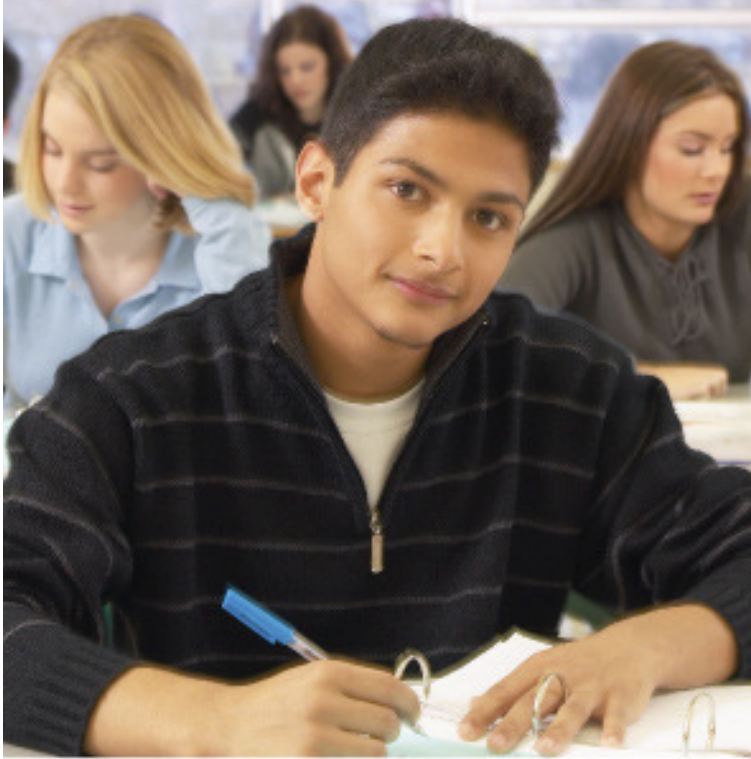


Secondary Educators' Supplement



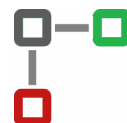
Draw The Right Conclusion!

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Audio of Flight Lieutenant Raymond 'Ray' Graetz located on the Australians at War website; http://www.australiansatwar.gov.au/throughmyeyes/w2_akh.asp
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Written by Fiona Patterson
with contributions from Marc Fauvrelle and Sam Szoke-Burke.

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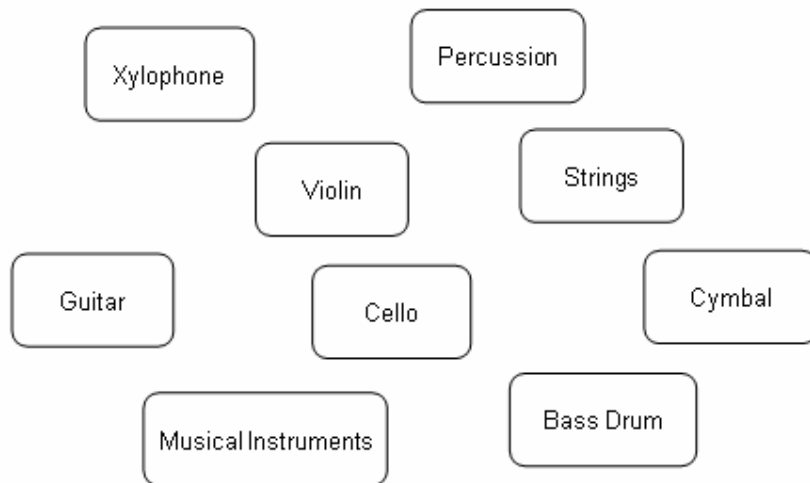
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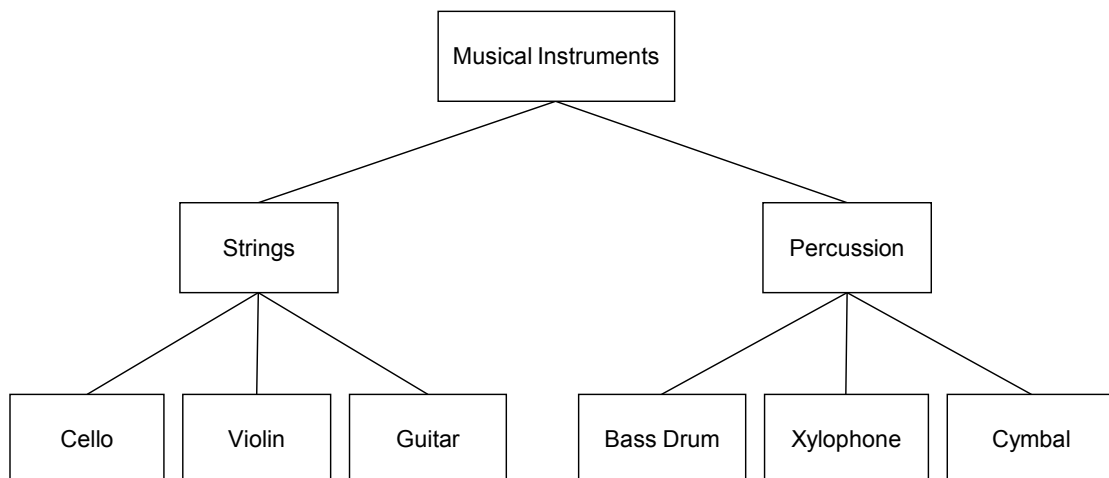
1. Rationale Activities

1.1 Thought Pyramids

Thought pyramids is a fun task to introduce and scaffold grouping principles. The task focuses upon grouping items into categories with a similar theme. These items could be objects, thoughts or claims.



A structure is developed which introduces layers or levels of abstraction or generalisation, akin to a pyramid.



Educational Goals

1. Identify similarities and differences in a list of items
2. Determine a concept which links similar items
3. Create a structure which illustrates levels of abstract thought.
4. Understand the relationship between physical objects and broader mental concepts that categorise these objects.
5. Provide the structure and conceptual understanding of levels of thought, as required for argument mapping.

Before the Class

Organise ICT facilities and VCR/DVD. The task can be undertaken as a group with the teacher using one computer projected for class viewing and then developed for students to create their own lists and pyramid maps.

1. This activity can be directed to a particular topic though this is not a necessity. Locate an appropriate video (which corresponds with your curriculum) to be played for approximately 5 minutes.

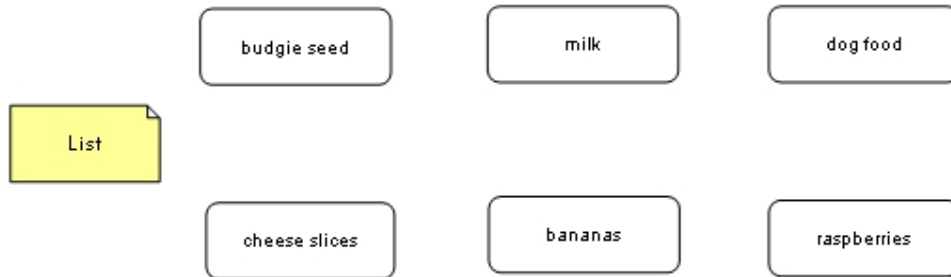
In the Classroom

There are a number of activities that can utilize thought pyramids;

- a. shopping list activity
- b. video/ audio activity

A. Shopping List Activity

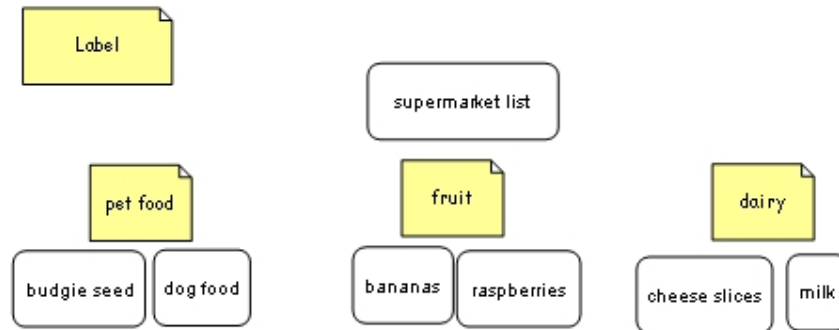
1. Ask the students to create a shopping list of x number of items.



