

Chapter 2

How well do you think?

Develop your thinking skills

Learning outcomes

This chapter offers you opportunities to:

- identify foundation thinking skills which contribute to critical thinking
- assess your recognition of patterns and your attention to detail
- practise focusing attention

Introduction

We use basic thinking skills in everyday life, usually with little difficulty. However, many people find it difficult to apply these same skills automatically to new contexts, such as more abstract problem-solving and academic study. This is partly because, although people use these skills in contexts familiar to them, they are not always sufficiently aware of the underlying strategies that they are using so as to be able to adapt them to new circumstances. The more used we are to applying skills easily in one context, the more difficult it can be to identify the underlying skills.

Critical thinking skills are based on underlying sets of thinking skills such as:

- focusing attention so as to recognise the significance of fine details;
- using attention to fine detail in order to recognise patterns, such as similarities and differences, absence and presence, order and sequence;
- using recognition of pattern in order to compare and contrast items and to predict possible outcomes;
- sorting and labelling items into groups, so that they form categories;

- using an understanding of categories to identify the characteristics of new phenomena and make judgements about them.

These skills are not only useful for critical thinking in academic and professional life, but are tested as part of the procedures for selecting job applicants for interviews.

The next pages provide several short self-assessment activities for you to assess how good you are already at these skills. In particular, these give you practice in attending to fine detail, and the level of mental discipline that critical analysis involves. Student critical writing is often weakened by a lack of sustained and close attention to detail in one or more stages of the critical process. Improving your ability to pay attention to detail, selectively and at speed, is likely to have benefits for your study and assignments.

If you find the assessment easy, then progress to a chapter that is more useful for you. Otherwise, use the rest of this chapter to practise these skills further.

Assess your thinking skills (1)

Comparison

The following activity enables you to check how good you are at identifying similarity and difference. For each set of boxes below, identify which one is the odd one out. An example is given first.

Example

1	2	3	4	5	6
←← ←←	→→ →→	←← ←←	←← ←←	←← ←←	←← ←←

Here, box 2 is the odd one out as the arrows point in a different direction from those in the other boxes. Now try the following.

A

1	2	3	4	5	6
ooo ooo ooo ooo	ooo ooo ooo ooo	ooo ooo ooo ooo	ooo ooo ooo ooo	ooo ooo ooo ooo	ooo ooo ooo ooo

B

1	2	3	4	5	6
✂✂ ✂✂ ✂✂	✂✂ ✂✂ ✂✂	✂✂ ✂✂ ✂✂	✂✂ ✂✂ ✂✂	✂✂ ✂✂ ✂✂	✂✂ ✂✂ ✂✂

C

1	2	3	4	5	6
♣♦ ♣♣ ♣♣	♣♦ ♣♣ ♣♣	♣♦ ♣♣ ♣♣	♣♦ ♣♣ ♣♣	♣♦ ♣♣ ♣♣	♣♦ ♣♣ ♣♣

D

1	2	3	4	5	6
♣♣ ♣♣ ♣♣	♣♣ ♣♣ ♣♣	♣♣ ♣♣ ♣♣	♣♣ ♣♣ ♣♣	♣♣ ♣♣ ♣♣	♣♣ ♣♣ ♣♣

Sequence

This activity assesses your ability to recognise how a sequence is structured. Each set of boxes forms a sequence. Below each sequence is a set of options. Choose one option to replace the question mark and complete the sequence.

Example sequence

◆	*	◆	*	◆	?
---	---	---	---	---	---

Options for the example sequence

1	2	3	4	5	6
☞	☾	◆	☞	*	☒

The answer is 5, as the sequence in the example is one of alternating diamonds and stars. Now complete the following sequences.

