Resource Pack
For use with the IB Programme.
Welcome to Rationale™ Rigour

Austhink™ is creating resources for IB Primary Years, Middle Years and Diploma Programmes.

Browse the following pages to see what we’re doing...

This material has been developed independently of the International Baccalaureate, which in no way endorses it.
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1. Critical thinking exercises ideal for Middle Years Programme and Diploma Programme learners.

This set of exercises is designed to help IB learners develop skills in creating thinking maps using Rationale™. The exercise sets each take about 15 minutes. They are designed to scaffold learning and foster confidence by progressively building upon skills in easy steps.
Rationale™ Exercises
For use in IB Programmes
Home > Set 1 > Exercise 1

Now you can try this yourself.

Exercise 1

1. Make a grouping map showing the relationships between these ideas:

Drag this image onto the workspace to proceed. You must be using the inbuilt browser in Rationale 1.3 or later.

Hints:
- Start by dragging the boxes onto the workspace
- Make sure every item finds a place on the Grouping map
- No item can belong to two different groups
- Specific examples like 'Italy' (a country) can't go on the same level as a more general idea 'Asia' (a continent or region).
- You won't need to make a new box for this exercise

2. Check your work against the model.

Construct your own map to complete the exercise.

Drag exercise materials onto the workspace.

Check your work against the model answer.

At this stage we don't need to worry about the order of the items at a given level in a branch - it only matters that we get them at the right level and in the right branch. There are ordering principles we could have used, but these only become important in advanced argument-mapping work.
Rationale™ Exercises
For use in IB Programmes

Exercise 4

1. Make a Rationale Reasoning map representing the argument in the following text:

Everyone should eat breakfast. It is the most important meal of the day, since it provides you with the energy that the body needs to start the day well. But sometimes you’re not hungry at breakfast, however it’s nonetheless good for you even when you’re not hungry.

Drag and drop sections of the above text onto the workspace to proceed. This works with any version of Rationale.

Hints

- Refine all your claims by making them fully fleshed out, unambiguous declarative sentences
- Look for indicator words that reveal whether claims are positions, reasons, or objections
- When you don’t have indicators to give you clues, you’ll need to work out the argument’s logical structure by thinking about which claims give support to, or undermine, other claims, and which claim expresses the argumentative position (the main point at stake)
- If you have trouble working out where to locate a reason, ask yourself: does this reason offer direct support for the position, or does it support some other claim?

2. Check your work against the model.
Exercise 1

1. Evaluate the following argument map:

- You should smoke cigarettes
  - Smoking is good for your health
  - Smoking makes you look more sophisticated
  - John enjoys smoking

Hints:
- Start evaluating at the leftmost basis box and work through one branch at a time from bottom to top, and finish by evaluating the position.
- When evaluating basis boxes, ask yourself: is this a reliable source of information? Does the basis provide sufficient evidence for me to believe the claim above it?
- When evaluating reasons, ask yourself: what confidence do I have in this reason, given my assessment of its basis?
  - If you think the basis is reliable, ask yourself: does this reason give support for the position? How good a reason is it - strong or weak?
  - If you think the basis is unreliable, ask yourself: could I still reasonably accept this claim on other grounds? If the answer is no, then the reason can't provide any support for the position.
- Now evaluate the position: what confidence do you have in this, given your evaluation of the top layer of reasons? On balance, is there a better case for accepting it, rejecting it, or taking no stand on the matter?

2. Check your work against the model.

Drag this image onto the workspace to proceed. You must be using the inbuilt browser in Rationale 1.3 or later.
Exercise 2

1. Evaluate this Analysis map:

- Macbeth was evil
- Macbeth was respected by others
- Evil people are not respected by others

Hints:
- First evaluate each of the premises. Ask yourself: Is this true? Should I accept it, reject it, or reserve judgment (Hmmm).
- Click on each premise's claim box, go to the 'Evaluate' section of the ribbon and click on your assessment.
- Then evaluate the whole objection. Ask yourself: Does this objection undermine the position?
- Finally evaluate the position: what confidence do you have in it, given your assessment of the objection?
- If you rated the objection as 'hmm' stop and think carefully about what this means for the position. Do we have any evidence for making our minds up either way?
- Make sure you've put evaluation icons in all boxes, as well as coloring the body of the objection itself.