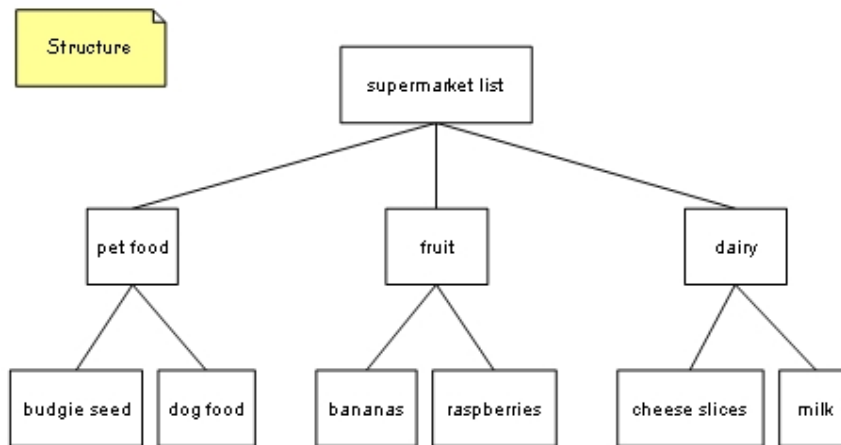
2. Modeling the process for the students, gather x number of responses on the board. Asking questions of the students, group these items.



3. Ask the students how, or by what criteria did they formulate these groups. Create labels to show this process.



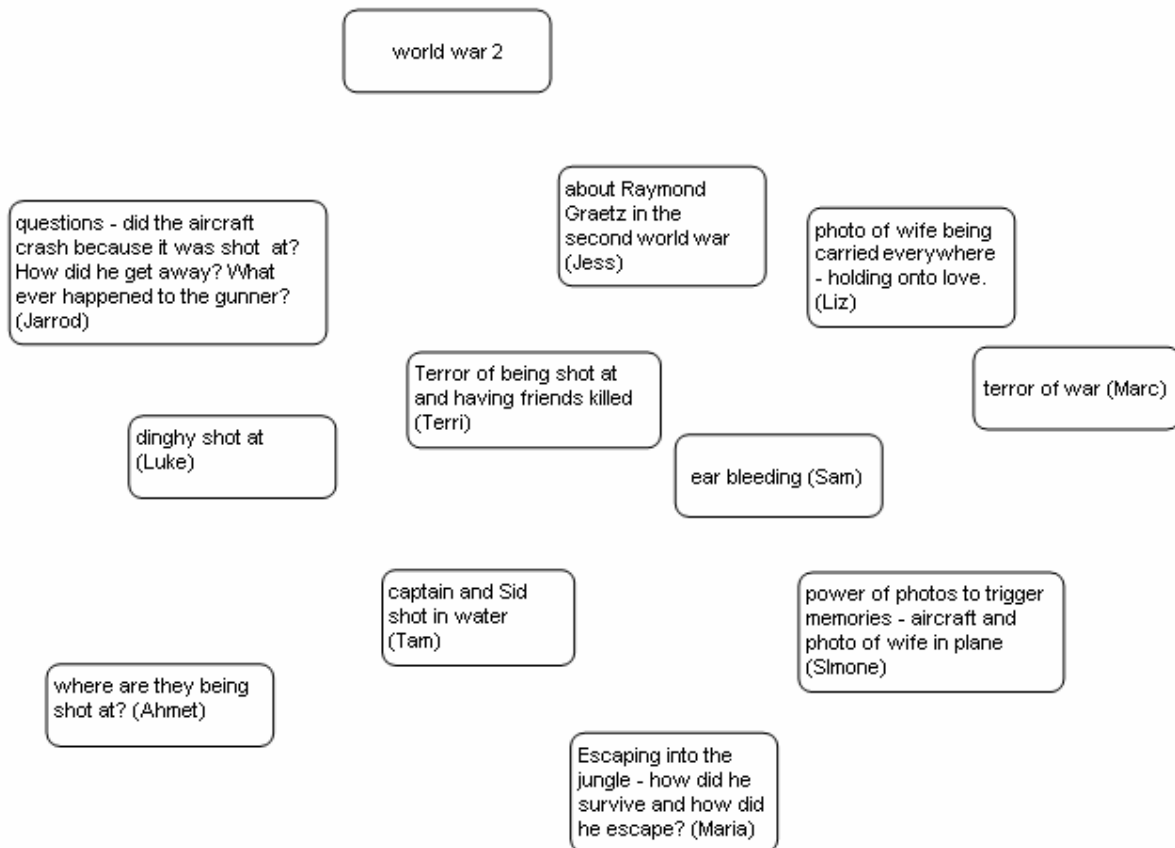
4. Model the process of structuring the items and concepts into a hierarchy.



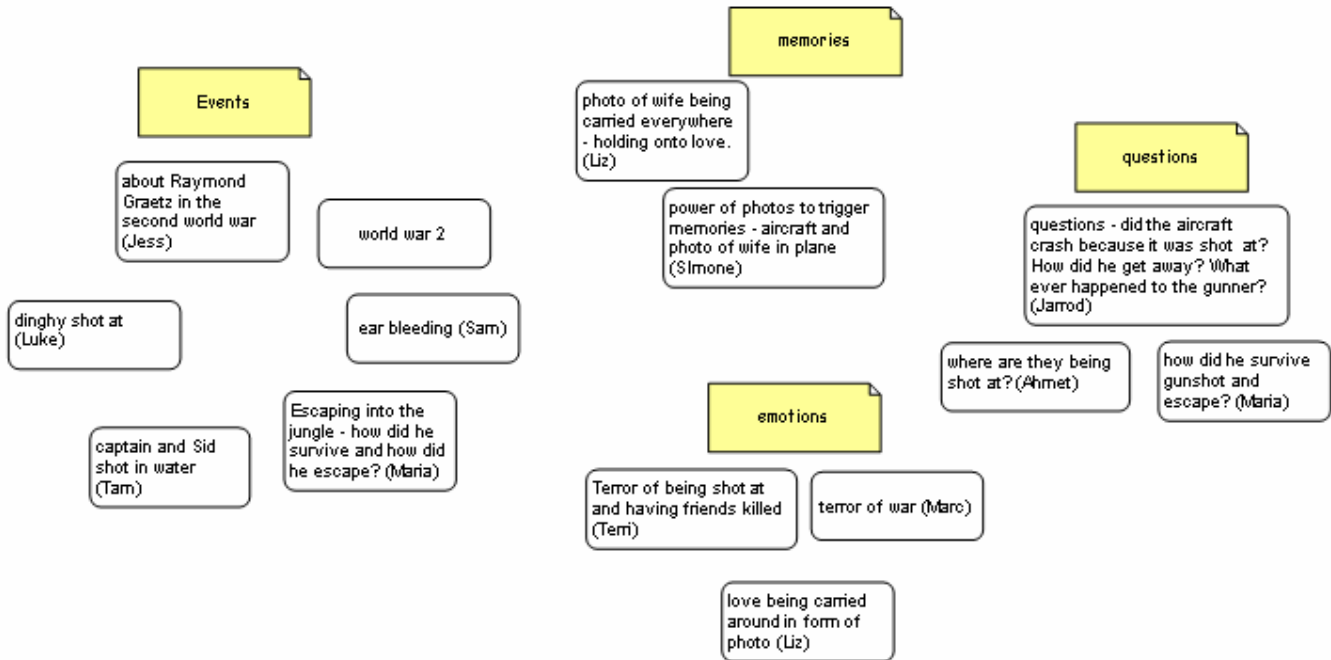
B. Video/ Audio Activity

Watch a video or audio for approximately five minutes, instructing the students to identify x number of things. Such things may be unlimited in scope – they may be events, objects, emotions that the student’s experienced or thoughts and attitudes which they noticed. (This example uses the audio of Flight Lieutenant Raymond 'Ray' Graetz located on the *Australians at War* website; http://www.australiansatwar.gov.au/throughmyeyes/w2_akh.asp).