Sequence A

☼	☼	☼	☼	☼	?
---	---	---	---	---	---

Options for sequence A

1	2	3	4	5	6
☼	☼	☽	☞	☼	♥

Sequence B

♣♥ ⊖	♣♥ ♣	♣♥ ⊖	♣♥ ♣	♣♥ ⊖	?
---------	---------	---------	---------	---------	---

Options for sequence B

1	2	3	4	5	6
♣♥ ⊖	♣♥ ⊖	♣♥ ♣	♣♥ ♣	♣♥ ⊖	♣♥ ♣

Answers: see p. 32. ▶

Assess your thinking skills (2)

Sequence C

⊖ ■	■ ◆	◆ ■	⊖ ■	■ ◆	?
■ ◆	◆ ■	⊖ ■	■ ◆	◆ ■	
◆ ■	⊖ ■	■ ◆	◆ ■	⊖ ■	

Options for sequence C

1	2	3	4	5	6
⊖ ■	■ ◆	■ ◆	■ ■	◆ ■	◆ ■
■ ◆	■ ◆	◆ ■	◆ ◆	⊖ ■	■ ◆
◆ ■	⊖ ■	⊖ ■	⊖ ■	■ ◆	■ ◆

Sequence D

*	≤	**	≡	**	?
≡	**	≥	*	≤	

Options for sequence D

1	2	3	4	5	6
*	≥	**	≤	*	**
≡	**	≥	**	*	*
	*		**	≤	≥

Categorising

This activity enables you to check your ability to categorise information. For each box, organise the set of items into two groups. Each group should be distinct with its own particular characteristic. Identify the characteristic of each group. There may not be the same number of items in each group.

A	mouse	typing	drive
	printer	talking	monitor
	screen	scrolling	eating

B	pyramid	vast	oasis	gigantic
	palm-tree		desert	massive
	enormous	Nile	immense	

C	topaz	agate	silver	ruby
	gold	opal	platinum	

D	Empty	Gate	Shoal	Divan	burst
	chops	Kenya	hertz	micro	Pound

Following directions

Answer the following questions as directed.

A Use the multiple choice responses below to answer the question: How many legs has a cow?

- 1 A cow has three legs.
- 2 A cow has two legs and two tails.
- 3 A cow has four legs and a tail.
- 4 A cow has four legs.

B Use the multiple choice responses below to answer the question: Of which atoms is water comprised:

- 1 Water is comprised of oxygen and hydrogen.
- 2 Water can exist as a solid, fluid or gas.
- 3 Water is comprised of oxygen and hydrogen and is rarely, if ever, found on any planet except earth.
- 4 Water forms ice when it is frozen and is then considered to be a solid.

Assess your thinking skills (3)

Close reading

This activity enables you to check your close reading skills. Each passage below is followed by a series of questions about the text. For each question, circle:

- A If the statement follows logically from the information given in the passage.
- B If the statement is untrue or it does not follow logically from the information given in the passage.
- C If the passage does not give enough information for you to say whether it is true or follows logically from the information that is given. Consider what other information you would need.

Passage 2.1

The Arctic

The Arctic region at the top of the northern hemisphere forms a broad cold band that encompasses both Greenland and Siberia. Conditions in the Arctic are harsh. Vegetation is sparse and temperatures are low for most of the year. Inhabitants of the region enjoy three months of continual daylight in the summer. However, in winter the sun never appears. For three months of the year there is perpetual night, the only natural light coming from the moon, the stars and the northern lights.

- 1 The main argument is that summers in the Arctic are very short.
A B C
- 2 The vegetation of the Arctic is not good to eat.
A B C
- 3 The sun never appears.
A B C

- 4 There is daylight for some or all of the day during nine months of the year.
A B C
- 5 There is no electricity in the Arctic.
A B C

Passage 2.2

George Washington Carver

George Washington Carver Jr. (1865–1943) was an agricultural scientist of repute. His research contributed to the development of over 300 products from peanuts alone. Amongst over 100 industrial applications he helped to develop from agricultural products such as soybeans, were rubber substitutes, paints and textile dyes. His work was celebrated by President Franklin D. Roosevelt with a national monument in 1943. Carver became a symbol to many different groups. As the first Black student to attend his college, he was proof of what a former slave could achieve through education. Given Carver's claim that God was his inspiration, religious groups embraced his discoveries as a sign of God's blessing for materialism. Southern businessmen saw in him a living example of New South Philosophy and materialism. Through him, the South was transformed from being a one-crop cotton-based producer to a multi-crop economy with industrial outlets. As with many great men, the stories surrounding Carver's life have taken on mythic aspects, which are now hard to disentangle from the truth.

