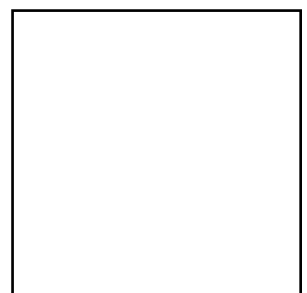
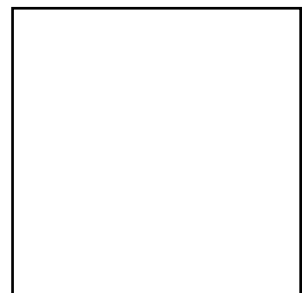
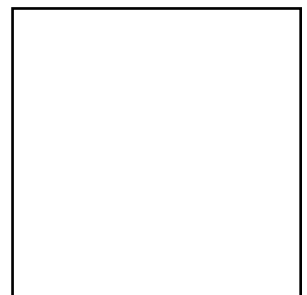


Nelson Thornes Distance Learning

AS Critical Thinking

Bruce Downie



Nelson Thornes

Text © Nelson Thornes Distance Learning 2010, 2011
Illustrations © Nelson Thornes Distance Learning 2010, 2011

All rights reserved. The copyright holders authorise ONLY users of *NTDL AS Critical Thinking* to make photocopies for their own or their students' immediate use within the teaching context. No other rights are granted without permission in writing from the publisher or under licence from the Copyright Licensing Agency Limited, of Saffron House, 6–10 Kirby Street, London EC1N 8TS.

Copy by any other means or for any purpose is strictly prohibited without prior consent from the copyright holders. Applications for such permission should be addressed to the publisher.

Any person who commits any unauthorised act in relation to this publication may be liable to criminal prosecution and civil claims for damages.

First edition published in 2009. This edition published in 2011 by:
Nelson Thornes Distance Learning
Delta Place
27 Bath Road
CHELTENHAM
GL53 7TH
United Kingdom

11 12 13 14 15 16 17/ 10 9 8 7 6 5 4 3

Printed in Great Britain by Berforts Group

The authors and publishers wish to thank the following for permission to use copyright material:

Independent News and Media Ltd for Mark Steel, 'Anyone would think motorists were a minority', *The Independent*, 14.2.07, and for Philip Hensher, 'Don't let McDonalds dish out burger bar A levels', *The Independent*, 29.1.08; News International Syndication Ltd for David Aaronovitch, 'The horror of the Paris Hilton school of privacy', *The Times Online*, 3.7.07; Oxford Cambridge and RSA Examinations for examination material; Solo Syndication Ltd for an extract from 'Why Adolf Hitler relied on ID cards', *Mail on Sunday*, 30.10.05; Telegraph Media Group for extracts from Philip Johnston, 'ID cards don't work – even Tony says so', *Daily Telegraph*, 4.12.06, Jeff Randall, 'Christmas is being crucified by white, middle-class do-gooders', *Daily Telegraph*, 8.12.06, Boris Johnston, 'The writing is on the wall – computer games rot the brain', *Daily Telegraph*, 28.12.06, and Sam Leith, 'Books aren't teaching children to swim, Boris', *Daily Telegraph*, 30.12.06

Every effort has been made to trace the copyright holders but if any have been inadvertently overlooked the publishers will be pleased to make the necessary arrangement at the first opportunity.

Contents

Module 1 Critical thinking Foundation Unit

Unit 1	Introduction to distance learning	1
Unit 2	The course	15
Unit 3	Types of argument	34
Unit 4	Types of claim	55
Unit 5	Assumptions	75
Unit 6	Structure of arguments	95
Unit 7	Some well-known flaws in argument	113
Unit 8	Comparisons and additional evidence	139
Unit 9	More flaws	160
Unit 10	Standards of evaluation	194
Unit 11	Areas of discourse	220
Unit 12	Use of language in argument	243
Unit 13	Writing your own argument	256
Unit 14	Unit 1 Specimen paper	268
Unit 15	Some revision exercises	275
Unit 16	Ways of presenting information, Considering graphs and charts	282
Unit 17	Motive, agenda and credibility	298
Unit 18	Percentages, probability and opinion polls	316
Unit 19	Mathematical reasoning	333
Unit 20	Patterns and correlations. Plausible and causal explanations	355
Unit 21	The speed awareness course	374
Unit 22	Safely inferred judgements	390
Unit 23	Writing your own argument (2)	414
Unit 24	Summary of the material	419
Unit 25	Unit 2 Specimen paper	430
Unit 26	Revision activities	439

Unit 1

Introduction to distance learning

Welcome to AS Critical Thinking! The aim of this introductory unit is to help you to get the very best out of your distance learning course. This unit will cover five things:

- What is critical thinking?
- The schedule for the course
- Your workbook and how to go through it
- Your tutorials/visits
- Assignments.

Activity 1



As you have elected to study this subject, you are likely to have a good idea what the subject may be about. Jot down here some of your impressions about the likely content and aims of the course.

You should make sure that you **read this guide thoroughly** before you start to work through the units. Distance learning is quite different from the kind of learning you are used to, and critical thinking it is very different from all of the other subjects that you will be studying at A Level. It is currently Britain's fastest growing A Level subject.

What is critical thinking?

This subject aims to improve your skills of critical reasoning. These skills should help you with your other A Level subjects and throughout your life after A Levels, through university and beyond.

Research by OCR's parent organisation, Cambridge Assessment, has found a dramatic one-grade improvement in achievement at A Level for those students taking Critical Thinking at AS Level. Subjects where the biggest difference was noticed in the comparative groups included biology, chemistry, physics, maths, geography, economics, psychology and English. Universities accept critical thinking in exactly the same way as any other A Level qualification,

with UCAS points attached. Higher education admissions tutors look positively upon the qualification, and students who have progressed to university have said that their degree work has benefited from completing this subject. The skills you develop are directly relevant to university admissions tests such as the National Admissions Test for Law (LNAT). Critical thinking can be part of the compulsory 'breadth' element of the AQA Baccalaureate.

This subject is about your response to arguments. Arguments usually involve some sort of dispute but that doesn't mean this subject is about having rows or quarrels. Arguments are better viewed as reasoned approaches to a problem and can be very positive things. Indeed, it could be said that arguments are fundamentally important in a free and democratic society that wants to improve its understanding of the world.

