorite from Mars found in 1996 already contains evidence of bacterial activity on the red planet. Certainly the presence of magnetite crystals is puzzling.

5 According to some scientists, Earth was seeded with life from outer space. It could have been a rock from Mars or a comet. On the whole, objects falling from the sky are more likely to have on occasions stopped life in its tracks or driven organisms to extinction, and the conditions they undergo when falling through the atmosphere are likely to tax even the most extreme bacteria, but it is true that red giants produce organic molecules and that amino acids have been found on meteorites. The theory may not strike one as especially plausible, but it is certainly not impossible.

6 It may be that what we think of as relatively inhospitable conditions may actually be conducive to the formation of life. Three billion years ago the Earth was far cooler and the top 300 metres of the ocean may have been frozen solid. Down below, possibly near the thermal vents mentioned earlier, organic molecules could have developed safe from any disturbance by ultraviolet light. Similarly, life might have developed in the heat and chemicals suspected to exist beneath the icy surfaces of the gas giant's moons.

7 If life can develop and flourish in environments that we once thought to be hostile, if organic compounds are scattered around the cosmos and if bacteria can travel across space, the chances of life having developed in other places than our home planet seem greatly enhanced and, considering the number of planetary systems there are likely to be, it seems next to certain that biological activity is going on in numerous places.

8 Some people, however, are disappointed when they realize that astrobiology is talking in the main of extremely simple bacterial levels of life. They want to know if intelligent life exists. Fascinating

(and, of course, dangerous) as it would be to encounter alien bacteria, communicating with another species would be a thousand times more stimulating. If life has the potential to develop that has been suggested above, it is reasonable to assume that evolution would guide it to more complex forms and some of those would be intelligent. Despite all our efforts, however, to detect radio activity from an intelligent species, we have found nothing. Maybe we have not been looking long, hard or far enough or maybe the reason is a more sinister one. Could it be that our sort of intelligence is not stable? We almost destroyed ourselves with nuclear weapons in the twentieth century, and there are signs that we are now destroying our own ecosystem. Possibly life forms such as whales or ants have the potential to last much longer. Maybe the sort of species that pours out radio signals simply doesn't last long or all sign of it is dissipated into space. Let's hope it is not true, but if we do find life elsewhere than Earth, we need to start worrying why there are no signs of our counterparts.

Determining the intended audience of a text

Module 1 showed that academic writing uses nominalization, formal vocabulary and depersonalized actions to create an academic register or style. Although there are general conventions for writing in an academic style or register, it's also important to remember that such writing can vary according to its *intended audience*. For instance, if a writer is writing for a specialist audience (say in an academic journal or a highly specialist textbook), he/she is likely to assume that the audience already knows quite a bit about the topic and will probably use a lot of technical or specialist vocabulary. If, on the other hand, the writer is writing for a general or non-expert audience, he/she will use less specialist vocabulary, will define or explain uncommon words, and will not assume too much knowledge of the topic.

Other factors – such as the audience's age, sex, race, education level, profession and so on – also influence the use of academic language. For example, a textbook for Secondary 3 students will obviously be written (and illustrated) in a very different way from a report written for PhD candidates or senior professionals.

Activity 3.18

Look again at Reading passage 5. Who do you think is the intended audience for this passage? How do you know?

1 Do you think the writer has written this passage for a *specialist* or a *general* audience?

2 How much knowledge of the topic does the writer assume?

3 To what extent does the writer define or explain uncommon or technical words?

As a way of summing up what you have learned in this section, please now turn to Reading passage 6, which is concerned with the debate on the genetic engineering (GE) of food and crops. As you read, consider the following:

- What is the author's attitude to GE? Is the writer in favour of GE, against GE, or neutral on the topic? Remember to look for strong adjectives that signal a positive or a negative view.
- How certain or tentative is the writer in his/her opinion? Remember to look for adverbs and modals that soften opinions such as 'perhaps', 'may', 'might', and for verbs that signal a tentative opinion such as 'suggest' and 'indicate'.
- What audience do you think this passage was written for? How do you know? Remember to think about the level of assumed knowledge, the extent to which specialist language is used, and the degree to which the writer explains or defines uncommon or technical words.

Reading passage 6

To engineer or not to engineer

One of the most controversial of modern technological breakthroughs has been that of genetic engineering, especially the ability to splice the genes of one organism into those of another so producing a new, 'improved' variety all the more capable of meeting human needs. Humans had long modified crops and animals by means of selective breeding, but now far faster and more dramatic alterations to organisms have become possible. This has ignited a fierce debate.