- 6 Franklin D. Roosevelt succeeded George Washington Carver as President of the USA.
A B C
- 7 Roosevelt constructed a monument to Carver after his death in 1943.
A B C

Assess your thinking skills (4)

- 8 Carver was not really a great man as his story is based on myths.
A B C
- 9 Religious groups thought God favoured materialism.
A B C
- 10 Before Carver, no Black students had attended college in the USA.
A B C
- 11 Before Carver, the Southern USA was a multi-crop economy with industrial outlets.
A B C
- 12 Carver helped to invent over 100 industrial applications from soybeans.
A B C

Recognising similarities

Which of the following two passages, option 1 or option 2, is closest in meaning to Passage 2.1, *The Arctic*, above (p. 20).

Option 1

As you move further north, the environment deteriorates to one of icy climatic conditions for much of the year, with few plants, and months without any daylight at all.

Option 2

The Arctic region in the northern hemisphere is best avoided as conditions are so harsh, and yet the inhabitants enjoy living there. They like the continual daylight in the summer and the natural light of the moon and the stars.

Which of the following three passages, option 3, 4 or 5, is closest in meaning to Passage 2.2, *George Washington Carver*, above (p. 20).

Option 3

Carver claimed that he owed his success to God's inspiration. This shows that if you put your faith in God, he will help you to be successful as an inventor and as a materialist.

Option 4

Carver was an important symbol for Black groups in the South. He was born a slave and was the first Black student to go to his college. Southern businessmen and religious groups would not have expected that education would have such an effect upon people they had regarded as slaves. Carver's celebration by a President of the United States was given in recognition that the economy of the Southern states no longer relied on cotton.

Option 5

The economy of the South was diversified by Carver's discoveries in agricultural science, resulting in Carver becoming something of a symbol and mythic figure for Southern groups.

Answers: see p. 33. ▶

Use the scoring sheet on the next page to add up your score and evaluate your performance.

Scoring sheet

Work out your score

Check the answers on pp. 32–3. Use the scoring sheet below to add up your score.

Item	Possible score	Your score
Comparison	4	
A	1	
B	1	
C	1	
D	1	
Sequence	9	
A	2	
B	2	
C	2	
D	3	
Categorising	14	
A	3	
B	4	
C	4	
D	3	
Following directions	4	
A	2	
B	2	
Close reading	15	
1	1	
2	1	
3	1	
4	1	
5	1	
6	1	
7	2	
8	1	
9	1	
10	2	
11	1	
12	2	
Recognising similarities	4	
Arctic	2	
Carver	2	
Total	50	
Double your total to find your percentage score	100	

Evaluate your score

This is only a rough test for you to see for yourself how easily you performed some of the underlying skills associated with critical thinking. People who find critical thinking hard often have a difficulty in one or more of these skills. However, this is not always the case. There can be many reasons why people do well at one task and not another, so do not be discouraged if you found this difficult or gained a low score.

86–100 Excellent! This score suggests that you already have very good overall basic thinking skills to apply to critical thinking skills.

60–85 Good! If this is distributed evenly across all the items in the assessment, then you are likely to have a good basis for developing critical thinking skills. Note whether there were any areas where your score was lower than others, or which you found more difficult. You might benefit from more practice in those areas before proceeding or if you find critical thinking difficult.

30–60 Well done! You have obviously already gained a basis for developing your basic and critical thinking skills. Some people find critical thinking easier when it applies to real situations rather than in small activities, and that might be true of you. However, you are likely to benefit from practising these skills further, both through the activities in the rest of this chapter and taking more time on tasks which require close attention to detail.

Less than 30 Well done for sticking with the task. It may be that today wasn't your day for this kind of activity. Have a go with the activities in this chapter and see if you develop some strategies for improving these skills. If not, and if you find critical thinking to be difficult, it is worth speaking to a tutor or lecturer to discuss the assessment.