Argumentation is not necessarily the same thing as debating. In debating, the emphasis is on 'winning the argument', not necessarily making the best or most appropriate argument. Sometimes, the people with the best arguments don't 'win' because they don't have the right tone of voice or the right body language, or because they are insufficiently good looking or humorous, or simply because their views are unpopular. In critical thinking, the emphasis is on the quality of the argument rather than the style in which it is presented.

In 21st-century Britain, we get the vast majority of our information from people, organisations and social structures that have vested interests in not fully disclosing the truth. Politicians flatter and obfuscate in order to secure our votes; the media entertain us as much as inform us and this inevitably means economies with the truth; and advertisers and commercial organisations have as their paramount priority the need to sell us the product, so that successful promotion is much more important than the truth. We need people who can ask difficult questions. Critical thinking is about cutting through the nonsense that is all around us.

This critical thinking course is focused upon teaching you how to evaluate claims to the truth. It does not seek to tell you what the truth is. Accordingly the subject of critical thinking does not require you to learn a large number of facts or theories, and there are a limited number of terms and procedures you will need to know.

However, this does not mean that there is hardly any work in this course. Such a view will almost inevitably lead to a poorer exam performance. Critical thinking is predominantly a practical, skills-based discipline. While it does not make many demands upon the storage of facts in memory, it makes heavy demands on your capacity to apply correct analytical, evaluative and compositional methods. The best way to assure your competence in these is by regular practice of the type given in this workbook.

It is important to understand that the evaluation you make of arguments encountered in this course needs to be independent of your own personal views. Dogmatic people tend to make assertions without giving reasons. When they are criticised they often fail to give arguments to defend their own opinions. To become a good critical thinker, you should develop the habit of giving good arguments to support your claims. Giving good arguments is one of the most important ways to convince other people that particular claims should be accepted.

Workbook and textbook

All of the material you need to study this course is contained in this workbook and in the dedicated textbook, *AQA AS Critical Thinking Student's Book*, by John Butterworth and Joe Chislett (Nelson Thornes, 2009).

The schedule for the course

What follows is a plan of how you should follow your work. The course is divided into 25 weeks: Unit 1 Critical Thinking Foundation Unit in weeks 1–15, and Unit 2 Information,

Inference and Explanation in weeks 16–23. (There may be some scope for further revision activities after week 25). You should fill in the 'Date' column according to your particular school calendar, making allowance for half terms and Christmas and Easter holidays.

Week	Date	Unit	Assignment
1		Introduction to distance learning	
2		The course	
3		Types of argument	Ass 1
4		Types of claim	
5		Assumptions	Ass 2
6		The structure of arguments	
7		Some well-known flaws in argument	Ass 3
8		Comparisons and additional evidence	
9		More flaws	Ass 4
10		Standards of evaluation	
11		Areas of discourse	Ass 5
12		Use of language in argument	
13		Writing your own argument	Ass 6
14		Unit 1 Specimen paper	
15		Some revision exercises	
16		Ways of presenting information. Considering graphs and charts	
17		Motive, agenda and credibility	Ass 7
18		Percentages, probability and opinion polls	
19		Mathematical reasoning	Ass 8
20		Patterns and correlations. Plausible and causal explanations.	
21		The speed awareness course	
22		Safely inferred judgements	Ass 9
23		Writing your own argument (2)	
24		Summary of the material	Ass 10
25		Unit 2 Specimen paper	
26		Revision activities	

Activity 2**The distance learning student**

As distance learning is quite a different method of educational delivery, it might be instructive to think about the characteristics typical of a successful distance learning student.

What do you think the main ones might be?

Are any of these qualities unable to be learned?

Your workbook and how to go through it

You have probably had a look through your workbook already. If you haven't, have a quick look now.

You will notice that there is a particular topic for each week. The reading in the workbook itself, the course textbook and the activities are **essential** to your understanding – *you cannot get through this course without doing the reading and the activities.*

For a standard AS Level course you would attend lessons for about four to five hours each week. Because this is a distance learning course, you will do most of the work yourself either at home, or during your free periods at school. In order to complete your units fully you will therefore need to set aside around four to five hours each week. **This does not include time to complete assignments.**

There are also other things you need to think about:

- You should take responsibility for your own learning. If you don't keep up with the required work, you will be highly unlikely to achieve exam success.
- You should be very self-motivated. Distance learning can be very difficult if you think you are the kind of person who needs to be pushed all the time. If you don't think that you can keep yourself going, then maybe distance learning isn't for you.
- You should be organised. You will have a folder in which to keep all of your printed units. You need to keep these notes organised and you may find the following suggestions helpful:
 - 1 If you transfer completed units to another file (to avoid ending up with lots of paper to carry around), make sure you bring all the units you need to the tutorial.
 - 2 File any notes that you make with the relevant units.
 - 3 Do the same with any extra resources you pick up.
 - 4 Keep marked assignments with the relevant units.

Being organised is a skill and it comes more naturally to some people than others. If you are bad at organising, however, you can learn to be good. It is a skill you will need for university life and beyond.

A critical thinking timetable

In order to find the time to fit your distance learning into your week, it is a good idea to fill in a detailed timetable. Because you will be doing some of your work at home as well as at school, this timetable should include evenings and weekends as well as the hours you are at school. At the end of this unit you will find a blank timetable. When you have filled it in, you should put this timetable at the front of your critical thinking file, and make every effort to **stick to it!**

Before deciding when in the week you are going to work on your critical thinking, you should fill in all the commitments that you already have. Include the following:

- your tutorial times
- other subject lessons/tutorials
- other times during the school day when you know you will not be doing your critical thinking work
- travelling time, home commitments and, perhaps, work commitments
- any other times when you know that you will definitely not be doing your critical thinking, for example, Friday and Saturday nights.

Remember when you're planning your time that, as well as critical thinking work, you will also have homework for other subjects to do, so allow time for this too. Once you have blocked off these times on your timetable, have a look and see where you can sensibly fit in four or five hours to work on your critical thinking reading and activities. Keep in mind as well that your **assignments** are in addition to these four or five hours, and will also have to be fitted in.