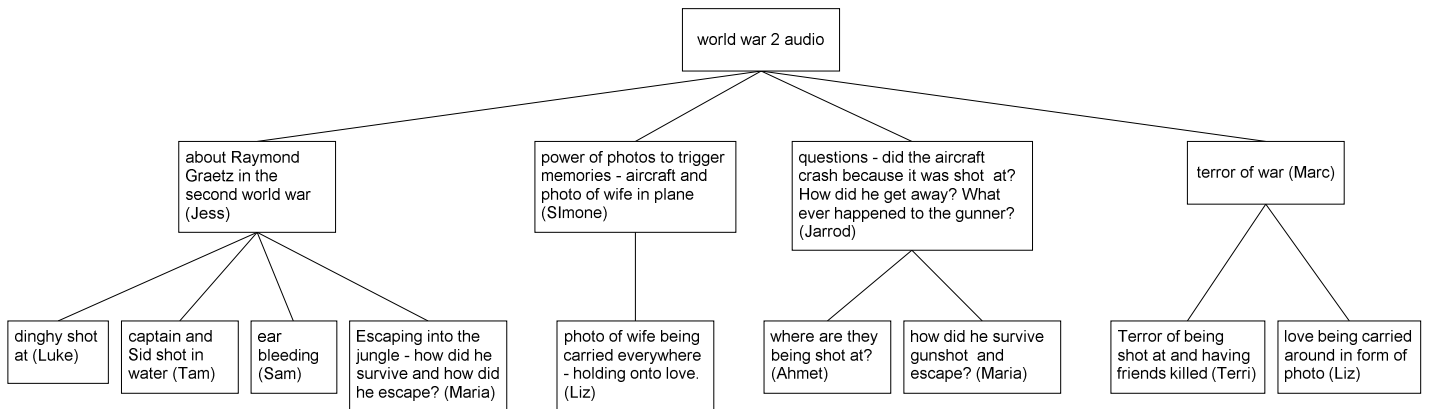
1. Instruct the students to list their items. Go around the class and ask individuals to provide one item they noticed. Make a list of all the items. This can be done using a **Grouping Map** in Rationale or, if there is no projector for a central board a handwritten list on the board will suffice.



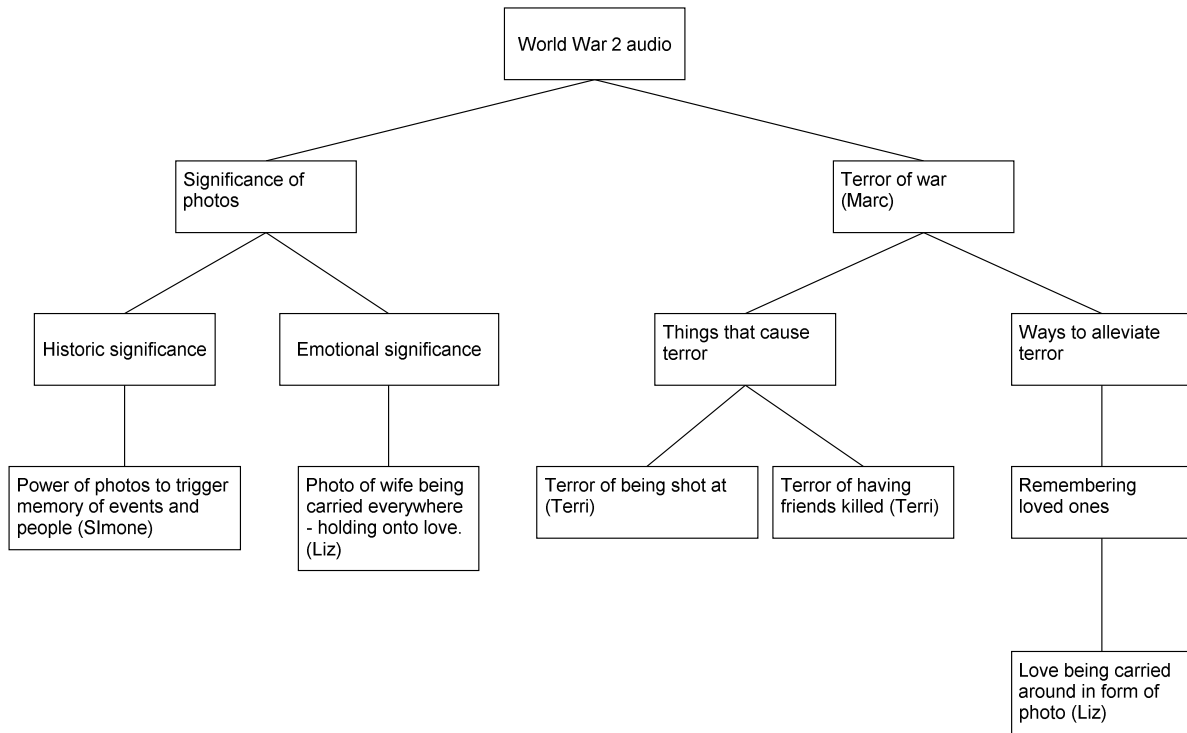
2. Ask the students how we may group these individual items. If using Rationale group the claims together and create a sticky note with the category label.



3. Create a grouping map using central identified categories.



4. Ask the students whether we can create a further level of abstraction, that is, another level of ideas. This may require some clarification of the observations. (**Software Tip:** when you are wanting to insert a layer sandwiched between other item boxes, you can use the “push” key on the home page). Full map in examples section.



5. Discuss how the items on the lower level are examples of what is above. Thus, the lower levels are smaller categories or objects whereas there are broader categories as we move towards the top. This is akin to looking through binoculars or through a microscope – you can zoom in and see things in more detail – so the lower levels are more detailed examples of what is on the top which is the whole view.
6. Instruct the students to create a map of their list of x items and see if they can formulate three to four levels to reveal category levels.
7. Instruct students to look at other students' work and ask questions of each other.
8. Resume as a class and discuss what has been observed. For instance, the similarities and differences of the maps and how a map assists us to understand connections or relationships between single items and general concepts. It also aids our ability to “unpack” an idea so that we may develop it further. This is a particularly useful skill for essay writing.

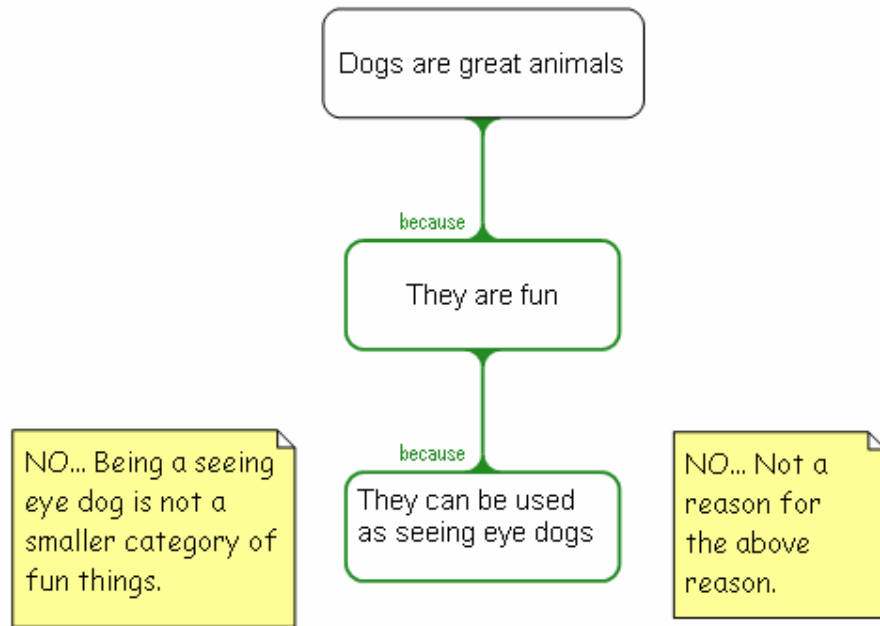
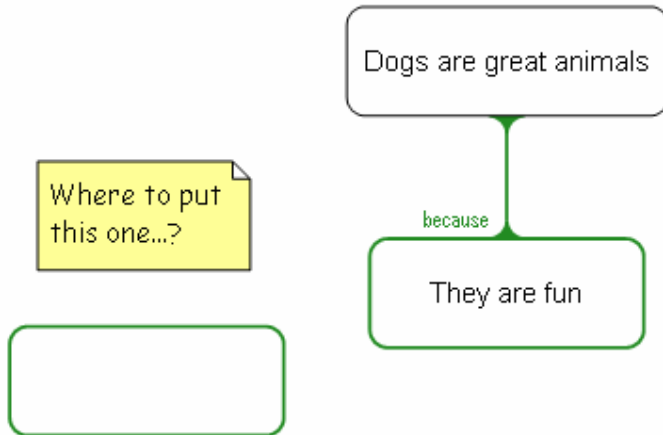
Fiona's Experience