Focusing attention

Attentional processes

Attention isn't the same as concentration.

Concentration is associated with maintaining a focus on a task, even when it is difficult to do this. Attentional processes may include such concentration, but do not necessarily do so. Attentional processes that are important to critical thinking include:

- knowing where to look, where to focus the attention;
- being aware of when we are unable to maintain attention, and when to rest, so that we are able to maintain a sharp focus;
- becoming used to conventions, whether for reading, writing, tests or exams, so that we can use these to help us use attention efficiently;
- being aware of the conventions or rules for jokes, puzzles, television programmes, videos, different types of text or spoken information, so that we can use that knowledge to direct our attention efficiently;
- being aware of where there may be tricks, false impressions or illusions;
- remembering previous experience so that we can use it to direct attention.

Automatic thinking and frames of reference

We can train our attention so that we are better able to notice relevant information. Much of the time, our mind operates 'on automatic pilot'. This makes it efficient for a range of activities other than critical thinking. Our brain tends to be effective at finding ways of saving us mental energy. Where it can, it takes short cuts and uses what it already knows to make sense of anything new it encounters. It tends to do this on an approximate basis, so it isn't always accurate.

Our mind uses its previous experiences to provide frameworks, known as 'frames of reference', to help categorise incoming information. When the brain thinks it knows what it is looking at, it will naturally stop trying to categorise the experience. That is how optical illusions or magical tricks work: our

brain thinks it knows what it is seeing even though it is being tricked, so it stops looking for further explanations.

Our frames of reference can be more or less sophisticated. At a basic level, we sort situations into safe/not safe, as this helps our survival. We can usually pick out our name from background noise, even when we are not paying attention, as that also helps our survival. We sort other information according to our vocabulary, knowledge and experiences. The more experience we have of consciously thinking through how our experiences are interconnected, and labelling those experiences, the more likely it is that we can organise our thoughts and direct our attention in particular ways when we want to.

Activity: Find the 't'

Read the following text. Read it a second time, and identify how many times the letter 't' occurs.

Terrifying torrents and long dark tunnels are used to create the excitement of the thrilling train ride at the park.

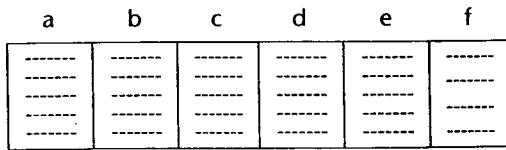
The answer is on p. 34.

The activities in the self-assessment on pages 18–21 focus on some attentional processes that underlie critical thinking. To complete these activities, we need to pay attention to detail so as to notice patterns within the 'bigger picture'. If we can recognise patterns, we can compare items, drawing out similarities and differences. If we can recognise sequence, we are in a better position to identify trends, predict the next step and distinguish between cause and effect. The following pages give more practice in developing attentional skills.

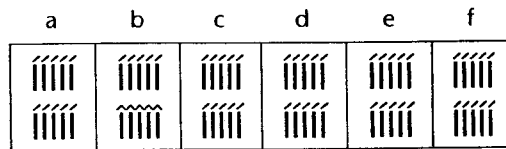
Focusing attention: Identifying difference

This activity gives you further practice in comparing different patterns in order to identify which item does not belong to the set. For each set of boxes, identify which box is the odd one out.