Critical thinking can demand some hard thinking so it isn't easy to predict how long a piece of work will take – ideas don't always come on demand. Therefore, never leave a piece of work until the last minute. Furthermore, critical thinking writing needs to be clear and precise, so you will need to have time and space to enable you to concentrate on the task in hand. It is also worth mentioning that, because critical thinking is thought provoking, you might often find

yourself thinking about issues outside of your timetabled hours and within the framework of other subjects.

The activities

Each week you will be asked to carry out small pieces of work, which you will go over in the tutorials. This is to ensure that both you and your tutor can be confident that you have understood the main ideas within that particular topic area. It is very important that you complete all of the activities thoroughly and on time. This means undertaking the required reading (and making use of any other resources you might be able to find). Some of the activities are longer than others, and many will contain the unpredictable element of 'thinking time'. You will find most of the activities straightforward, but some you may find difficult.

Problems

The tutorials are when any problems that you might have with either the reading or the activities will be addressed. In order to save time in the tutorials, you should **mark or highlight anything that you specifically want to go over in the tutorial**.

When your tutor comes to visit you, he or she is likely to want to have a look through your unit work – bear this in mind if you ever feel tempted to leave any activities out!

Your tutorials/visits

Tutorials

You will have one tutorial each week, which will last for one hour and will be via video conference link. This will be strange for you at first – it will be a bit like talking to a television and having the television talk back to you! You probably haven't had experience of video conferencing before and you may feel a bit self-conscious or nervous with it at first, but don't worry, you will soon get used to it. And it is an impressive-looking skill to be able to include on your CV.

Because this is a distance learning course, you will not be 'taught' during your tutorials in the same way as you would in a traditionally taught subject. The tutorials are designed for you to talk about your work and any problems or questions that you might have with it.

A typical tutorial will usually be spent looking at the work that you have prepared in the week before the tutorial. Your tutor will encourage you to discuss the areas covered, will go over the activities you have done, will explain any complex ideas relating to that week's work and will give a general overview of what has been covered. If you haven't done the necessary work before the tutorial, you will find it almost impossible to follow. The latter part of the tutorial may be spent looking forward to the work you will do in the seven days before the next tutorial.

It is up to you to raise any issues concerning your work that you would like to spend more time on. You will find that if you are having a problem with a particular activity or concept, it is quite likely that the rest of your group are as well, so please speak up. Your tutor will want to spend time during the tutorials sorting out any problems that you are having with the work so that you get as much as possible from your tutorials and your distance learning workbook.

Visits

Your tutor will visit you twice a year. These visits are a crucial part of the course, so you should make every effort to be there when your tutor visits. These visits are an excellent opportunity for you and your tutor to meet and get to know each other. There will also be the opportunity for you to speak to your tutor in confidence if you want to. The visits will usually last for two hours and during this time your tutor will want to do the following:

- Review your progress. Your tutor will want to look over your unit work to make sure that you are thoroughly completing the activities. So, you should bring all of your unit work to date with you, including any extra notes or resources you have uncovered.
- Find out how you are enjoying the course. People learn best when they enjoy what they are learning. For this reason your tutor will want to find out how much you enjoy the subject, the tutorials and the critical thinking work. Hopefully you will enjoy studies through distance learning. If, however, you do have any problems, don't be afraid to tell your tutor how you feel – he or she will want to know the truth so that any issues can be sorted out before they become problems.
- Sometimes your tutor will go through some work with you during the visit, or may get you to do a group activity of some kind. These visits will be more than just a chat – be prepared to do some work as well.

Assignments

You will have ten homework assignments to do over the year. **You should keep within the deadlines set.** Your work will be marked and returned to your link teacher within two weeks of your tutor's receiving it. Owing to the nature of the course, the assignments will vary in type and length but all will have some relevance to the exams you will eventually sit.

On the whole, the questions, whether they refer to a shorter or a longer argument, are themselves quite short. There are, however, some longer questions asking you to present structured arguments of your own on material presented in source documents. These mimic the longer final questions you will answer in each of the two exams. Some questions ask you to refer to more than one of these source documents.

In critical thinking it is very important to use concise language in your assignments (and in the exams).

Before you hand it in to your link teacher (by the deadline!) for the tutor to mark, make sure you have done the following:

- given your name and the name of your school at the top of the page
- clearly written the title of the essay
- numbered the pages
- attached the pages of your work together.

A critical thinking exercise

Now it is time to do some real critical thinking. The following piece is written by a witty intelligent writer. Read it now and then look at the questions in Activity 3.

Mark Steel: Anyone would think motorists were a minority

The driving lobby talks about denial of their human rights as if they're Martin Luther King

How fitting that the drivers' campaign against road tolls is the laziest protest ever. You don't even have to get off the settee – just click the online petition and have a rest. This movement won't ever hold a protest march, because the supporters would go 'What – we have to walk?'

But the driving lobby talks about denial of their human rights as if they're Martin Luther bloody King. And if they were in Alabama when black people refused to sit at the back of a segregated bus, they'd have said, 'It is a disgrace. Everyone should have been kicked off, leaving the lane clear for my Alfa Romeo seven-litre fuel injection coupé.'

Similarly, they screech about the unfairness of the law that prohibits talking on their mobiles while driving with one hand and blindly zig-zagging across the road onto the pavement and through a mothers and toddlers afternoon by saying, 'This is a basic infringement against our civil liberties'.

Or they write articles such as 'Why does the government add to the restrictions on motorists by banning the playing of golf while driving? A survey by Vroom Vroom magazine shows that drivers who steer with their buttocks while chipping balls into the back seat are safer than non-golfing drivers. Indeed my colleague once completed 18 holes in a respectable six over par while driving from Oxford to Bournemouth! How many cyclists can say that?!'

The man who started this 'revolt' over road tolls, by launching the petition is portrayed as a plucky lone rebel. But he's a member of the Association of British Drivers, whose other campaigns include opposition to teaching kids about climate change, as this is 'state-sponsored totalitarianism in education'. Because the main ways to spot a totalitarian state are a) suspension of the democratic process, b) widespread imprisonment without trial, and c) asking kids to recycle their empty bottles of lemonade.