II

The first thing any supporter of the genetic modification of crops will do is list some of the products of this engineering. We have rice that yields more, produces Vitamin A, can grow in a salty environment, can withstand stress and resist the ill-effects of chemicals sprayed to kill weeds, insect pests and harmful bacteria. We have potatoes with more protein, which bruise less and can withstand insect and viral attack. We have soybeans that are less allergenic, contain more oil, can withstand the cold, grow in soil with metallic content and survive spraying for weeds and insects. There are

tomatoes which resist viral and fungal attacks, have a longer shelf-life and contain more anti-oxidants (thought to reduce the risks of cancer). New peppers have more flavour and resistance to viruses, and there are strawberries that can be grown in colder places, fight fungal infection and last longer (an important factor in getting soft fruit to market). These modifications and others are helpful to farmers, businesses and consumers (see Table 1).

Table 1

Benefit to farmers	**Benefit to business**	**Benefit to consumers**
• Plants that can be sprayed with pesticide without ill-effect • Plants naturally resistant to: insects, bacteria, viruses, fungal infection • Plants that can withstand: cold, stress, salty conditions, metals, drought • Plants with improved nitrogen fixation • Plants with increased yields	Produce with: • altered oil content • increased shelf-life • less bruising	Produce with increased: • flavour • vitamins • anti-oxidants • protein. Produce less likely to trigger allergies

There have also been modifications to farm animals with, for example, cows that produce milk ideal for cheese, pigs with less fat in their meat, and faster growing salmon.

In the face of all these benefits, the pro-GM camp cannot understand why anyone should not be delighted. They take the general view that new advances are, like accused people, deserving of the benefit of the doubt and should be regarded as innocent until proved guilty. Until and unless there is a problem, which they are confident we would soon be able to fix, they see no reason for hesitation. The Industrial and Digital Revolutions can now be joined by the Biotech Revolution and bring profits to all. In any case, they point out, GM foodstuffs and crops are widely used in the United States, Canada, Australia, Argentina, India and China, all major agricultural producers. There have been no problems of a significant nature.

Many writers defending GM crops claim that the technology is the key to reducing world hunger and malnutrition (these are not quite the same: many people have food in sufficient quantity but do not have a healthy balanced diet). Plants can be designed that will flourish in poor soil, survive in harsh conditions and supply the right nutrients to people. To miss this opportunity would be an unconscionable shame.

III

Genetically modified crops have not, however, been welcomed by all. In 1999 Europeans suddenly became aware of what was happening and reacted, in many cases, with great hostility. Probably as a result of a number of scares attached to modern farming methods (notably the BSE disaster in the United Kingdom), Europeans showed no willingness to trust the assurances of experts that all this engineering activity was safe, especially when there were some who were saying the exact opposite. It became politically impossible for governments not to act and a number of restrictions were placed on the use of GM plants. Products containing GM ingredients have to be clearly labelled and are practically impossible to sell in the European market. The Japanese consumer has also proved to be reluctant to try the new crops. This has had a strong knock-on effect on farmers who hope to export to these markets. They know that GM foodstuffs are unacceptable to consumers and hence avoid them. American farming interests suspect that the European aversion to GM crops is part of a protectionist plot. Certainly the EU is guilty of protecting its farmers, but the strength of feeling on the part of the public was genuine whether or not it was justified. What caused it is our next question.

There are a number of points made in opposition to genetic engineering of the sort being discussed. First, it is seen as 'unnatural'. The food produced as a result was named 'Frankenfood' with all its associations of horror. The argument is a little vague, but reflects a public fear that scientists have got too used to playing God and are venturing on forbidden and very dangerous ground without even taking any precautions. The mind-set of these concerned people is very unlike that of the pro-GM thinkers; they are very nervous of the genie being let out of the bottle. Until it has been proved that genetically altering organisms is harmless they want no part of it.

A stronger argument than the fear that GM foodstuffs might turn out to be toxic, is the fear of genetic pollution. The manufacturers of GM crops assured people that new genes would not spread, but research has shown that seeds travel further than expected and accidental and unforeseen mixing is quite probable. This raises the question of the emergence of 'superweeds' which cannot be killed by spraying. In the case of specialized plants that produce, for example, pharmaceutical drugs, one would not want their qualities spreading to ordinary edible plants. It is also reasonable to point out that one cannot really beat nature for long. If plants show resistance to various viruses and insects, natural selection will swiftly produce new ones capable of overcoming their defences.