2. Check your work against the model.

Learn to make and evaluate advanced analysis maps showing copremise structures.
2. Theory of Knowledge resources for IB Diploma.

Our TOK resources include:

- Online exercises to practice key TOK concepts.
- TOK specific sample maps.
- Example maps and text that show how to use Rationale to plan a TOK essay.
Online exercises for students to practice TOK key concepts. Topics include:

- Deductive & Inductive
- Validity & Soundness
- A priori & a posteriori
- Knowledge as justified true belief
- Three theories of truth
- Science & pseudo-science
- Objective & Subjective
- Syntax & Semantics
- Fallacies

More topics coming!
Deductive & Inductive Reasoning

Deduction and induction are two kinds of reasoning. The difference between them lies in the relation that purportedly exists between the argument's premises and its conclusion.

In **deductive** reasoning, the person offering the argument takes it that the premises guarantee the truth of the conclusion. If the premises are true, it's *impossible* that the conclusion could be false. Deductive reasoning doesn't go beyond the information that's already contained in the premises.

- This doesn't mean that all deductive arguments will have true premises (see 'Soundness')
- Neither does it mean that all deductive arguments make solid logical connections between the premises and the conclusion (see 'Validity')

In **inductive** reasoning, the premises are intended to give some evidence that the conclusion is true. If the premises are true, the conclusion is probably true (but could still turn out to be false). Inductive reasoning purports to extend our knowledge, i.e., to draw a conclusion which goes beyond the information contained in the premises.

If your TOK text book offers a definition in terms of 'the general' and 'the particular' [click here](#) for an important note.

**Let's try a practice exercise...**

Sort the white boxes into two categories according to whether the arguments they contain are deductive or inductive:

![Practice exercises to complete on the workspace.](image)

Drag this image onto the workspace to proceed. You must be using the inbuilt browser in Rationale 1.3 or later.

After you've finished this exercise drag this thumbnail onto the workspace to see the model answer:

![Check your work against the model answer.](image)
Ibiza is either in the Balearic Islands or the Canary Islands. If Ibiza is in the Canary Islands, it is Spanish territory. If Ibiza is in the Balearic Islands then it is Spanish territory. So Ibiza is Spanish territory.

All men are mortal. Socrates is a man. Therefore, Socrates is mortal.

It has rained in Bangalore every August in recorded history. Therefore it will rain in Bangalore this coming August.

Nature resembles a watch since both are intricate and complex. A watch has a designer. Therefore nature has a designer.

Diabetics often develop kidney disease. Mary is a diabetic, so Mary will develop kidney disease.

I'm either an IB student or a cat. I'm not a cat. Therefore, I'm an IB student.

My cousin Con has dark hair. My cousin Nico has dark hair. My cousin Tony has dark hair. So my cousin Costas will have dark hair too.

Ali is short. Tamsyn is short. Mia is short. Ali, Tamsyn and Mia are my only sisters. Therefore all of my sisters are short.

If it's Monday then I should be at school. It's Monday, so I should be at school.

Every swan I've ever seen was white. Therefore the next swan I see will be white.
Deductive

The premises are supposed to guarantee the truth of the conclusion. If the premises are true, it’s impossible that the conclusion could be false.

All men are mortal. Socrates is a man. Therefore, Socrates is mortal.

Ibiza is either in the Balearic Islands or the Canary Islands. If Ibiza is in the Canary islands, it is Spanish territory. If Ibiza is in the Balearic Islands then it is Spanish territory. So Ibiza is Spanish territory.

Inductive

The premises support the probable truth of the conclusion. If the premises are true, the conclusion is unlikely to be false (but could still turn out to be so).

Nature resembles a watch since both are intricate and complex. A watch has a designer. Therefore nature has a designer.

Diabetics often develop kidney disease. Mary is a diabetic, so Mary will develop kidney disease.

Every swan I’ve ever seen was white. Therefore the next swan I see will be white.

It has rained in Bangalore every August in recorded history. Therefore it will rain in Bangalore this coming August.

My cousin Con has dark hair. My cousin Nico has dark hair. My cousin Tony has dark hair. So my cousin Costas will have dark hair too.

This is an example of an argument that goes from the particular to the general, but is nonetheless deductive. If the premises are all true, it would be impossible for the conclusion to be false.