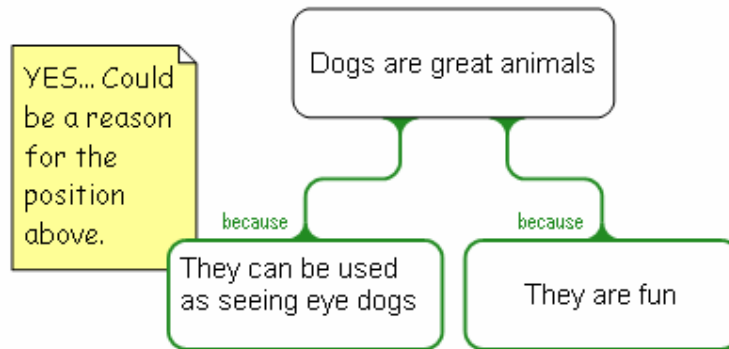
Thought pyramids are a great way to scaffold understanding of categories, relationships and concepts. When asked what a group of grade 3 students thought about the pyramid structure to group their extended shopping lists, one student said that it helps you group things – properly! I think this is central to category principles – we can often create general groups but finding the layers or levels of categorization within the broader group is important for understanding relationships and connections between ideas, objects or thoughts. Students learn that they can do this by forming a pyramid structure where each category can be refined or given more detailed “fleshing out” as they build down. They also develop the ability to recognise that different kinds of things need separate groups (such as objects and feelings) and that groups need to be mutually exclusive and collectively exhaustive (which is to say, distinct and cover all the aspects of a given item). The fact that a grade 3 student made this comment is no reason not to undertake grouping activities, in fact I think they are essential for all learners. It is a skill which we are constantly developing with respect to the complexity of concepts we have grasped and reveals the depths of our understanding.

The shopping list activity has been used for secondary students as a precursor to the video activity. The shopping list is a great way to visualize thinking – because it relates directly to our experience of a supermarket – we know that we find our brand of milk in the milk fridge which we find in the dairy aisle. Understanding and unpacking this relationship between different objects is an important tool to understand the role of language for category and concept formation. The video activity is terrific because people see different things and it is interesting and a great learning experience to gather different objects of perception and then ascertain how to group them – properly! We can then use this hierarchical structure to fill in other things that belong in these groups. This is a very useful exercise to consider other perspectives and to locate what might be missing in a given group or to “flesh out” detail required for examination of an issue or for an essay.

Usefulness of Thought Pyramids for Reasoning

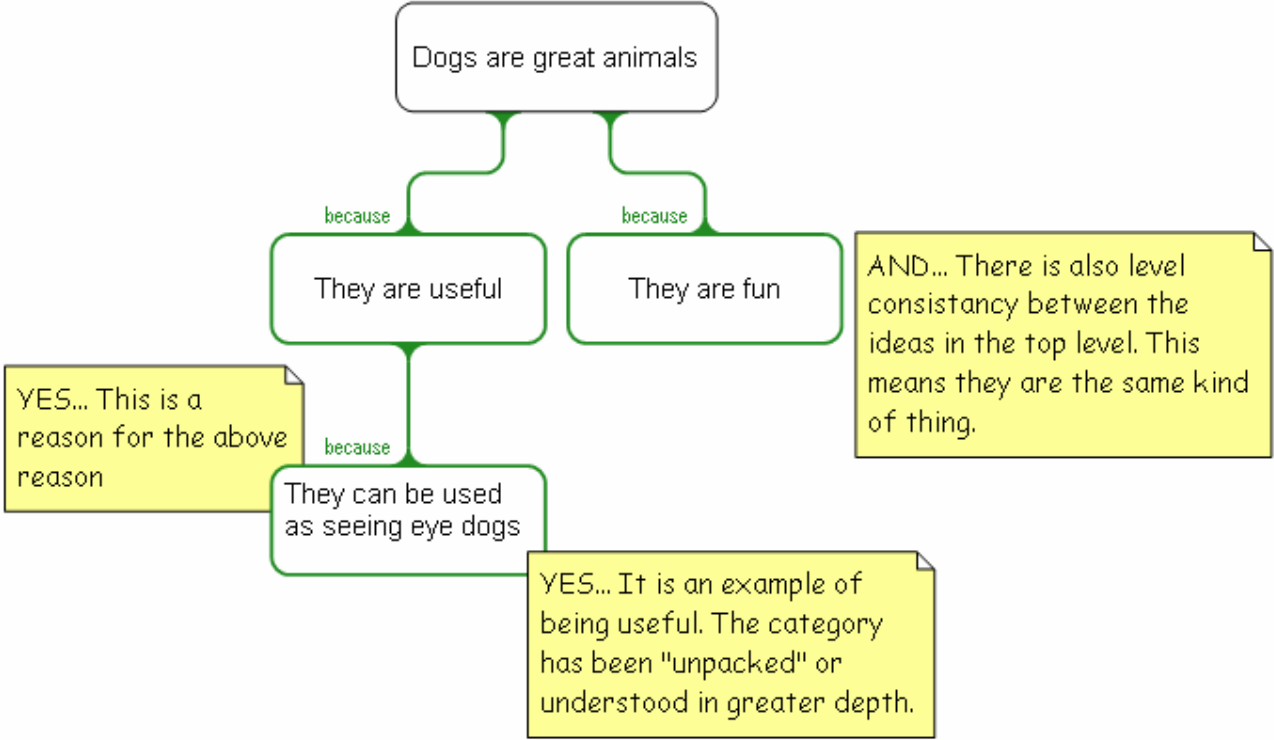
Thought pyramids can be as simple or as complex to meet the needs of your students. In either case students are developing their ability to create hierarchies of objects and/or concepts while also learning some fundamental rules for reasoning, such as where a reason belongs – to the position box or to another primary reason. For example:





YES... Could be a reason for the position above.

BUT... There is a better place in the pyramid structure, because being a seeing eye dog is an example of a larger category - such as being useful...