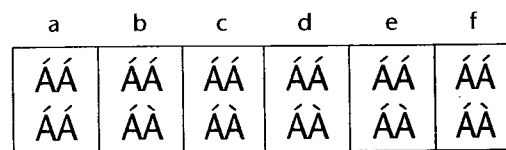
1



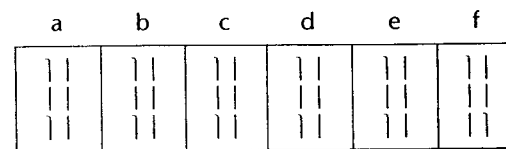
2



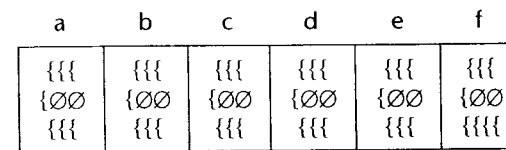
3



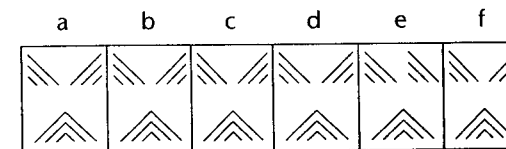
4



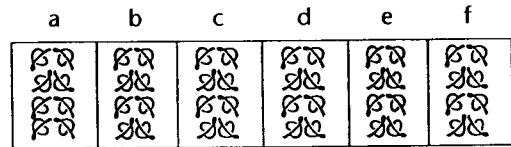
5



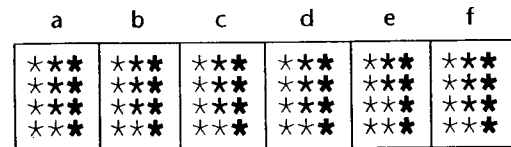
6



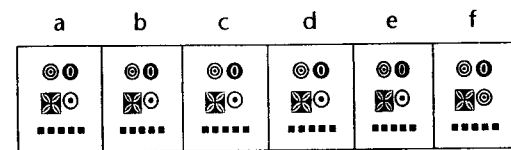
7



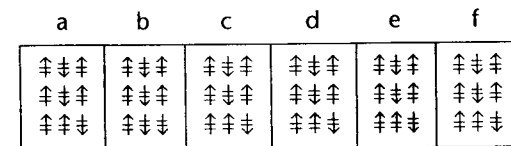
8



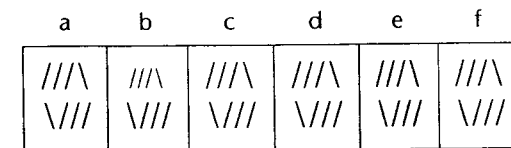
9



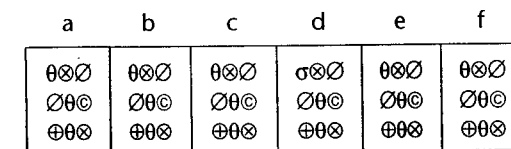
10



11



12



Answers: p. 34. ▶

Focusing attention: Recognising sequence (1)

The following activity gives you further practice in recognising sequence. As in the previous assessment exercise, work out what the sequence is. Select an answer from the choice below, to replace the question mark and complete the sequence in each case. Answers on pages 34–5.

1

a	b	c	d	e	f
#	#	#	##	##	?
	#	#	#	##	
		#	#	#	

Options for sequence 1

1a	1b	1c	1d	1e	1f
#	##	#	#	##	##
#	##		#	##	#
#	##			#	

2

a	b	c	d	e	f
ωξ	ωξ	ωξ	ωξ	ωξ	?

Options for sequence 2

2a	2b	2c	2d	2e	2f
ωξ	ωξ	ωξ	ω	ωξ	ωξ

3

a	b	c	d	e	f
XχX	χXχ	XχX	χXχ	XχX	?
χXχ	XχX	χXχ	XχX	χXχ	
XχX	χXχ	XχX	χXχ	XχX	

Options for sequence 3

3a	3b	3c	3d	3e	3f
XχX	χXχ	χXχ	χXχ	XχX	XχX
χXχ	χXχ	XχX	XχX	XχX	χXχ
	χXχ	χXχ	XχX	XχX	XχX