This is an example of an argument that goes from the general to the particular, but is nonetheless inductive, as it aims to extend our knowledge and the truth of the conclusion isn’t guaranteed by the truth of the premise (e.g. I might have just arrived in Western Australia from England).
Validity & Soundness

Validity and soundness are two criteria that we apply to subsets of deductive arguments.

A **valid** argument is one that has a form that would make it impossible for the conclusion to be false if the premises were true. Validity has nothing to do with whether or not the premises are actually true - the term describes the form an argument takes, rather than its content.

- This is a special, technical usage of the word ‘valid’ as distinct from the everyday use of the term. Click here for further discussion of this point.

An **invalid** argument is one with a flawed form. For example, there is a problem with any argument that goes: If A then B, not A therefore not B. Why? Think about it: If a cannon is fired then there’s a loud noise. Now suppose the cannon isn’t fired. That doesn’t mean it’s guaranteed there won’t be a loud noise, because loud noises can be caused by many other things besides a cannon firing!

A **sound** argument is one that is both valid and has true premises.

**Let’s try a practice exercise...**

Sort the white boxes into categories according to whether the arguments they contain are invalid, valid but unsound, or sound.

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Practice exercises to complete on the workspace.

Check your work against the model answer.

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[ Knowledge ] [ A priori/posteriori ] [ Truth ] [ Objective/Subjective ] [ Syntax/Semantics ] [ Deductive/Inductive ] [ Validity/Soundness ] [ Fallacies ]
[ Inductions & Hypotheses ] [ Pseudo-science ]
Either the moon is made of green cheese or it's made of chocolate. The moon isn't made of green cheese. Therefore the moon is made of chocolate.

If it's Wednesday then I should be at school. I should be at school. Therefore it is Wednesday.

All cats are astronauts. All astronauts have travelled to another galaxy. Therefore all cats have travelled to another galaxy.

If New York is south of the Equator, and the Equator is south of Antarctica, then New York is south of Antarctica.

All archeologists dig things up. My dog digs things up. Therefore my dog is an archeologist.

No mammals can live without air. Humans are mammals. Therefore humans cannot live without air.
Arguments in which the conclusion doesn’t go beyond the information contained in the premises.

Deductive arguments

Valid but not sound

Sound (valid AND has true premises)

No mammals can live without air. Humans are mammals. Therefore humans cannot live without air.

If 12 is greater than 9, and 9 is greater than 6, then 12 is greater than 6.

All circles are round. No round objects have corners. Therefore no circles have corners.

All cats are astronauts. All astronauts have travelled to another galaxy. Therefore all cats have travelled to another galaxy.

If New York is south of the Equator, and the Equator is south of Antarctica, then New York is south of Antarctica.

Either the moon is made of green cheese or it’s made of chocolate. The moon isn’t made of green cheese. Therefore the moon is made of chocolate.

If it’s Wednesday then I should be at school. I should be at school. Therefore it is Wednesday.

All archeologists dig things up. My dog digs things up. Therefore my dog is an archeologist.

This reasoning takes the form: If A then B, B, therefore A. This is a fallacy (mistake in reasoning) known as ‘affirming the consequent’.

The reasoning takes this mistaken form: All As are B. C is B. Therefore C is A.
There are many different authorities, including academics, politicians, global organizations and companies, who make knowledge claims. As an experienced TOK student, what criteria do you use to distinguish between knowledge, opinion and propaganda?

### Introduction

State my position i.e. what my essay will argue for.

There are criteria that an experienced TOK student can use for distinguishing knowledge, opinion and propaganda.

I will explain these terms in the body.

I will develop these criteria in the body.

The key terms are 'knowledge', 'opinion' and 'propaganda'.

The areas of knowledge I will look at are the arts, history, and the natural sciences.

The areas of knowledge I will look at are the arts, history, and the natural sciences.

### Body

Specify areas of knowledge to be covered.

Specify problems of knowledge to be addressed.

Identify key terms.

The key terms are 'knowledge', 'opinion' and 'propaganda'.

Apply the key terms in each area of knowledge under discussion.

Analyze the key terms.

There are criteria for distinguishing knowledge, opinion and propaganda.

Propaganda subverts the process of belief formation.

There is criteria for distinguishing knowledge, opinion and propaganda.