The Association goes on to demand schools are prevented from showing 'Al Gore's fantasy' about climate change, and an end to all 'global warming propaganda'. Soon they'll say 'These so-called scientists claim cars add to global warming. But it's the sea levels that are rising, not the roads. So surely the safest thing to do is concrete over the seas and turn them into huge motorways.'

The driving lobby refers to 'motorists' as if they're a beleaguered minority cult, separate from the rest of society. It's as if their attitude is 'Why should we be denied our basic human rights, just because these "Earthlings" would be a bit worse off if the planet dissolved?'

But despite the hysteria, the government hasn't developed a courageous environmental streak. The flat rate of road toll proposed allows The Daily Mail and friends to campaign on the basis that it hurts the poor. With income tax, Tony Blair insists that raising the top level would 'drive the wealthy abroad'. But that can't apply to road tolls. If there was a high rate for flash cars, the rich wouldn't say 'Well then I'm not driving from London, to Bristol. I shall drive from Frankfurt to Prague instead.'

And the reason the petition has attracted such vast numbers is public transport is ridiculously, unreliably, filthily expensive. You can get a cheap ticket, if you book up exactly 237 days in advance via six separate companies in a process that takes longer on the internet than it would to walk where you're going. Otherwise you'll be told, 'There's no saver tickets available today as it's low tide at Margate. So you'll have to pay the full standard fare, which is £60m.'

And the last train between major cities is usually about eight o'clock, because if you want to stay out later than that you're obviously some sort of Bohemian and railways can't run trains just for these artist types with their late nights. So every day thousands of people who would happily take a train go by car.

But even if public transport was immaculate, some people would have to be prised from their cars with a giant shoehorn. These are the people who block the roads with their hideous vast jeep things, and gasp, 'Well I need a vehicle this size for my children.' But why do they? Have their kids got a rare condition that means they can't breathe properly unless they're sat on a piano?

Some people are addicted, and the car companies are probably designing a new range for them, which will enable them to drive through their house. Then in a few years they'll occasionally wet themselves on the settee and say, 'Well I had no way of getting to the toilet as the clutch was busted.' Then they might be persuaded to join a protest, but only if it involves nothing more than beeping their horn, yelling 'Bloody tolls', flashing their lights and making a 'wanker' sign out of their window.

The Independent, 14 February 2007

Activity 3**The driving lobby**

What might the driving lobby be campaigning against? If they are too lazy to go on a march, does that weaken their case?

Evaluate the usefulness of the comparison between the motorists' campaign and Martin Luther King.

In this article, what examples are there of the author distorting the views of his opponents instead of seriously addressing their case?

What is the impact of the survey in *Vroom Vroom* magazine (in the fourth paragraph)?

To what extent is the case of the motorists damaged by Steel's revelation that it is being championed by a member of the Association of British Drivers?

Is there any way that teaching children about climate change could be interpreted as 'state sponsored totalitarianism in education'?

To what extent does the author disagree with *The Daily Mail*? Evaluate the strength of the competing arguments.

How does the author illustrate the unreliable and expensive nature of public transport? What relevance does this have to his argument?

To what extent do 'the people who block the roads with their hideous vast jeep things' demonstrate that some people are 'addicted' to their vehicles?

What does the author believe about the driving lobby and road pricing? What do you think are his reasons for believing this?

Hopefully, you can see that this writing, in spite of its entertainment value, may be viewed as irresponsible and very poorly argued. This shows the value of reading an argument critically.

Contacts

If you are unsure about any of the issues covered in this workbook, or if you have any other questions relating to the course, write them down now on a sheet of paper. These might be about the course structure or content, the exams, the homework – or anything at all to do with your distance learning critical thinking course. You should bring your questions with you and ask your tutor, either when you meet him or her or at your next tutorial.

You can also contact your tutor at any (reasonable!) time throughout your course. Again, this might be to help with homework or unit work, to discuss your progress, to talk about tutorials or exams. At the end of your study guide you will find a list of ways to contact your tutor. Not all of these will be filled in yet. Your tutor will give you the remaining numbers and address during your first tutorial or visit. Please use them. It is far better to bite the bullet and pick up the phone than to struggle alone!

Good luck!

Contact Numbers**Your tutor**

(Fax)

E-mail:

@nelsonthornes.com



(ISDN)



Remember that this is your tutor's home number and address, so if you phone, please respect him or her and do so at a reasonable time – no earlier than 9am and no later than 9pm.

Nelson Thornes Distance Learning

01242 267111



	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
6.00							
7.00							
8.00							
9.00							
10.00							
11.00							
12.00							
13.00							
14.00							
15.00							
16.00							
17.00							
18.00							
19.00							
20.00							
21.00							
22.00							
23.00							
24.00							

Unit 2

The course

On completion of this unit, you should:

- Understand the assessment used on this course.
- Recognise an argument.
- Recognise the difference between argument and simple contradiction.
- Be able to identify the conclusion and reasons in an argument.
- Be able to use the 'therefore' test.
- Recognise conclusion and reason indicator words.

Key Terms

- Analysis
- Evaluation
- Composition of argument
- Argument
- Conclusion
- Reason (or premise)
- The 'therefore' test
- Indicator words

The content of the course and the exams

Aims of the critical thinking course

The syllabus describes the critical thinking course as intending to enable students to:

- understand the importance of examining knowledge and beliefs critically
- recognise, analyse and evaluate their own and others' beliefs and knowledge claims in a variety of contexts
- recognise and evaluate assumptions
- evaluate reasoning of different kinds, including common and important species of reasoning
- make connections and synthesise information and arguments
- generate their own arguments and express them clearly.

Syllabus content

Unit 1: Critical Thinking Foundation Unit (1 hour 30 minutes, 50% of total AS marks)

Unit 2: Inference, Information and Explanation (1 hour 30 minutes, 50% of total AS marks)

Objectives on which you will be assessed in the AS exam (from the specification)

AO1: Analysis

Analyse critically the use of different kinds of reasoning in a wide range of contexts.

AO2: Evaluation

Evaluate critically the use of different kinds of reasoning in a wide range of contexts.

AO3: Composition of argument

Develop and communicate relevant and coherent arguments clearly and accurately in a concise and logical manner.