Another line of argument involves the companies themselves. People are not happy with the idea of plants and genes being patented. They fear that rather than helping the poor the new crops will earn huge profits for the biotechnology corporations. Farmers will be dependent on them and the companies will gain a form of monopoly. At first, this seemed to have been confirmed by the use of 'terminator' tactics that ensured the seed produced each year would be infertile. Ironically, this would help to solve the contamination problem that also concerned critics, but it still enraged them. It certainly needs to be conceded that some of the possible benefits to the developing world trumpeted by GM companies are unlikely to emerge from profit-driven companies whose interest in the poor is always minimal for obvious commercial reasons.

IV

It seems unlikely that any consensus on this vexed topic will appear soon. The argument goes beyond facts to basic attitudes and philosophies.

Activity 3.19

Answer the following questions about Reading passage 6:

1 How would you describe the author's attitude to the topic of GE? Does he/she take a particular position or side in the debate?

2 Explain the subordinate clauses in the sentence beginning 'Probably as …' in section III, paragraph 1.

3 In your own words, explain the suspicion of the American farming interests (section III, paragraph 1).

4 Explain the qualifications and concessions in the sentence beginning 'Certainly the …' (section III, paragraph 1). What is their overall effect?

5 In what way does 'Frankenfood' sound horrible (section III, paragraph 2)?

6 What does the writer mean by saying 'people are very nervous of the genie being let out of the bottle' (section III, paragraph 2)?

7 Why would one not want the qualities mentioned in the passage spreading in the way described (section III, paragraph 3)?

8 How will natural selection produce the effect described in section III, paragraph 3?

9 Explain the ‘irony’ referred to in section III, paragraph 4.

10 Explain the last point in section III, paragraph 4.

Putting it all together

To conclude this module on academic reading, we would like you to practise many of the skills you have learned by applying them to Reading passage 7 below on the topic of plastic surgery.

First, practise orienting yourself to the text. Then try to quickly skim the text, noting the main arguments in the introduction and conclusion and the key ideas in topic sentences. Pay attention to discourse markers and the structure and logic of the passage. Then read the passage more carefully and try to guess the meaning of unfamiliar words. Also, look for any positive or negative words that suggest the author's attitude, and think also about the intended audience of the passage.

After reading the passage, complete the activities that follow.

Reading passage 7

Plastic beauty

1 In the developed world, plastic, or cosmetic surgery as it is increasingly known, is booming. More and more clinics are being opened, advertisements seem to be everywhere and more and more of one's friends are disappearing for a short time and then reemerging looking different. It isn't even only the old who are turning to the knife to improve their looks; more and more adolescents are having adjustments made to their appearance.

2 Among the most common operations are work on the breasts (often enhancement but also reduction for women) and on the eyes (in Asia to make the eyes more Western-looking and among the older to remove bags and wrinkling). Liposuction removes fat from the thighs or any other places with unsightly bulges; face-lifts smooth out the effects of aging; rhinoplasty improves the shape of the nose (males are particularly drawn to this operation; and otoplasty (often resorted to by teenagers) sorts out large or prominent ears.

3 In some cases the surgery is carried out for medical reasons. Large breasts can, for example, cause back problems, but in most cases the motive is beauty. People want to look more attractive, and who can gainsay them? Research has time and time again shown that physically attractive people get better jobs, earn more, are more likely to be helped and generally have a better time. Even very young babies will look more frequently at people who are regarded as good-looking than at others. Making your features more regular makes sense.

4 We live in a world of social levelling. Just as the old aristocracy of birth has been replaced by the common man and the concept of merit, the aristocracy of beauty can now be overthrown by the wonders of technology. Cosmetic surgery can be seen as a democratization of good looks, making them more generally available. Although cosmetic surgeons command good fees, lesser procedures are now well within the reach of most members of the world's richer societies.

5 Objections do, however, exist to the popularity of appearance changing surgical procedures. The first is that having any operation entails risk. This is true. Mistakes, infections, failures happen, but they are not especially common and the answer to them must be regulation of the industry. If the surgeons are well-qualified, licensed and regulated to ensure no corners are cut and that full hygiene is observed, the dangers should be minimal. Travelling by road involves some risk and yet we continue to get into a car.

6 Too much cosmetic surgery can cause the appearance to degenerate. The so-called Michael Jackson Syndrome is well-known. This also is not a particularly good argument against cosmetic surgery. Extreme cases should not be used to judge more ordinary ones. Presumably in such cases the patients were advised of the risks they were taking and accepted them. As long as there are courts where surgeons can be sued we can assume they will not act rashly.

7 Arguments from nature rarely work. The term is too vague. There is nothing new to humans altering their appearance with various types of piercing and tattooing. Societies in which implants are put into lips, necks are elongated, feet are made artificially small and wigs are worn are easy to think of. If such behaviour is so old and so wide-spread, how can we say it is unnatural to the human species? All that has happened is that it can now be done far more effectively and safely.