4

a	b	c	d	e	f
∩	∩	∩	∩∩	∩∩	?
	∩	∩	∩	∩∩	
		∩	∩	∩	

Options for sequence 4

4a	4b	4c	4d	4e	4f
∩∩	∩∩	∩	∩∩	∩∩	∩
∩	∩∩		∩∩		∩
∩	∩	∩	∩∩	∩	

5

a	b	c	d	e	f
←ψ	ψ↓	↓↓	↓∩	∩→	?
→↓	←↓	ψ∩	↓→	↓←	
∩↓	→∩	←→	ψ←	↓ψ	

Options for sequence 5

5a	5b	5c	5d	5e	5f
←←	ψψ	ψ←	∩ψ	→←	←←
ψ∩	→∩	∩↓	→↓	∩ψ	∩↓
↓↓	↓↓	↓↓	↓↓	↓↓	ψ↓

6

a	b	c	d	e	f
□○	□○	■○	■○	■●	?
□○	□○	□○	□○	*○	

Options for sequence 6

6a	6b	6c	6d	6e	6f
■○	■●	■○	■○	■●	□○
□○	*○	□□	■○	*○	□○

Focusing attention: Recognising sequence (2)

7

a	b	c	d	e	f

Options for sequence 7

7a	7b	7c	7d	7e	7f

8

a	b	c	d	e	f

Options for sequence 8

8a	8b	8c	8d	8e	8f

9

a	b	c	d	e	f

Options for sequence 9

9a	9b	9c	9d	9e	9f

10

a	b	c	d	e	f

Options for sequence 10

10a	10b	10c	10d	10e	10f

11

a	b	c	d	e	f

Options for sequence 11

11a	11b	11c	11d	11e	11f

12

a	b	c	d	e	f

Options for sequence 12

12a	12b	12c	12d	12e	12f

Answers: p. 34. ▶

Categorising

Categorising skills are important to critical thinking as they enable you to sort information into appropriate groups and recognise which information has relevant connections to other kinds of information. In critical analysis, this helps you to compare the right things, so that you compare 'like with like'. This is necessary for constructing sophisticated arguments, such as in debate or for essays and reports.

Comparisons

Drawing comparisons is essentially about finding similarities and identifying differences. The same two items may be considered to be similar or different depending on the context and the criteria used for comparison, as the following set of questions demonstrates.

Q1 What do these eight items have in common?

zebra cat puppy goldfish
whale kitten seal elephant

Q2 What do these items have in common which makes them different from the other items in the list in Q1?

cat goldfish kitten puppy

Q3 What do these items have in common which makes them different from other items in the list?

kitten puppy

The items in Q1 are all animals. Q2 has focused in on animals that are common domestic pets and Q3, on *young* domestic pets. In each case, the selection focuses in more detail on a narrower range of shared characteristics.

Salient characteristics

'Salient' simply means 'relevant to the argument'. In the above examples, your existing knowledge of animals and pets probably made it easy to recognise the characteristics that the items in each group shared. When you recognise the characteristics

that a set of items holds in common then, in effect, you are sorting these into groups, or categorising. A category is simply a group of items with shared characteristics. Any kind of category is possible: tall pointed objects; green vegetables; current prime ministers.

Activity: Categorising

Identify the following categories (in other words, what does each group have in common?)

- (a) pond lake sea pool
- (b) Indian Irish Iranian Bolivian
- (c) lair den pen burrow hutch
- (d) biology chemistry physics geology
- (e) creates stellar engines soothes
- (f) decide deliver denounce devour
- (g) never seven cleverest severe
- (h) memory language problem-solving
- (i) appendicitis tonsillitis colonitis
- (j) rotor minim deed peep tenet
- (k) cheluviation illuviation leaching salination
- (l) 21 35 56 84 91
- (m) oligarchy exarchy plutarchy, democracy
- (n) cete herd colony flock drove

Answers: p. 35. ▶

Categorising involves not merely identifying shared salient characteristics, but also having the right background knowledge and vocabulary to label the group once identified. You may have found this an issue when trying to describe some of the groups above. Good background knowledge and vocabulary do make it easier to find, sort and use information at speed, making critical thinking more efficient.

The above items were easier to categorise because you already knew that they formed a category. This meant you only had to find the salient characteristics of ready-formed groups. Pattern-finding skills also make it easier to identify similarities when a group is not already pre-formed.

Activity: Categorising text

For each of the following sets of three texts, identify which two carry the most similar message.