The AS Critical Thinking exam

The exam for each unit is 1 hour and 30 minutes in length.

The following information is taken from the AQA specification.

Unit 1 Assessment

Candidates will be assessed by means of a written paper lasting 1 hour and 30 minutes. The question paper will be based on a source booklet containing several short documents which may be accompanied by images and/or graphics. These will relate to a single topic or issue, or two or more related topics, and consist of background information and argument. One or more of the documents will be a debate or discussion, or exchange of views.

The question paper will have two sections, A and B.

Section A will require short written answers, assessing a range of skills and understanding (summarised in the Specification: 3.1–3.14). Not all the points in the list will necessarily be addressed by a specific question in every examination.

There are two main categories of question in this section. The first sets specific tasks or questions, such as: 'Identify an implicit assumption...' or 'Is there a flaw...?' Questions in the other category are more open and require candidates to select for themselves the point (or points) which are most relevant. These typically ask the candidate to: 'Comment critically...' or 'Critically evaluate...'

Section B will comprise one or two questions which give candidates the opportunity to present their own reasoning on a subject related to the stimulus materials.

No specialist knowledge of the subject matter will be assumed; nor will such knowledge give any advantage to candidates.

Unit 2 Assessment

Candidates will be assessed by means of a written paper lasting 1 hour and 30 minutes.

The exam will be based on a set of source documents presenting information, either on a single topic or two closely related topics. Between them the documents will present data in a range of forms: verbal, numerical, graphical.

The question paper will consist of two sections, A and B.

Section A will contain a number of questions requiring short written answers. Candidates will engage in: extracting and interpreting information, assessing claims and conclusions, drawing inferences, and offering explanations.

Section B will present candidates with a short statement or proposal related to the examination topic(s), which they will be invited to argue for or against.

Both sections of the paper will require candidates to draw on skills from Unit 1 as well as Unit 2.

(For further information, see also your course textbook, pages viii–ix.)

Sample papers

There are example papers included in the workbook at Units 15 and 25. In due course, we will be working through these as part of your revision and focused exam preparation, but you can look at them at any time to get an idea of where we will heading in your study of the course.

Resources

Books

In order to do the activities in this course, you will need to refer to the course textbook:

- John Butterworth and Joe Chislett, *AQA AS Critical Thinking Student's Book* (Nelson Thornes, 2009)

The AQA course is still in its early days. Many of the books on critical thinking available on the market are oriented towards the course as envisioned by the exam board OCR. So, care must be taken in buying and using such books. They cover much of the same material but there are significant differences in emphasis. If in doubt consult your tutor.

Some books of this type that may be helpful are:

- John Butterworth and Geoff Thwaites, *Thinking Skills* (Cambridge University Press, 2005)
- Roy van den Brink-Budgen *Critical Thinking for AS Level* (How To Books Ltd, 2005)

More general books recommended for further reading are:

- Jamie Whyte, *Bad Thoughts: A Guide to Clear Thinking* (Corvo Books, 2003)
- Anne Thomson, *Critical Thinking: A Practical Introduction* (Routledge, 2002)
- Nigel Warburton, *Thinking From A to Z* (Routledge, 2007)

Websites

<http://philosophy.hku.hk/think/>

<http://www.austhink.org/critical/>

<http://www.idebate.org/debatabase/theme.php?dbTheme=11>

<http://www.newsline.com.pk/>

Understanding argument

Every day we have to make decisions about the things that we should do. These decisions are necessary because we have to make choices. Choices, for example, about where we should go, what we should buy, whether we should meet a friend, whether we should go out for the evening or stay at home and complete some work. Sometimes we make these decisions carefully with much thought, sometimes we make them quickly or impulsively. In making the choice of what to do, we base our decision on a variety of factors, which could include our beliefs, our hopes or what we think is best. Sometimes the decisions that we make are easy – the choice seems to fit in well with our previous hopes or beliefs. On other occasions we find difficulty in deciding what to do and might feel we need to seek advice.

Making a decision and coming to a conclusion is not only related to everyday practical events such as those mentioned above, it is also necessary to make decisions about more complex matters that we come across. We might need to decide whether we believe what is written in a newspaper, or whether what somebody has told us is, in fact, true. Often we find ourselves involved in situations where two people have different views about what happened and we have to decide what we think did, in fact, occur, or which of the two to support. A major event could happen which is then reported on the television or radio. If we were to talk to our friends about the event we might well find that they have different views to each other about the reports. They might see things from different perspectives, especially if they have come from a different region, or a different culture, or have been brought up in a different way. We will then need to reassess whether what we first thought about the event is correct.

All of these things involve us in making a decision. They require us to come to a conclusion about what to believe, what to do or how to behave. If we think in a reasoned and careful way about that decision we are said to be using 'critical thinking'. If we act impulsively, without any careful thought or without considering the principles involved in making a decision, then we are not using critical thinking. Critical thinking is '**reasoned reflective thinking**'.

The word 'critical' does not mean that we are necessarily looking for something that is wrong – rather it means that we should be judging both what is good and what is bad in the reasoning that we have been given. Critical thinking is something we need to practise when we are considering many social, cultural, spiritual, moral and ethical issues. It should really become part of our everyday way of behaving for it helps us to understand what is going on around us, not only when we have to make choices involving our immediate friends but also with the wider issues that reach the media. Understanding that different people see the same issue from a different perspective is crucial in helping us communicate, appreciate and recognise the diversity in our society.

So, this course will enable you to have an opportunity to practise the way you reason and to know whether the conclusions that are drawn really do follow from the evidence, both when you are making the conclusion and when you are considering the conclusions of other people.

Activity 1**Using critical thinking**

Write a situation in your recent life where you feel you used critical thinking. Jot down the reasoning you used to come to decision or conclusion.

What is an argument?

This leads us to the essential feature of this course. We need to consider what we mean by 'an argument' and we need to be able to recognise an argument and distinguish it from other statements.

Only then can we begin to understand how to think 'critically' about it.

Activity 2**Monty Python's argument clinic**

If you aren't familiar with this classic sketch, you should watch it. At the time of writing, you can find it on:

<http://fullmonte.com/media/p/1812.aspx>

Otherwise search Google for 'Monty Python's argument clinic'

The script is appended to this unit, then answer the following questions with the script to hand.