Distinguishing knowledge from opinion depends on identifying what counts as justified true belief in a given area of knowledge.

Chief example: Leni Riefenstahl's 1935 German film 'Triumph of the Will'.

Chief example: The American Iwo Jima flag dispute in the 1990s.

Chief example: Greenpeace and genetically modified crops in Zambia during 2002.

Knowledge, opinion and propaganda in the arts.

Knowledge, opinion and propaganda in history.

Knowledge, opinion and propaganda in the natural sciences.

More detailed map attaches here.

More detailed map attaches here.

More detailed map attaches here.

### Conclusion

Restate concisely what I have shown.

Propaganda is a way of presenting information, rather than a class of beliefs, and it works in broadly similar ways in the areas of knowledge surveyed.

There are criteria for distinguishing knowledge, opinion and propaganda.

Propaganda subverts the process of belief formation.

There are criteria for distinguishing knowledge, opinion and propaganda.

Distinguishing knowledge from opinion depends on identifying what counts as justified true belief in a given area of knowledge.

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Knowledge, opinion and propaganda in the arts.

Knowledge, opinion and propaganda in history.

Knowledge, opinion and propaganda in the natural sciences.

More detailed map attaches here.

More detailed map attaches here.

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### Explanations

Propaganda subverts the process of belief formation.

Propaganda is a way of presenting information, rather than a class of beliefs, and it works in broadly similar ways in the areas of knowledge surveyed.

There are criteria for distinguishing knowledge, opinion and propaganda.

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Knowledge, opinion and propaganda in the arts.

Knowledge, opinion and propaganda in history.

Knowledge, opinion and propaganda in the natural sciences.

More detailed map attaches here.

More detailed map attaches here.

More detailed map attaches here.

### Forward-looking Comments

It would be interesting to see whether the mechanisms of propaganda work differently in another area of knowledge like ethics, which many feel is like the arts where knowledge is subjectivist and based on emotion, rather than objectivist and based on reasoning.

I will develop these criteria in the body.

I will explain these terms in the body.

My chief examples are drawn from a variety of sources, and reflect cultural diversity. I will also include smaller examples from my own personal experience, as per TOK marking criteria.

Something can be both good art and propaganda, but not both propaganda and good history, or propaganda and good science.

Propaganda subverts the process of belief formation.

There are criteria for distinguishing knowledge, opinion and propaganda.

Distinguishing knowledge from opinion depends on identifying what counts as justified true belief in a given area of knowledge.

Chief example: Leni Riefenstahl's 1935 German film 'Triumph of the Will'.

Chief example: The American Iwo Jima flag dispute in the 1990s.

Chief example: Greenpeace and genetically modified crops in Zambia during 2002.

Knowledge, opinion and propaganda in the arts.

Knowledge, opinion and propaganda in history.

Knowledge, opinion and propaganda in the natural sciences.

More detailed map attaches here.

More detailed map attaches here.

More detailed map attaches here.
Informed critics can agree on standards for good art, so we can say we know a particular piece is art. "Triumph of the Will" is art rather than just a film as it offers us as aesthetic conception (albeit a Nazi one) and it makes innovative use of 1930s cinematographic technology, e.g., moving devices shift the camera to create artistic effects.

Art can convey knowledge, but it does so in a way particular to this area of knowledge. The knowledge art conveys is subjective. 'Art speaks to us about our own experiences.' A short example from my own personal experience, meeting TOK marking criteria.

Development of general thesis laid out earlier, applying it to this particular area of knowledge. A key point that I will compare across areas of knowledge in the conclusion.

Truth in art isn't a matter of what is depicted being literally true, like the criterion of truth for a scientific fact. Knowing that this film is art and recognizing it as propaganda isn't mutually exclusive. Leni Riefenstahl wanted to depict the Nazi movement in a favourable light and to encourage identification with it. "Triumph of the Will" conveys propagandistic themes through imagery and cinematographic techniques.

Art conveys knowledge that 'informs our interactions with the world.' Hitler is depicted as a deity. Still from 'Triumph of the Will', www.dvdbeaver.com

Feelings of solidarity and German national unity are encouraged. The faces of others besides Hitler and party officials are not shown, they are instead depicted as anonymous, regimented members of the masses. Geometric marshalling of the crowd and the use of uniforms and insignia are repeatedly depicted, suggesting acclamation for Hitler and unification of the masses.