YES... This is a reason for the above reason

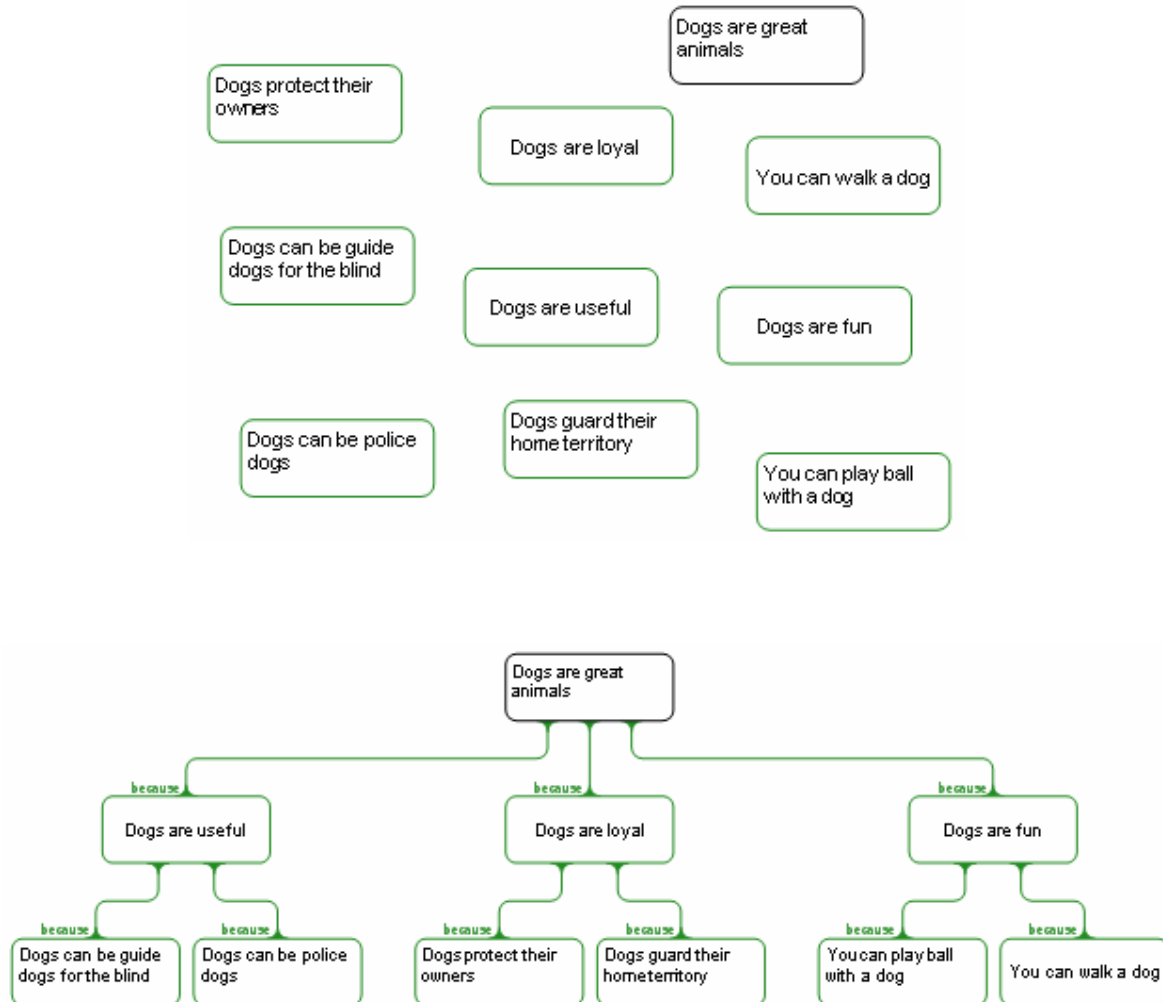
AND... There is also level consistency between the ideas in the top level. This means they are the same kind of thing.

YES... It is an example of being useful. The category has been "unpacked" or understood in greater depth.

As this example shows, an error could be made in the reasoning if sound category and structuring principles are not understood. Moreover, this process is a means for students to understand how to unpack or show a developed argument – by systematically examining issues that start from a broad concept to more fine grained concepts or examples.

1.2 Jigsaw

Students like a challenge and a jigsaw is just that! The jigsaw activity requires students to treat map boxes like jigsaw pieces. A grouping or argument map is broken into separate claim boxes and the student must attempt to restructure the argument.



Educational Goals

1. Introduce the components and structure of an argument map (conclusion, reasons, objections, supporting reasons, rebuttals) or practice grouping map structure.
2. Model a good argument map (structure, refined claims and hierarchy principles).
3. Apply principles of argument mapping (structure formation, grouping, hierarchy and pyramid principles).

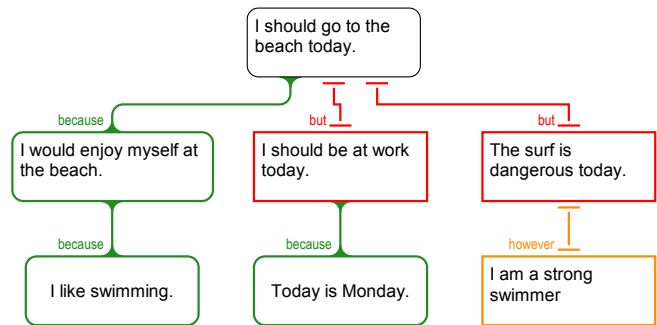
4. Review or acquire new knowledge content.
5. Group communication and problem solving.

Before the Class

1. Open or create a jigsaw file in Rationale. The Austhink website provides some ready made files which you can download. Alternatively you can easily create your own by creating a grouping or reasoning map and moving the pieces around the workspace. Save the file in a network drive that your students can access.



1. create or open an example



2. drag the boxes so that the connecting lines disappear



3. move the pieces around the workspace

2. If you cannot use computers for this lesson, you can also provide a paper copy of the jigsaw map. Students can spend a couple of minutes cutting out the pieces and jigsaw them on their desks.
3. To make your jigsaw more challenging you can increase the number of boxes or provide a couple of blank boxes which must be filled in. This will really test your students' ability to think about categories and reasons. For example,



In the Classroom

1. Provide instructions for the jigsaw challenge – to open the Rationale file else collect a sheet of paper which will require the boxes be cut out. This may be completed individually, in pairs or in small groups.
2. Instruct the students to commence (perhaps with a time limit). Monitor and guide them as required.
3. When complete, instruct the students to look at other jigsaws and see if there are differences.
4. Form a class group and discuss the process. Modeling of the correct jigsaw format may be required.
5. As an extended activity, you could instruct your students to create a grouping or reasoning map and then create their own jigsaw pieces which another group can piece together.

Fiona's Experience

Students are immediately engaged in this activity because it is a readily identifiable and fun format. It can also be achieved in paper or Rationale format to suit your classroom resources.

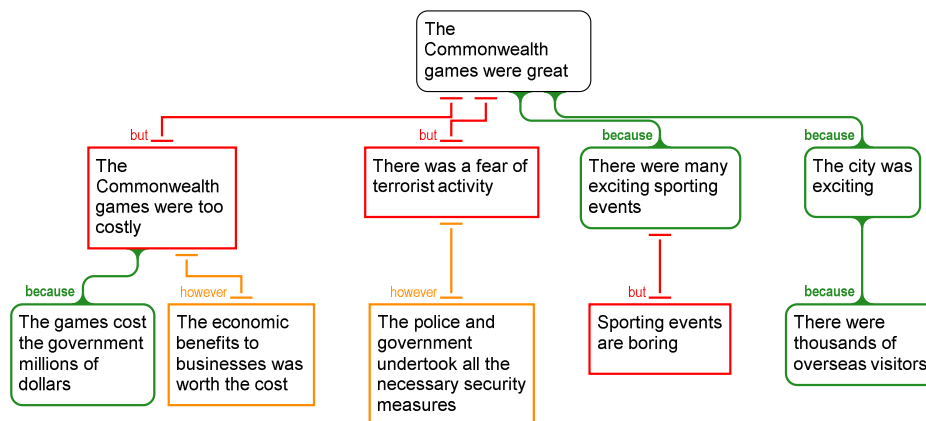
For reasoning maps, locating the conclusion is easy once they understand that conclusions are white. Grouping the claims is intuitively undertaken once students have received adequate scaffolding as to grouping principles. The difficult element of this activity is for students to establish the main, top level reasons and objections. They have identified the groups but they are not sure of the internal

structure of the group. This is a typical problem in reasoning and is often evident to teachers in inadequately structured essays. The ways to scaffold this process at this early stage are:

1. Remind them of the pyramid principle – the more abstract, broader concept is at the top, the more particular/ detailed example is at the bottom of the tree.
2. Ask the student if one claim supports another, that is, would one claim be a reason for believing the other claim is true (or if an objection, to believe that the claim would be false)?
3. Provide a few hints as to the structure, e.g. the number of objections or the number of levels of reasoning.

1.3 Rationale Argument Chess

Argument Chess is a strategy game where an argument map is created by two different teams. Teams of one or more students spend some time devising the affirmative or negative case for a given proposition. They create a central argument by adding one reason or objection at a time. The aim is to create a strong, well supported argument by selecting the best reasons or objections while providing objections or rebuttals to the opposing side's argument so to diminish the strength of their case.



Educational Goals

1. Understanding of supporting and opposing cases and the role of each with respect to the conclusion.
2. Consideration and selection of good reasons or objections with supporting reasons.
3. Strategic selection of the best reasons or objections to strengthen a case while effectively refuting the opposing side's case.
4. Interpersonal decision making and team building
5. Evaluation modeling.