1 Did the customer get what he paid for at the argument clinic?

2 In the sketch, what is and is not regarded as an argument?

There are two quite different definitions of the word 'argument'. One means a **quarrel or disagreement** between people. The other means a **line or chain of reasoning**. Although the two definitions of the word 'argument' are related by the fact that both are often used to persuade or influence others, only one of them – the second one – is of relevance to the thinking skills that we are discussing here.

The basic definition of this meaning of 'argument' is any conclusion supported by at least one reason.

Reason(s) → Conclusion

(Also expressed as **REASON(S) – therefore – CONCLUSION.**)

The conclusions must be drawn from the reasons given and not simply 'made up' at the end without any supporting evidence.

Remember that although the conclusion may follow from all the reasons given it does not mean that the whole statement is necessarily true. Some of the reasoning given that leads to

the conclusion may not be correct so, although the conclusion is based on the evidence, the whole argument may be false.

Example

Imagine a road accident has just taken place. An Audi A8 has driven into the back of a Volkswagen Beetle, and there is damage to both cars. The drivers are beside their cars, shouting at each other. Each thinks the other is to blame.

Volkswagen driver: *How did you ever pass your test, you idiot! You need your eyes testing. This is all your fault, and you ought to have the decency to admit it.*

Audi driver: *Admit what? You didn't even look in your mirror! That car doesn't look fit to be on the road anyway. You caused the accident – why are you trying to blame it all on me?*

Although the two drivers are *having* an argument, neither of them has *produced* an argument. They both think they are right, but neither has given any reason for their position. All they have done is trade insults and make accusations. A reasoned argument has a definite purpose. It is not just a way of letting off steam or expressing anger. Its purpose is to establish the likelihood that something is true, or to get others to accept it, and to do this on the strength of reasons – not just strength of feeling.

Also at the scene are two witnesses – Mr Sugar and Ms Meaden. They have seen what happened, and they, too, disagree over who, or what, was to blame. Mr Sugar claims it was the Volkswagen for stopping too suddenly. Ms Meaden reckons it was the Audi, for travelling too close behind.

Mr Sugar put his thoughts together like this:

There was no need for the car in front to stop at all. The driver just slammed on the brakes without warning. No one could have reacted in time to avoid a collision. Therefore, you can't blame the Audi driver.

In contrast with the drivers, Mr Sugar has successfully produced an argument. Not only does he state his point of view – that you can't blame the Audi driver – he provides reasons to support it. His point of view is, therefore, more than just an unsupported opinion; it is a conclusion that is based on reasons. That is what makes it an argument.

We sometimes call this a '**line of argument**' or a '**chain of reasoning**', because it leads from reasons to a conclusion. Or to put it another way, the conclusion follows from the reasons. If it is true, as Mr Sugar claims, that 'no one could have reacted in time', then (arguably) it does follow that 'you can't blame the Audi driver'.

As mentioned above, to say that this is a reasoned argument is not to say that it is necessarily correct. One or more of the reasons given may be untrue, and the conclusion itself may be untrue. You may wonder how it is possible to decide whether something is an argument or not without knowing whether the sentences in it are true or false. It is important to remember that you can. The only question you need to ask is this:

Assuming that the supporting statements are true; would they offer a good reason to believe that the conclusion was true?

If so, then you are looking at an argument.

Of course, it is important when you are evaluating other people's arguments to be able to find out whether the reasons they offer are true, or whether parts of the argument are weak. These are issues we shall be looking at in later units. For now all we are concerned with is *recognising argument*, and for that purpose we can treat the reasons as true without trying to decide whether they are or not.

After listening to Mr Sugar's argument, Ms Meaden gives her own account. Does what she says amount to an argument?

The road was slippery because it had been raining. In bad weather you have to keep a safe distance. The Audi was very close to the car in front.

No, it doesn't. What she says is just a sequence of statements with no conclusion. That doesn't mean that her statements are unconnected. You can see what Ms Meaden is getting at. She has a motive for saying them, and it is pretty clear what that motive is: she thinks that the driver of the Audi is to blame, only she doesn't say it in so many words. You could say that she implies it without stating it.

To make Ms Meaden's view into an argument, you would need to supply a **conclusion**. For example:

The road was slippery because it had been raining. In bad weather you have to keep a safe distance. The Audi was very close to the car in front. Therefore, it was the Audi driver's fault that the accident happened.

Is this an argument now?

Yes, because her observations about the road conditions, the need to keep a safe distance and, in contrast, the closeness of the Audi do now lead to a stated conclusion. It is not a certain conclusion, of course. It still relies upon claims made by Ms Meaden, which could be disputed by someone else. (For example, what is a 'safe' distance, and how close is 'very' close?) But it is now a recognisable argument.

Activity 3**What is an argument?**

An argument must have a conclusion. This conclusion must be supported by at least one reason.

Which of the following passages are arguments?

In those passages that are arguments, identify the reason(s) and the conclusion.

1 *The legal age for buying alcohol should be raised to 21.*

2 *There are young people all over the place wearing hoodies, buying alcohol, getting drunk and committing acts of anti-social behaviour.*

3 *It's ridiculous that people say young people should not be allowed to drink alcohol. I think young people should be allowed to drink if they want to.*

4 *The legal age for buying alcohol should be raised to 21 to reduce the problems associated with drunken youths in the town centre.*

5 *So what? I think people should be allowed to drink alcohol at any age. It's what I think and I'm entitled to my opinion.*

Activity 4**Identifying arguments**

PART 1

1 Which of (a), (b), (c) is an argument in the critical thinking sense of the term? Why is it?

(a) The play is topical and focused on youth issues. The children at the school will benefit from seeing it.

(b) The play ran for several months in the West End of London. It was about the effects of fortune telling on the lives of three people.

(c) The play was about the search for happiness. It was well received by the critics, but did not turn out to be popular with the public.

Can you say why the two you rejected are not arguments?

Can you devise a conclusion for each of the rejected ones to make them arguments?

PART 2

2 Which of (a), (b), (c) is an argument in the critical thinking sense of the term? Why is it?

(a) I want to be good at languages. I only know a few words of French. I have never studied German.