We are provided with a partial presentation of the truth: the Nuremburg rallies happened, but the film presents this from a limited (manipulative) viewpoint. There aren't fallacies (mistakes in reasoning) in what is presented as this film doesn't 'argue' by way of reasons, instead it makes a distorted appeal to the emotions.

Responding to the National Socialist aesthetic amounts to embracing a whole political view, rather than being 'spoken to about my own experiences'. A short example from my own personal experience, meeting TOK marking criteria.

The first area of knowledge to be discussed. Knowledge, opinion and propaganda in the Arts. My example of propaganda in this area of knowledge. Here's why I don't think the film conveys knowledge by the standards appropriate for this area of knowledge.

The opening scenes portray Hitler's arrival at Nuremburg as like the Second Coming of Christ or a reincarnation of the Germanic god Woden. Still from 'Triumph of the Will', www.dvdbeaver.com

The camera is mostly positioned below the level of Hitler's face, 'which has the effect of immediately subjugating the spectator'. Geometric marshalling of the crowd and the use of uniforms and insignia are repeatedly depicted, suggesting acclamation for Hitler and unification of the masses.

The faces of others besides Hitler and party officials are not shown, they are instead depicted as anonymous, regimented members of the masses. Still from 'Triumph of the Will', fp.okstate.edu

Here's why I don't think the film conveys knowledge by the standards appropriate for this area of knowledge.

My example of propaganda in this area of knowledge. An example of propaganda in this is Leni Riefenstahl's film 'Triumph of the Will (1935)'.

Still from 'Triumph of the Will', fp.okstate.edu

Map showing how to use Rationale to plan a TOK essay: essay microstructure.

I've kept track of my sources so I can reference my essay properly.
Knowledge, opinion and propaganda in the Arts (essay fragment)

Informed critics can agree on standards for good art, so we can say we know a particular piece is art. For example, Leni Riefenstahl’s ‘Triumph of the Will’ (1935) is art rather than just a film as critics agree that it offers an aesthetic conception (albeit a Nazi one), and it makes innovative use of 1930s cinematographic technology, e.g. moving devices shift the camera to create artistic effects.¹

Art can also convey knowledge, but it does so in a way particular to this area of knowledge. Truth in art isn’t a matter of what is depicted being literally true, like the criterion of truth for a scientific fact.² Alchin says that the knowledge art conveys is subjective rather than objective, as art ‘speaks to us about our own experiences’.³ I think he is correct, based on an experience I had while reading Chinua Achebe’s Things Fall Apart for a literature course. The theme of a hero with a fatal character flaw resonated with me. My teacher saw the most significant theme as the displacement of traditional values in colonial Africa. My teacher’s view is more informed by literary theory and comes closer to the ideal of knowledge (as expert consensus). My view is still a respectable opinion as the book resonated with my subjective experience of characters in Macbeth.

Alchin also suggests that art conveys knowledge that ‘informs our interactions with the world’.⁴ He means that the aesthetic experiences I have shape what I feel, think and go on to do. This is important when it comes to the question of propaganda, where the ‘shaping’ is illegitimate. ‘Triumph of the Will’, which I mentioned earlier, is an example of propaganda in the arts. Knowing that this film is art and recognizing it as propaganda isn’t mutually exclusive.

Leni Riefenstahl wanted to depict the Nazi movement in a favourable light and to encourage identification with it. Her film uses imagery and cinematographic techniques to convey propagandistic themes. Firstly, Hitler is depicted as a deity. The film’s opening scenes portray Hitler’s arrival at Nuremberg as like the Second Coming of Christ or a reincarnation of the Germanic god Woden. In addition, the camera is mostly positioned below the level of Hitler’s face, ‘which has the effect of immediately subjugating the spectator’.⁵

Secondly, the film encourages feelings of solidarity and German national unity. The geometric marshalling of the crowd and the use of uniforms and insignia are repeatedly depicted, suggesting acclamation for Hitler and unification of the masses.⁶ Furthermore, the faces of others besides Hitler and party officials are not shown, they are instead depicted as anonymous, regimented members of the masses.⁷