Before the Class

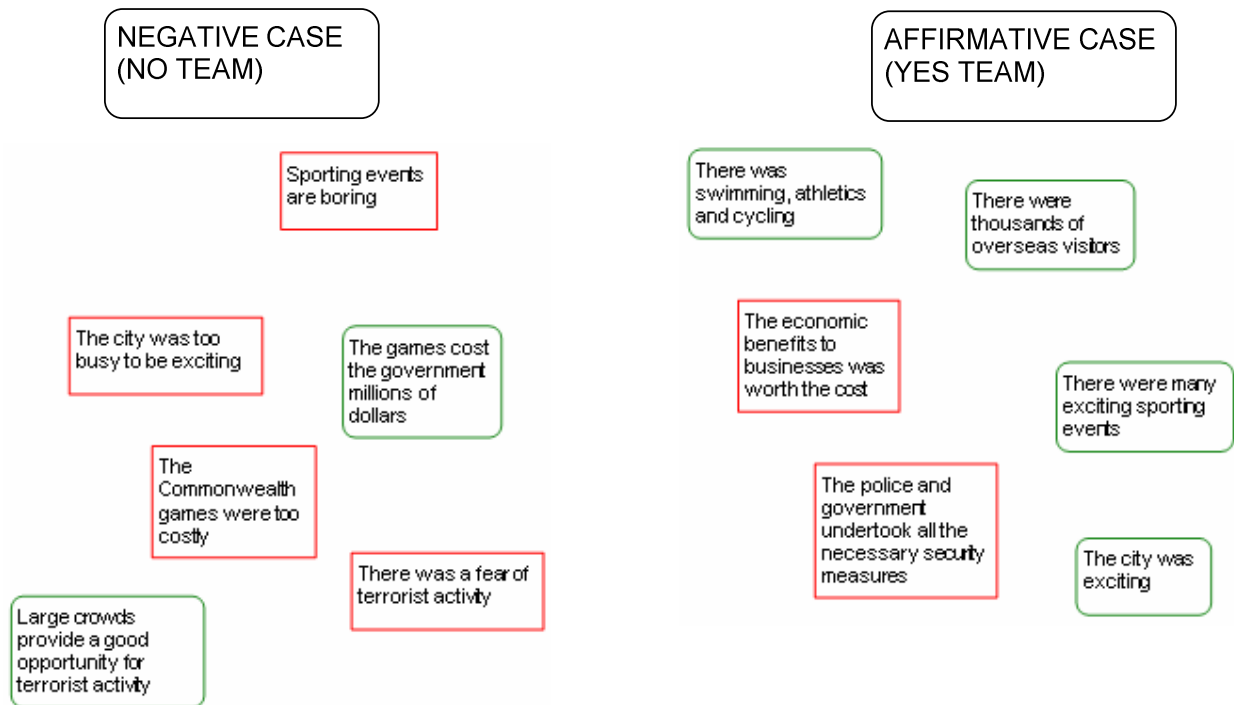
1. Determine how many "chessboards" or argument maps you will need. The game works well with a small class (up to 12) using one board (projected onto the wall or whiteboard). If you have a full size class, you may be best to use 2 - 4 computer terminals.
2. Organise a projector or ICT classroom for the Rationale "chess board."
3. Select an appropriate conclusion or choice of conclusions that will provide appropriate consideration of a topic. For example:
 - ❖ The real Shakespeare was Sir Henry Neville
 - ❖ People vote according to their hip pocket
 - ❖ The Provocation defence should have been removed
 - ❖ David Malouf is the greatest Australian author

In the Classroom

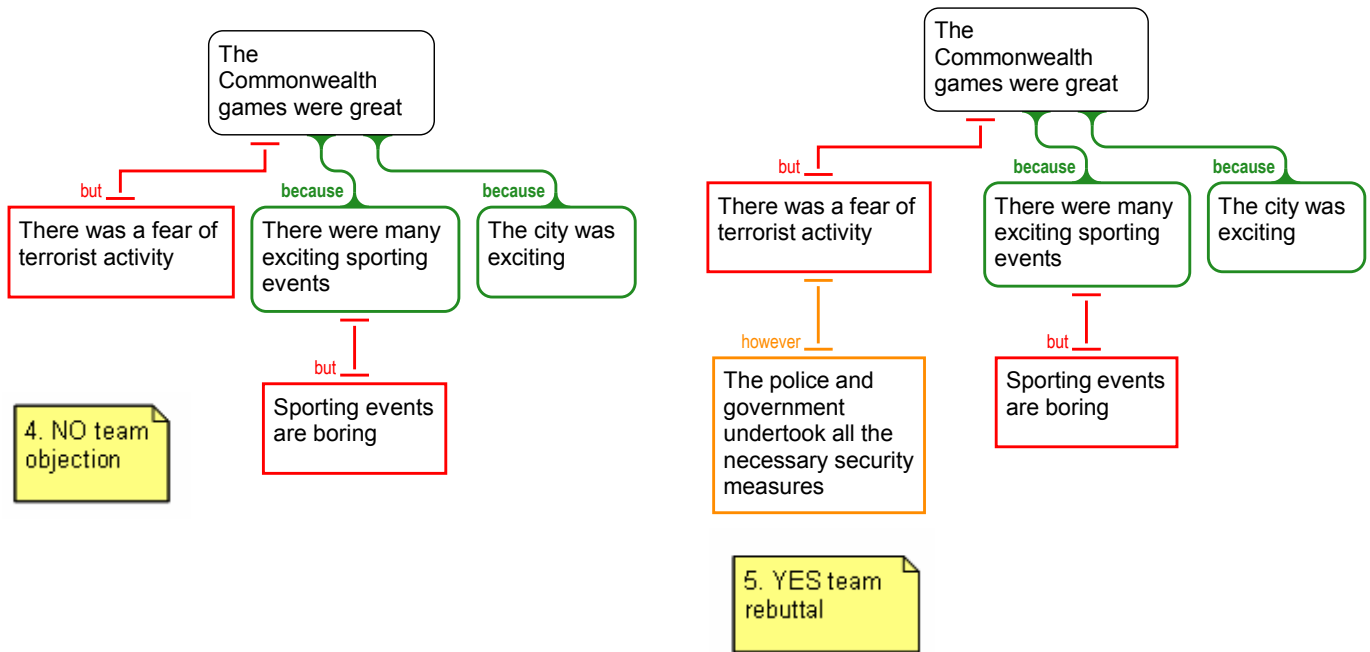
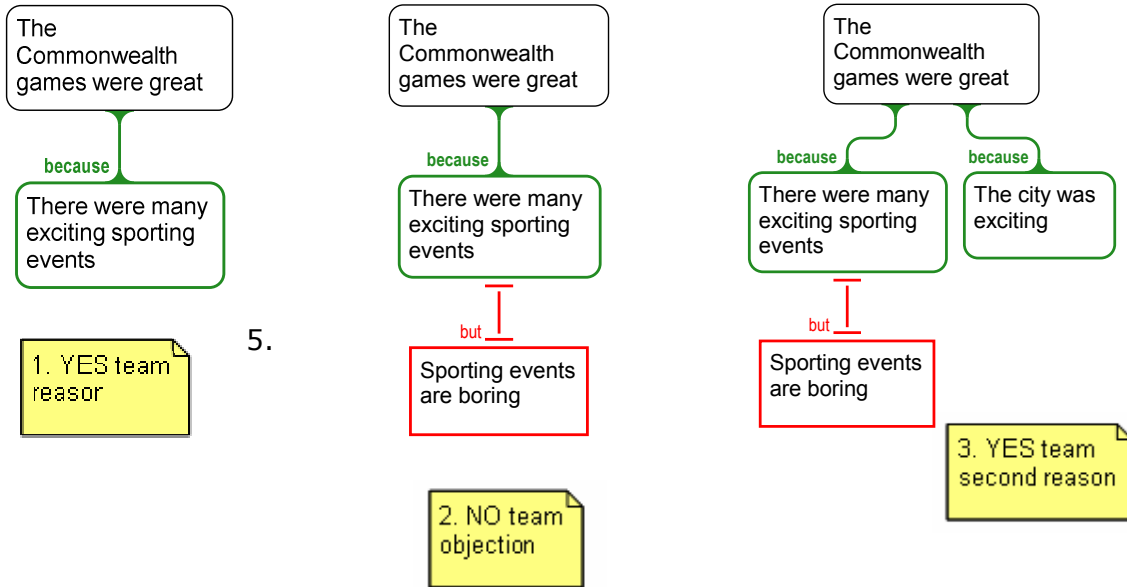
1. Teams: Form two teams (given one game will be played)
2. Cases: Ascertain which team will support the conclusion (i.e. provide the supporting case) and which will oppose it (i.e. provide the opposing case).