(b) The books I need to read have not been translated from the original German. The only foreign language I know is French. So, I need to learn German.

(c) It is a long time since I studied any languages. Knowing languages can be helpful in one's work. French and German would be interesting to learn.

Can you say why the two you rejected are not arguments?

Is there a way of using the material in the rejected ones to construct arguments?

The 'therefore' test

Notice that in Mr Sugar's and Ms Meaden's completed argument above, the word 'therefore' is used as a connective to introduce the conclusion, and link it to the reasons. 'Therefore' and 'so', and words like them, are strong clues, not only to help you identify an argument, but also to identify conclusions within the argument.

However, there doesn't have to be a connective at all. If an argument is well expressed and the conclusion obviously follows from the reasons, then the conclusion needs no introduction.

Nor does the conclusion have to be at the end of an argument. It can be in the middle or even at the beginning. It is very common to start an argument with the conclusion and then give the supporting reasons. For instance:

It was the Audi driver's fault that the accident happened. The road was slippery because it had been raining. In bad weather you have to keep a safe distance, and the Audi was too close to the car in front.

Having said all that, the general form of an argument is usually thought of as:

REASON(S) – therefore – CONCLUSION

It is a useful test of a would-be argument to change it into that order: to try out each of the sentences at the end with the word 'therefore' in front of it. If it doesn't make sense, it is because it is not an argument.

It is only an argument if it does make sense and the final sentence follows on from those that come before it. If you take the sentences of Ms Meaden's incomplete argument above, for example, none of them makes sense in the conclusion position after 'therefore' (or 'so').

*The road was slippery because it had been raining. In bad weather you have to keep a safe distance. **Therefore**, the Audi was very close to the one in front.*

*The Audi was very close to the one in front. In bad weather you have to keep a safe distance. **Therefore**, the road was slippery because it had been raining.*

*The Audi was very close to the one in front. The road was slippery because it had been raining. **Therefore**, in bad weather you have to keep a safe distance.*

Compare this final example:

Stopping distances increase in proportion to a car's speed. Speed limits should be reduced if the weather is bad. In wet weather it can take even longer for a car to stop.

Can these sentences be rearranged to make sense in the form already explained?

REASON(S) – therefore – CONCLUSION

Yes, they can. The middle sentence very clearly follows on from the other two:

*Stopping distances increase in proportion to a car's speed. In wet weather it can take even longer for a car to stop. **Therefore**, speed limits should be reduced if the weather is bad.*

In fact, conclusions may be often preceded by words such as:

- therefore, so, it follows that, hence, thus, consequently
- suggests, proves, demonstrates that
- entails, implies.

Activity 5**Using the 'therefore' test**

Identify which of the three options is an argument in the critical thinking sense and say why the others are not. Use the 'therefore' test to help you.

1 (a) *Some zoos run programmes for breeding rare animals. In recent years, attempts have been made to get pandas to breed. Not many pandas have been bred in captivity.*

(b) *Zoos must make changes in order to remain popular. Zoos tend to keep their animals in small cages. The public no longer like to see animals kept in this way.*

(c) *Zoos must be very expensive to run. They are attractive places to visit, though children benefit from seeing live animals.*

2 (a) *Pete is quick to pick up new skills. He is meticulous about his work. He finds it difficult to work as one of a team.*

(b) *The job requires knowledge of computers. Some training will be provided. Candidates must also be able to work in a team.*

(c) *Tamara is likely to get promotion. She has worked hard in her present position. She has spent time preparing for her interview for promotion.*

3 (a) *The number of burglaries in the town has risen sharply. Houses with electronic alarms are less likely to be burgled than houses without alarms. A determined burglar will not be put off by an electronic alarm.*

(b) *Penderton, Maxwell and Deakins have each been charged with burglary. All three men were seen leaving the house carrying bags. They are claiming that they were nowhere near the house at the time when the burglary took place.*

(c) *Courts normally give a more severe sentence to someone who has previous convictions. Out of the three men, who all face the same charge, only Penderton has previously been convicted for an offence. The other two are likely to get lighter sentences than Penderton.*

4 (a) *Someone has just come into the shop and paid me with four banknotes that all have the same serial number. They must be forgeries. Genuine banknotes would all have different serial numbers.*

(b) *There are a lot of forged banknotes around these days. If you are unlucky enough to be passed a forged note, you should take it to the police. There are machines that can detect forged notes.*

(c) *I was once shown two banknotes, one of which, I was told, was a forgery. If it was a forgery, it was a very good one. With modern technology it is possible to make forgeries that are almost indistinguishable from the real thing.*

5 (a) *Dangerous sports such as motor racing are challenging and exciting. They supply many people with employment and provide entertainment. Unfortunately, they often result in injury or death.*

(b) *Boxing should be banned once and for all. No sport should be allowed in which the object is to injure an opponent. Boxers quite deliberately set out to injure each other.*

(c) *There is little enough danger and excitement in life these days. One exhilarating activity is rock climbing. Sometimes fatal accidents occur during rock climbing.*

6 (a) *I've checked the oil level in your engine and it is below the minimum level. I've refilled it. If it goes below the minimum level again, take your car to a garage.*

(b) *Oil in the engine lubricates the moving parts. If the engine runs out of oil, the engine can be seriously damaged. Your engine is getting rather low on oil.*

(c) *One should always check the oil in one's car before going on a long journey. I have to drive to Karachi today, which is a very long way. I must check the oil in my car before I set off.*

7 (a) *If you want to stop burglars climbing into your garden you should plant thorny bushes next to the fence. The Himalayan rose is very thorny and grows fast. Other rose bushes aren't as thorny.*

(b) *You won't get burglars climbing into your garden. Burglars won't bother climbing through thorny bushes. You have thorny bushes all round your garden.*

(c) *Most burglars get into houses through the back garden. If your garden fence is low, it is easy for someone to climb over it. Burglars rarely break in when they know there is a dog in the house.*

8 (a) *The product was selling well until three weeks ago, when the manufacturers changed the packaging. Since then sales have fallen. The new packaging is much less wasteful of materials.*

(b) *The way a product is packaged should not affect how well or how badly it sells. People sometimes judge a product on its appearance rather than its quality. Manufacturers often spend as much on packaging as they do on the product itself.*

(c) *It seems likely that people are influenced by the way products are packaged. The only difference between two items on sale was the colour of the box they were packed in. The blue one sold much better than the red one, even when they were next to each other on the same supermarket shelf.*

Reasons and reason indicators

In this course, the words 'reason' and 'premise' are used synonymously. We will stick to the word 'reason' in this workbook. ('Premise' is the more technical term, and is sometimes more precise since 'reason' can have a wider range of uses.)