¹ To what extent are the labels of “propaganda” and “art” appropriate in the description of Leni Riefenstahl's Triumph des Wills (1935)', Edmund Butcher, http://www.geocities.com/ebutcher1/7200727, accessed 4/7/07.
³ Alchin, p. 41.
⁴ Alchin, p. 41.
⁵ http://www.geocities.com

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There aren't fallacies (mistakes in reasoning) in what is presented, as this film doesn't 'argue' by way of reasons, instead it makes a distorted appeal to the emotions. Another factor typical of propaganda is that we are provided with a partial presentation of the truth: the Nuremberg rallies happened, but the film presents this from a limited (and manipulative) viewpoint. Responding to the National Socialist aesthetic depicted amounts to embracing a whole political view, rather than being 'spoken to about my own experiences', so this film doesn't convey knowledge by the standards appropriate for this area of knowledge.

⁶ http://www.geocities.com
⁷ http://www.geocities.com
3. Essay planning resources for Primary and Middle Years Programmes.

Essay writing is frequently difficult for students and oftentimes a great chore for teachers to assess. The problems are often a lack of coherence, poor structure and information without a point.

Rationale’s essay planner templates provide guided instruction for structured arguments and meaningful prose.
Bollywood films are great. There are two main reasons supporting this position, and the main objection to it can be rebutted.

The first reason is that Bollywood films are entertaining, since Bollywood films have different cultural influences to my own. [You can put a relevant example or an explanation of this here, or provide further evidence for it. Do you have a source, reference or a quote you can use?]

The second reason to think that Bollywood films are great is that Bollywood films are interesting. This is because Bollywood films have different cultural influences to my own. [You can put a relevant example or an explanation of this here, or provide further evidence for it. Do you have a source, reference or a quote you can use?]

On the other hand, a consideration against the idea that Bollywood films are great is that they are long. This objection is not convincing, however, because great films are often long. [Can you think of any changes in circumstances that would make you reconsider your position? Describe them and explain why and how your position might change.]

Based on this reasoning it is clear that Bollywood films are great. [You can put a relevant example or an explanation of this here, or provide further evidence for it. Do you have a source, reference or a quote you can use?]
More essay writing skills practice in another online exercise.

**Set 6 - Essays**

Rationale™ has an imbuilt essay planner. This tool can help you learn how to write well-structured essays that express your ideas clearly.

**Skills**
- Represent an argument clearly in essay form

**Key concepts**
- Signposting
- Indicators
- Introduction
- Body
- Conclusion
- Essay Planning

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**Rationale™ Exercises**

For use in IB Programmes

Home > Set 6 > Set 6 - Essays

Home > Set 6 > Second page

We'll look at two common kinds of essay in this set:

- **A literature essay** makes a case for a position by compiling a set of reasons which support that view.
- **An argumentative essay** argues for a position by offering supporting reasons, anticipating objections someone might make and rebutting those objections.

Rationale has essay planning templates of both these kinds.

The essay planning tool is easy to use. You follow these steps:

**Step 1.** Switch to the Essay Planning pane or select its icon below the Building Pane

**Step 2.** Select an essay planning template, drag and drop it onto the workspace

**Step 3.** The essay is generated in the Preview pane

**Step 4.** Save (export) your essay plan in Word or other word processing software. The exported document has additional guidance on how to flesh out an essay.

Try this now for yourself, using one of the ‘filled in’ examples.

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Back • Next
**Ordering your ideas**

A good essay lays out ideas in a helpful and clear order. Here’s an argument map:

- Position
  - Reason 1
    - Support for reason 1
  - Reason 2
    - Support for reason 2
  - Objection
    - Rebuttal

If you were going to write an essay based on this map, one important job would be to work out the best way to arrange the ideas on the page.

The map is very clear about how the reasoning goes. We can keep this clarity by carefully arranging the claims in the essay:

- The **introduction** clearly identifies the position.
- The **body** examines the branches of the argument. The essay steps the reader through the argument one branch at a time, working from the top of the branch to the bottom. So our essay would have this form:
  - First body paragraph: Reason 1 then support for reason 1
  - Second body paragraph: Reason 2 then support for reason 2
  - Third body paragraph: Objection then rebuttal
- The **conclusion** reminds the reader of the position.

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**Signposting your essay**

'Signposts' are words and phrases that help the reader follow what you're doing in the essay.