Passage 2.3

Matter

- (a) Different ages have classified matter in different ways. Aristotle's view was that all material substances consisted of air, earth, fire and water. This view held sway for a long time. Today, we describe liquids, solids and gases in terms of their chemical properties.
- (b) Systems for classifying matter have varied over time. Although we now analyse matter in terms of chemical properties, Aristotle's division into earth, fire, air and water was used for a long time.
- (c) Different ages have classified matter in different ways. Aristotle's view that all material substances consist of air, earth, fire and water was clearly erroneous and was replaced by the correct version we hold today. We describe liquids, solids and gases in terms of their chemical properties.

Passage 2.4

Anointing oil

- (a) When Elizabeth II was crowned queen of England, she was anointed with a mixture of essential oils. A mixture of oils including cinnamon, rose, jasmine and civet was invented in the days of Egforth of Mercia, who was the first English king to be anointed in the manner of the Old Testament. This has been used ever since and is prepared by the royal physicians before a coronation.
- (b) The anointing of kings and queens has always been an aromatic affair. Coronation oil is prepared by royal physicians, and contains a mix of essential oils. For that of Elizabeth II, these included cinnamon, rose, jasmine, civet, musk and neroli. Such a mix of oils has been used for hundreds of years, perhaps even all the way back to 785, when Egforth of Mercia was the first English king to be anointed in the manner of the Old Testament.

- (c) Essential oils have always played an important part in coronation rituals. When Elizabeth II was crowned queen of England, a mixture that included cinnamon, jasmine, benzoin and neroli was prepared by the Surgeon-Apothecary. It is possible that such ingredients were used even as long ago as 785, when Egforth of Mercia was crowned.

Passage 2.5

The right hemisphere

- (a) The right hemisphere of the brain controls our capacity to identify what is real. When either hemisphere is damaged, it is difficult for people to perform tasks such as differentiating their mother from a cupboard. When the right hemisphere is damaged, some individuals lose their power of imagination. They also may not be able to envisage what problems they have. This is not the case with left hemisphere damage.
- (b) The right hemisphere of the brain controls the ability to recognise what is real in the outer world, such as differentiating your mother from your cupboard. When the right hemisphere is damaged, some individuals find it impossible to recognise or imagine the problem they have. This is not the case with left hemisphere damage.
- (c) Our capacity to recognise what is real is controlled by the right hemisphere of the brain. If this is damaged, the individual may find it impossible to imagine what problems are created by the damage. Individuals with syndromes of the left hemisphere are able to grasp what problems are created by the syndrome.

Answers: see p. 35. ▶

Close reading (1)

Critical thinking frequently requires you to read in very precise ways, paying attention to fine detail in order to make an accurate interpretation. This may require you to read more slowly, although, with practice, your critical reading skills can also become faster. This chapter provides practice in reading precisely.

In the activity below, you are required to answer a series of multiple-choice questions about a passage. There is a set of questions for each passage. Go through the passages in turn. You may find it helpful to check the answers for one passage before going on to another.

If you do not get all the answers correct, give some thought to where you were going wrong before moving on to the next passage.

Activity

For each statement, circle:

- A If this is consistent with what is said in the passage or follows logically from the information given.
- B If this is not consistent with what is said in the passage or does not follow logically from the information given.
- C If the passage does not give enough information for you to conclude whether a statement is true or follows logically from the information given. Consider what other information you would need.

Passage 2.6

Traditional legends

Traditional legends from the Americas are drawn from very diverse people and regions. They cover what would have been the particular experiences of many groups: coping with natural disasters, migrations, encounters with animals, journeys and events, distilled into myths in which many peoples can see their own story. The legends illustrate cosmic themes, such as the directions of North, South, East and West. Legends are not just quaint stories. They continue a tradition of beliefs and religion that link people culturally and ethically.