8 Some say that cosmetic surgery is a waste of human resources. Medicine should be about saving lives, not straightening out noses. Fat people should lose weight rather than undergoing liposuction. Even if cosmetic surgery is acceptable, it should be low on our list of priorities. There are far more important things that need setting right in our world than people's eyelids. We should value inner beauty and perfection of personality rather than superficial appearance. All these are sound moral arguments, but they are far too general and wide: there are many things we take for granted that would have to be condemned on the same basis. An individual considering cosmetic surgery may wish to ponder these matters but they are not a reason to ban or restrict it.

9 There is some irony in the fact that just as women made such breakthroughs in developed societies and rejected the image of sex object or baby-bearing machine, cosmetic surgery came along and made many women seek to enhance their sexual attractiveness to men by means of its procedures. It is, then, understandable that feminists are no fans of cosmetic surgery carried out for such reasons, but, again, these are issues for individuals to think about.

10 Perhaps saddest is the thought that cosmetic surgery mimics many of the most disheartening aspects of our society. The entertainment, fashion and beauty industries (how odd to consider beauty an industry) give us an image of the ideal human body that we then desperately strive after. Cosmetic surgery comes as the answer to our prayers, only to turn us all into mass-produced copies of one another. Is this the beginning of the trail that leads to the clone?

11 A final question: what is the difference between a woman who has undergone cosmetic surgery entering a beauty contest and an athlete who has used artificial means to enhance his/her performance joining the Olympic Games?

Activity 3.20

Answer these questions by scanning the text very quickly for specific information.

1 'Liposuction' means removing _____.

2 Plastic surgery on the nose is called '_____'.

3 Large breasts may cause _____.

4 To minimize the risk of plastic surgery _____ is needed.

5 Two examples of changes to the skin are _____ and _____.

6 What alternative to liposuction is suggested? _____

7 Feminists object to women being seen as _____ or _____.

8 The writer fears that one day we might be _____ of other people.

Activity 3.21

Scan the passage to find which paragraph mentions each of the ideas listed in the left-hand column of the table below.

Ideas	**Paragraph #**
asserts cosmetic surgery is natural	
explains the justification for cosmetic surgery	
mentions feminist objections	
discusses the problem of over-use	
describes the popularity of cosmetic surgery	
expands the topic beyond cosmetic surgery	
first mentions objections	
says cosmetic surgery suits the modern world	
discusses moral values	
lists types of cosmetic surgery	
expresses the author's worries about the future	

Activity 3.22

Answer the following questions.

1 List three extra ways the writer refers to cosmetic surgery in paragraph 1.

2 Look at paragraph 3, and find words that have the following meanings:

   a because of health (3 words)

   b say they are wrong (2 words)

   c on the whole (1 word)

   d thought to be (2 words)

   e is a good thing to do (2 words).

3 What is the author's opinion of plastic surgery in paragraphs 1–9?

4 Now look at paragraph 10. Is the author's attitude to plastic surgery in this paragraph positive, negative or neutral? What words help to signal the writer's attitude.

Conclusion

This module has introduced you to three main sets of skills and strategies for reading academic texts.

First, we considered some strategies for identifying the main points in a text, including:

- orienting oneself towards the passage;
- using clues like the title, sub-headings and graphics to get a clear picture of the main topic;
- skimming quickly through the passage, paying special attention to the title, the beginning, and the end;
- focusing on the topic/first sentences of paragraphs;
- thinking about the logic of the passage and about how relationships between ideas and paragraphs are ordered and organized; and
- taking note of discourse markers to determine the relationship between ideas.

We then considered strategies for reading intensively and locating specific information, including:

- scanning for specific information;
- working out the meaning of an unfamiliar word or phrase from its context;
- using knowledge of word forms, word roots, prefixes and suffixes to understand the meaning of an unfamiliar word;
- identifying possible synonyms for key words and phrases;
- unpacking complex sentences to identify their key ideas, and looking for words or phrases that signal concessions or conflicting facts and arguments; and
- identifying examples and distinguishing supporting information from main points.

Finally, we looked at strategies for determining an author's opinions, attitudes and bias, including:

- using knowledge of words and phrases that connote positive, negative and neutral viewpoints;
- determining the level of certainty in a passage by noting adverbs, modal verbs and modifiers; and

- assessing the level of assumed knowledge and specialist language, and the degree to which the writer explains or defines uncommon or technical words, to determine the intended audience of a passage.