- They work much the same way that signs do on a road trip:
  - In the introduction signposts tell the reader what to expect.
  - In the body signposts tell the reader where you’re up to in the argument.

There are two main reasons supporting this position, and the main objection to it can be rebutted.

- Anglessea
  - Refreshments 50 m on left
  - Petrol: 150 m on right
  - Accommodation: 250 m on left

  The first reason is...
  The second reason...

On the other hand...
Activity to practice structuring an essay.

Rationale Exercises

For use in IB Programmes

Home > Set 6 > Exercise 1

Exercise 1

Here's a map we could use to structure an argumentative essay that makes the case that mobile phones should be banned in schools:

1. Use the mobile phones map to construct a short essay. We'll provide all the pieces of text you need - your job is to work out where to place each claim in the essay.

Click here to proceed. An editable word processing document containing the map, box contents, essay template, and prompts will open in a new window.

Hints
- The introduction should clearly state the position you're arguing for
- The body should be split into paragraphs that each develop one main line of thought
- The conclusion should restate the position

Check your work against the model answer.

Rationale Exercises

For use in IB Programmes

Home > Set 6 > Exercise 1 > Model

The vital point is that each branch of the argument is treated in a paragraph of its own. The essay stops the reader through the argument one branch at a time, working from the top of the branch to the bottom, before signaling the shift to examining another branch.

Here's the model answer:

Mobile phones should be banned in schools. There are two main reasons supporting this position, and the main objection to it can be rebutted.

The first reason is that mobile phones are disruptive in class, since mobile phones often ring in class.

The second reason to think that mobile phones should be banned in schools is that mobile phones can be used to cheat on tests. This is because students can text message other people without being noticed.

On the other hand, a consideration against the idea that mobile phones should be banned in schools is that some people need mobile phones. This objection is not convincing, however, because mobile phone cameras are often used inappropriately.

Based on this reasoning it is clear that mobile phones should be banned in schools.
Writing a 4000 word essay is daunting for anyone!

In what is probably their first major piece of writing, IB Diploma learners are likely to require assistance in:

- Organising their ideas and research
- Identifying perspectives and evidence
- Developing a clear argumentative contention
- Providing a solid essay structure

To help with this, Austhink is developing an IB guide booklet for students, ‘Writing your Extended Essay with Rationale™’, in collaboration with Geelong Grammar.
Psychology essay example. Chosen topic: 'Models of Panic Disorder are useful for thinking about diagnosis and treatment'.

Key Terms:
- This define a key term from the research question.

Definition
- Experience unexpected panic attacks
- Experience anxiety at the possibility of future panic attacks

Occurs with or without agoraphobia

Genetic basis

Psychodynamic

Behavioural

Panic Disorder

Causes

Some causes that are commonly researched, i.e. what is thought of as causing the disorder.

Refine topic

models of panic disorder

Key Terms:
- A Model is a way of describing the mechanisms of the disorder.

Implications:
- In the essay I should point out that treatment recommended will depend upon one's view of the underlying cause.
- I should expand on this with details on Clark's theory.

Other models?

Add in further models of panic disorder.

Treatment

Medication

Therapy

Issue:
- What is the most effective treatment? Medication can be addictive, but produces more immediate results than therapy.
Sample plan for an essay on development of urban areas using London Docklands as a case study.

**Introduction**
- Clearly state my position.
- Clearly state key terms and concepts.
- Provide background information.

**Main body of essay**
- Explain the history of the Docklands.
- Your experience of living in the area.
- What improvements have you witnessed in your lifetime?

**Conclusion**
- Clearly assess the position: has the regeneration been successful?
- Use collected data, experiences and publications to reach your conclusion.

The three main towers at the Docklands.

A more developed reasoning map goes here.

- The Docklands before closure.
- What it was used for and what goods it imported and exported.
- Why the Docklands closed down.
- What did this mean for people living in the area?
- Explain the degeneration of the area: unemployment, vandalism, etc.
- Why did the Docklands need improving?
- Housing built in the Docklands overlooking an old dock.
- An example of the new housing built in the area.
5. IB Sample Maps.

Sometimes it's useful to see map examples to appreciate how argument mapping will look in your classroom.

Here are some maps to get you thinking...
Learn about grouping and category formation in Primary Years Programme.
Macbeth was evil.