If a person makes a statement, and then adds 'this is because ...', then it is quite likely that the first statement is presented as a conclusion, supported by the reasons that come afterwards. Other words in English that might be used to indicate the reasons that follow include:

- since, for, as, after all
- firstly, secondly, ...
- assuming that, in view of the fact that

- follows from, as shown/indicated by
- may be inferred/deduced/derived from.

Read Chapters 1 and 2 of your course textbook. These two chapters examine the issues on conclusions and reasons considered here.

Test Yourself: Key Terms

- Analysis
- Evaluation
- Composition of argument
- Argument
- Conclusion
- Reason (or premise)
- The 'therefore' test
- Indicator words

APPENDIX

The argument sketch

From *Monty Python's Previous Record* and *Monty Python's Instant Record Collection*

Originally transcribed by Dan Kay (dan@reed.uucp)

Fixed up and Added 'Complaint' and 'Being Hit On The Head lessons' Aug/87

by Tak Ariga (tak@gpu.utcs.toronto.edu)

The cast (in order of appearance)

M = Man looking for an argument (Michael Palin)

R = Receptionist

Q = Abuser

A = Arguer (John Cleese)

C = Complainer (Eric Idle)

M: Ah. I'd like to have an argument, please.

R: Certainly sir. Have you been here before?

M: No, I haven't, this is my first time.

R: I see. Well, do you want to have just one argument, or were you thinking of taking a course?

M: Well, what is the cost?

R: Well, it's one pound for a five minute argument, but only eight pounds for a course of ten.

M: Well, I think it would be best if I perhaps started off with just the one and then see how it goes.

R: Fine. Well, I'll see who's free at the moment.

Pause

R: Mr. DeBakey's free, but he's a little bit conciliatory. Ahh yes, Try Mr. Barnard; room 12.

M: Thank you.

(Walks down the hall. Opens door.)

Q: WHAT DO YOU WANT?

M: Well, I was told outside that ...

Q: Don't give me that, you snotty-faced heap of parrot droppings!

M: What?

Q: Shut your festering gob, you tit! Your type really makes me puke, you vacuous, toffee-nosed, malodorous, pervert!!!

M: Look, I CAME HERE FOR AN ARGUMENT, I'm not going to just stand ... !!

Q: OH, oh I'm sorry, but this is abuse.

M: Oh, I see, well, that explains it.

Q: Ah yes, you want room 12A, Just along the corridor.

M: Oh, Thank you very much. Sorry.

Q: Not at all.

M: Thank you.

(Under his breath) Stupid git!!

(Walk down the corridor)

M: *(Knock)*

A: Come in.

M: Ah, is this the right room for an argument?

A: I told you once.

M: No you haven't.

A: Yes I have.

M: When?

A: Just now.

M: No you didn't.

A: Yes I did.

M: You didn't

A: I did!

M: You didn't!

A: I'm telling you I did!

M: You did not!!

A: Oh, I'm sorry, just one moment. Is this a five minute argument or the full half hour?

M: Oh, just the five minutes.

A: Ah, thank you. Anyway, I did.

M: You most certainly did not.

A: Look, let's get this thing clear; I quite definitely told you.

M: No you did not.

A: Yes I did.

M: No you didn't.

A: Yes I did.

M: No you didn't.

A: Yes I did.

M: No you didn't.

A: Yes I did.

M: You didn't.

A: Did.

M: Oh look, this isn't an argument.

A: Yes it is.

M: No it isn't. It's just contradiction.

A: No it isn't.

M: It is!

A: It is not.

M: Look, you just contradicted me.

A: I did not.

M: Oh you did!!

A: No, no, no.

M: You did just then.

A: Nonsense!

M: Oh, this is futile!

A: No it isn't.

M: I came here for a good argument.

A: No you didn't; no, you came here for an argument.

M: An argument isn't just contradiction.

A: It can be.

M: No it can't. An argument is a connected series of statements intended to establish a proposition.

A: No it isn't.

M: Yes it is! It's not just contradiction.

A: Look, if I argue with you, I must take up a contrary position.

M: Yes, but that's not just saying 'No it isn't.'

A: Yes it is!

M: No it isn't!

A: Yes it is!

M: Argument is an intellectual process. Contradiction is just the automatic gainsaying of any statement the other person makes.

(short pause)

A: No it isn't.

M: It is.

A: Not at all.

M: Now look.

A: *(Rings bell)* Good morning.

M: What?

A: That's it. Good morning.

M: I was just getting interested.

A: Sorry, the five minutes is up.

M: That was never five minutes!

A: I'm afraid it was.

M: It wasn't.

Pause

A: I'm sorry, but I'm not allowed to argue anymore.

M: What?!

A: If you want me to go on arguing, you'll have to pay for another five minutes.

M: Yes, but that was never five minutes, just now. Oh come on!

A: *(Hums)*

M: Look, this is ridiculous.

A: I'm sorry, but I'm not allowed to argue unless you've paid!

M: Oh, all right.

(pays money)

A: Thank you.

(short pause)

M: Well?

A: Well what?

M: That wasn't really five minutes, just now.

A: I told you, I'm not allowed to argue unless you've paid.

M: I just paid!

A: No you didn't.

M: I DID!

A: No you didn't.

M: Look, I don't want to argue about that.

A: Well, you didn't pay.

M: Aha. If I didn't pay, why are you arguing? I got you!

A: No you haven't.

M: Yes I have. If you're arguing, I must have paid.

A: Not necessarily. I could be arguing in my spare time.

M: Oh I've had enough of this.

A: No you haven't.

M: Oh shut up.

(Walks down the stairs. Opens door.)

M: I want to complain.

C: You want to complain! Look at these shoes. I've only had them three weeks and the heels are worn right through.