- 1 Legends serve social and cultural purposes.
A B C
- 2 The themes found in legends are common to many different peoples.
A B C
- 3 All legends address cosmic themes such as the directions of North, South, East and West.
A B C
- 4 The passage implies that if you understand these myths, you will have a better sense of direction.
A B C
- 5 Although different people produced the legends, the legends are all the same.
A B C
- 6 The passage suggests that people share common experiences and can see their stories reflected in the legends produced by others.
A B C

Answers: see pp. 35–6. ▶

Close reading (2)

Passage 2.7

Transformation

Disease and developmental disorders can bring about unexpected benefits. Whilst the conditions may bring unhappiness and pain, they can also bring us face to face with what we want the most out of life; many people have seen illness as a transformative event. Whilst certain opportunities close down, others can open up unexpectedly. Where certain neural pathways of the brain are blocked, for example, others may be forced into action, bringing about new ways of doing things, and sometimes even new ways of being.

- 7 People on benefits are more likely to get diseases.
A B C
- 8 Disease and developmental disorders are essential to neural development.
A B C
- 9 Most people find illness to be a transformative event.
A B C
- 10 If a person loses the capacity to perform an activity because of a disease, it is possible that they can learn an alternative method.
A B C

Passage 2.8

Clinical trials

Before a new pharmaceutical drug reaches the market, it must undergo clinical trials. The raw data from clinical trials of drugs are rarely published and what is published may be very misleading. The results of clinical trials that indicate that a drug is beneficial are likely to be published whereas tests that suggest the same drug is not effective are not published, and the public do not get to hear about them. The result

is that even academic articles written about new drugs, and which are normally based on the same data, can be very inaccurate. Not only that, but even our understanding of what an illness is can become distorted. For example, it was widely believed that depression was caused by people having a serotonin deficiency. Clinical trials suggested taking drugs that raised serotonin levels would result in greatly reducing the risk of suicide. This is contested in *The New Brain Sciences* (Rose, 2004), which argues that such drugs, far from reducing the effect of suicide, may even increase its risk, and that there is very little evidence that depressive illness has anything to do with serotonin levels.

- 11 The reasons given to explain depressive illness are flawed.
A B C
- 12 Raw data from clinical trials are less likely to be published than the results of trials that indicate that a drug is beneficial.
A B C
- 13 Clinical trials are not undertaken frequently enough to establish whether the effects of drugs change as a person grows older.
A B C
- 14 Academic articles are normally more accurate than the results of trials produced by drug companies.
A B C
- 15 Decreased serotonin levels lead to an increased risk of suicide.
A B C

Answers: see pp. 35–6. ▶

Close reading (3)

Passage 2.9

If a person carrying a cane collapses, they are likely to receive help very quickly. This suggests that people are altruistic, but not everyone receives such help. A third more people are likely to offer help to a person who appears to be lame than to those who are bleeding or have a facial disfigurement. If a person appears seriously wounded, helpers are more likely to offer indirect assistance by seeking more expert help. People are more likely to help if the cost of helping is low or if intervention is perceived as likely to be effective. Almost all potential helpers take flight if the victim appears drunk. However, in the USA, black people were more likely to help a black drunk and white people to help a white drunk (Piliavin et al., 1981). In other circumstances, there were no obvious racial differences in willingness to assist a victim.

- 16 If a drunk person is bleeding, they are less likely to receive help than if they are not.
A B C
- 17 White people are generally more likely to help other white victims than black victims, except when they are drunk.
A B C
- 18 People with facial disfigurements are less likely to receive help than people who are lame.
A B C
- 19 People are more likely to help if they feel they can be of use.
A B C
- 20 It is likely that people think either that the cost of helping a person with a cane is low or that help in such cases is likely to be effective.
A B C

Check your method

If you do not get all the answers correct, give some thought to where you were going wrong before moving on to the next passage. If it is not obvious why you got an answer wrong:

- Read the passage several times, focusing on the lines related to the question you got wrong.
- Focus on the exact wording. Check whether you misread anything.
- Check whether you jumped to conclusions for which there isn't evidence in the passage.
- Check whether you read more into the passage than is actually written on the page or more than can logically be deduced from the information given.
- Did you bring other information to the passage which is not actually written down? The instructions are to use only information which is in the passage – not your general knowledge.

Answers: see pp. 35–6. ▶

Information about the sources

- Carwell, H. (1977) *Blacks in Science: Astrophysicist to Zoologist* (Hicksville, NY: Exposition Press).
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