Macbeth was a murderer.

because

Macbeth murdered King Duncan.

because

Macbeth's wife manipulates him into killing Duncan.

because

Publication

Macbeth murdered Banquo.

because

In the beginning of the play others praise Macbeth.

because

In the beginning of the play Macbeth doesn't want to kill anyone.

because

Even the mere thought of murdering King Duncan disturbs him.

because

It's not until the witches' put the idea in his head that he even contemplates murdering King Duncan.

because

In act 1 a soldier returned from battle says: "For brave Macbeth - well he deserves that name."

Quote

In act 1 Macbeth says: "O valiant cousin! Worthy gentleman!"

Quote

Before murdering him Macbeth says: "He's here in double trust: First as I am his kinsman and his subject, strong both against the deed: then, as his host, who should against the murderers shut the door, not bear the knife myself."

Quote

Macbeth's wife says to him: "When you durst do it, then you were a man: and, to be more than what you were, you would be so much more than man."

Quote
Mapping key chemical reactions.

Qualitative description of reactants and products in chemical reactions

Chemical reactions

- Combustion: Oxygen combines with another compound to form water and carbon dioxide
  - CH₃OH(aq) + O₂(g) → CO₂(g) + 2H₂O(l) + heat

- Corrosion: Decay of a metal that oxidises after exposure to gases or liquids
  - 4Fe(s) + 3O₂(g) → 2Fe₂O₃(s)

- Precipitation: A solid is formed out of a solution
  - AgNO₃(aq) + NaCl(aq) → AgCl(s) + NaNO₃(aq)

- Acids on metals: Acid + metal → a metal salt + hydrogen
  - 2HCl(aq) + Zn(s) → ZnCl₂(aq) + H₂(g)

- Acids on carbonates: Acid + carbonate → a salt + carbon dioxide + water
  - H₂SO₄(aq) + CaCO₃(s) → CaSO₄(s) + CO₂(g) + H₂O(l)

- Neutralisation: Acid + base → salt + water
  - HCl(aq) + NaOH(aq) → NaCl(aq) + H₂O(l)

- Decomposition: A complex molecule breaks down to make simpler ones
  - HgO(s) → Hg(l) + ½ O₂(g)
The Shroud is a fake because it was created by an artisan.

The Shroud can be explained by natural causes because the images were created by an artisan.

Some Bible scholars believe the Shroud shows Jesus because it was a miraculous image of Jesus.

It has been dated after Christ's death because it was a miraculous image of Jesus.

Tests showed that the Shroud images are not any kind of artistic production but are the result of physical/chemical changes in the linen fibers themselves.

The images on the Shroud were painted because Tests showed that the Shroud images are not any kind of artistic production but are the result of physical/chemical changes in the linen fibers themselves.

Common Belief: The claim above is widely believed.

Attempts by artists and photographers to replicate the images on the cloth have all fallen far short of imitating anything at all resembling the original.

Walter McCrone, a world renowned forensic science microscopist reported finding paint particles on the Shroud.

An artist confessed to painting the pictures to a French Bishop in 1389.

In 1988, three highly reputable radiocarbon dating laboratories conducted carbon 14 tests.

Tests on snippets of material cut from the cloth agreed that it was dated between 1260-1390.

Data: cloth dated between 1260 and 1390 AD with 99% confidence levels, and between 1000 and 1500 with 99% confidence levels.

Forensic tests found no paint particles using ultraviolet spectrometry, infrared spectrometry, x-ray fluorescence spectrometry, thermography, pyrolysis-mass-spectrometry, laser-microprobe Raman analyses, and microchemical testing.
Debating reasoning template.

A section of an Affirmative Team’s Case.

Debate issue “That....…”

Main Reason 1
- Supporting Reason because
- Supporting Reason because
- Anticipated objection because
- Rebuttal because
- Evidence because
- Example because

Main Reason 2
- Supporting Reason because
- Supporting Reason because
- Anticipated objection because
- Rebuttal because
- Evidence because
- Quote because

Opposing side’s anticipated argument
- however
- because

Rebuttal 1
- Supporting Reason however
- Evidence however
- Common Belief
  - The claim above is widely believed.
- Evidence

Rebuttal 2
- Supporting Reason because
- Evidence because
- Personal Experience because
- Evidence