The Commonwealth Games was great

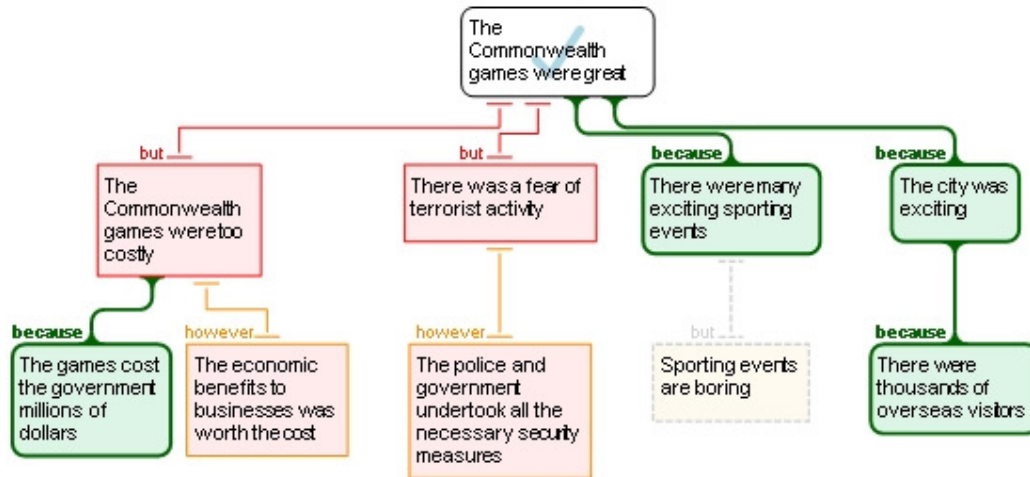
3. Prepare: Teams are given ten minutes to prepare their cases by mapping their ideas on an argument map and locating information to enhance their evidence. Students should also consider how they will respond to the other teams' reasons and/or objections. The images below provide an example of the preparation, however the reasons provided once the game has begun is not limited to these. They are merely a guide and establishing key reasons.



4. Play! A player from each team makes one move at a time, that is, adds one reason or objection to the conclusion. Remind students to select their best reasons to support or refute the conclusion while also endeavoring to diminish the effectiveness of the other team's reasons by providing objections and rebuttals.



- Evaluate: Ten minutes before the end of class, advise that you will now evaluate the claims to ascertain who provided the best case. Select evaluation and determine how good the reasons and objections are as a class. This provides guided instruction and modeling of the process of judging the truth of claims and the support they provide to another reason and/or the conclusion. (Where you have more than one chess board operating you can go around the class and evaluate each group one at a time).



- Declare: Judge the best case/s and applaud the class for their reasoning skill.

Fiona's experience

Rationale Argument Chess is a popular and fun peer learning activity. If an engaging topic is chosen, or one that has some amusement value (such as "Dogs are better than cats") then students become highly motivated and enjoy the challenge of the activity. From a teacher's perspective, the development of skills and review of content knowledge is the success of argument chess. The students must compile reasons for a given case while structuring them in a coherent and logical manner. Moreover, they must consider what the main reasons their opponents will use, and think about how they may object or rebut these reasons/objections. Due to the limited time and therefore moves that are available to be made, the students must also learn to be selective and how to determine when they need to provide further support or when they have sufficiently objected. This skill of careful selection is vital - we do not want any reason and number of reasons - we want the best reasons, which is to say, the ones that do the job we want them to do as efficiently and effectively as possible.

This teaches students to be selective in the reasons they are choosing and consider why they are choosing them (what the role of that claim is), a skill which is transferred to effective essay writing. The activity is effective in both introducing the reasoning process and in the development of skills. What is required of the teacher in both cases is the guidance as to when a reason is not supporting a further claim and at the conclusion of the game, detailing a reason or objection, which, had it been included, may have impacted upon a particular line of reasoning and/or the conclusion.

The primary caution for this activity is that each individual has the opportunity to "have their say" and not left out of the team's decision making process. It is therefore useful to insist that each team member must make a move on the joint chess board, while instructing the students to map all their ideas from everybody when preparing their cases and then select the best ones when determining what reasons or objections should be played.

1.4 Rationale Prose Mapping

Prose Mapping is a peer learning activity to test communication in prose and scaffold essay writing skills. Teams of one or more students create an argument with a limited number of claim boxes then transpose the map into prose. Another team attempts to reconstruct the original argument map from the given prose, thus testing the accuracy and clarity of the prose. The aim is to communicate effectively such that meaning in prose is effectively transmitted.

Educational Goals

1. Construction of an argument map and understanding of the relationship between claims.
2. Clear communication in prose of claims and their structure within an argument.
3. Interpretation and reconstruction of an argument presented in prose
4. Team work and peer learning.

Before the Class

1. Organise ICT facilities to enable small groups of students to work together.

In the Classroom

This activity can be undertaken in one period, else a double or two consecutive periods. The latter is preferable, but dependent on the ability and working pace of your class. If you have more time, then you may have the number of claim boxes increased and the topic to be a genuine one requiring some thought and research.

Steps to undertake the activity;

1. Teams

Form teams - Teams will have two groups working separately but swapping prose with each other. So if there are 24 in the class form three Teams;

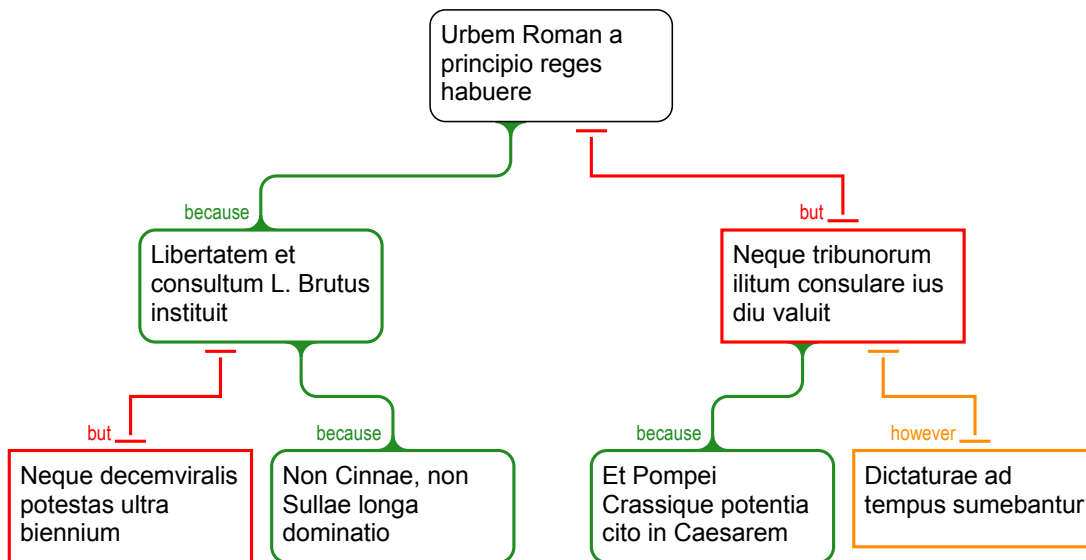
Team 1: Group A (4 people), Group B (4 people)

Team 2: Group C (4 people), Group D (4 people)

Team 3: Group E (4 people), Group F (4 people)

2. Argument Maps

Instruct the groups to construct an argument map of a limited number of claim boxes (10 is a good number for a single period). The students are advised to include at least one reason and objection, at least one supporting reason and rebuttal and one unfolded claim (where they have utilised the argument analysis mode in Rationale). Depending on the teacher's purposes, the argument may be relevant to a topic, be nonsensical (eg. all claims are proverbs) or be written in another language. They are given a limited time frame to construct this map (say 10 minutes) and reminded to save their work.



This example is a nonsensical one in Latin. The terrific thing about it is that it shows how we can reconstruct an argument in prose, despite not understanding the content. This would of course have consequences for evaluation – nonetheless it is an interesting and fun way to learn about structuring arguments.

3. Prose

When an argument map is complete the groups write their prose to communicate their argument - they may use a word processor or handwrite for this purpose. Allow a time limit, such as 15 minutes.

Despite the substantial works by Tacitus, his **contention may be summed up** as **Urbem Roman a principio reges habuere**. One would think he has many reasons for proclaiming such a controversial position and yet his prolific considerations may be reduced to **one main reason and one main objection**.

The reason is that **Libertatem et consultum L. Brutus instituit**. Of course he believes this **based on the supporting reason that** **Non Cinnae, non Sullae longa dominatio**. What is curious is that he leaves this latter reason unchallenged, yet **identifies the objection to the primary reason that** **Neque decemviralis potestas ultra biennium**.

We find a similar position in the **primary objection**, for as Tacitus discusses in his *Historico Liberatum*, **Neque tribunorum ilitum consulare ius diu valuit**. This objection is **supported by the reason that** **Et Pompei Crassique potentia cito in Caesarem**. Again, he offers no supporting evidence to confirm this reason, yet offers the insightful **rebuttal that** **Dictaturae ad tempus sumebantur**. Clearly this overcomes the fundamental objection and so **we may conclude**, as did this great man, that **Urbem Roman a principio reges habuere**.

*This example shows the argument map transformed into prose. The blue highlighting represents the **position** (or contention), the green for **reasons** and the red for the **objections**. The **indicator words** (which indicate the positions, reasons and objections) are in bold.*

4. Swap and reconstruct

Each group swaps their prose (not their map) with their other Team Members (eg, For Team 1, Group A swaps with Group B). The task for the groups is to read and reconstruct the prose into an argument map. Allow 10-15 minutes for this task.

5. Assess

When the reconstructed map is complete, the Teams (with the aid of the teacher) compare the original and the reconstructed map to see how clearly the latter mirrors the original. Where an error is apparent, look back at the prose and identify why this is the case. Perhaps the prose did not clarify the number of primary reasons at the outset, or perhaps a co-premise was mistaken for a supporting reason (for the Analysis mode). Talk to the teams about how the prose may have better communicated a claim or its position within the argument structure, or consider what could be written to reduce a possible misinterpretation of the prose. It may be useful to have your students highlight key terms and phrases in order to identify the position, reasons, objections together with understanding the structure and use of indicator words and the role they play in clearly communicating argument parts. If you run out of time, leave this section for the next period where you can spend some time analysing what went right and what went wrong. What will often become apparent is that the students quickly identify what was wrong with the prose and why they misunderstood or miscommunicated their intended argument. By experiencing this problem of

meaning and written prose between peers, the learning experience is very powerful.

6. Declare

The winning team (if you wish to have one) is the one who made the least errors in the reconstruction of the argument maps.

Fiona's Experience

Students will notice when an argument communicated by someone else is inadequate in conveying meaning, yet are frequently unaware of the extent to which their own communication is ineffectual. This activity is the perfect example of learning to communicate effectively by doing it! Students firstly learn how to structure their prose, secondly, communicate an argument clearly by providing signposts and indicator words and thirdly, be succinct, precise and unambiguous with language. What is impressive with this exercise is that students often think they have provided clear prose, yet find from their own attempts to reconstruct their peer's prose that this is not so easy! Meanwhile they have their prose tested by peers, and their classmates will let them know that something was unclear and why it was difficult to interpret.

The value of such peer learning and testing cannot be underestimated with respect to the power upon students learning. Moreover, students learn why communication is difficult, the mistakes people make and most importantly appropriate remedies to these errors. Such learning is an excellent means of scaffolding essay writing with respect to structuring an essay, providing signposts to indicate central claims, avoiding irrelevant information or "rambling" and using language clearly and with precision.

1.5 Constructing others' arguments.

Quite often the challenge is not in creating an argument but to understand someone else's argument. This activity involves looking at a small piece of prose or text and determining the argument. This involves identifying key claims and then reconstructing the argument in a reasoning or analysis map. This is an excellent way to demonstrate the power of language and the difficulty of communicating reasoning (and unfortunately, how badly most people do it!). It is also an excellent task to illustrate the role of indicator words – those words that indicate whether a claim is a position or conclusion (e.g. hence, thus, therefore) and those that indicator a reason or objection (e.g. since, because, but, however). (You will notice that Rationale has general indicator words in reasoning maps to assist identifying and scaffolding of this process).

To construct another argument look at a simple piece of prose from your curriculum or letters to the editor in a newspaper and ask the students to see if they can formulate the argument. Here are a few examples:

ABC Sport

ABC News ought to cover sport. Whether you like it or not, it's an Australian obsession.

- Tim Lane, The Age 14 Feb 04.



Art of Agriculture

"Agriculture is an art rather than a science. Agriculture, therefore, is a matter of principles and experience rather than inflexible rules and theories."

- found on the internet.

Agriculture is a matter of principles and experience rather than inflexible rules and theories.

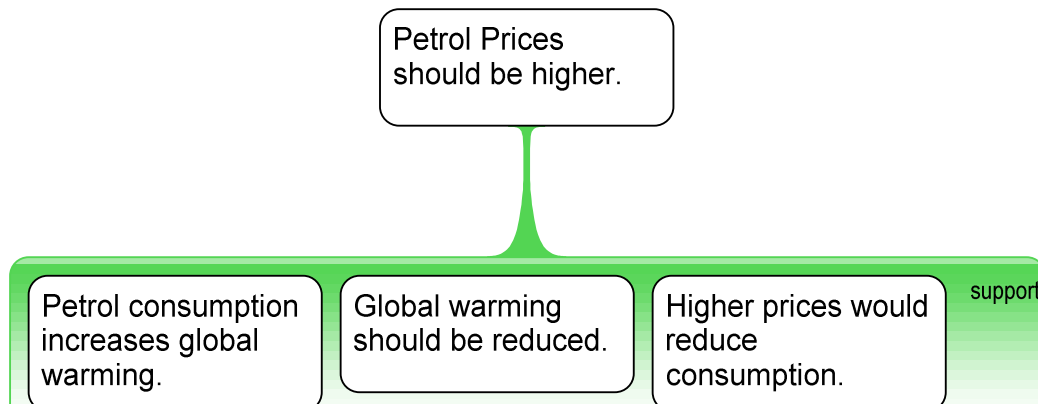
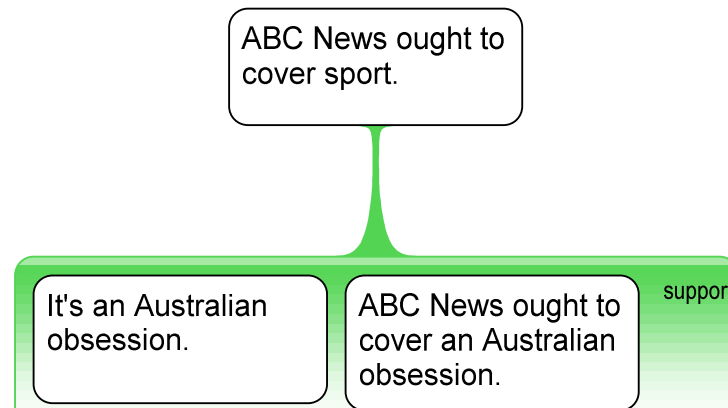
because

Agriculture is an art rather than a science.

1.6 Identifying the hidden premise

This activity is for advanced critical thinkers, though you can start your students progressing towards this task by asking them to locate assumptions. Sometimes what is crucial in an argument and its evaluation is not what is stated but what is left unstated or hidden! Assumptions are powerful because they are not always obvious, yet form part of a reason or objection. In the previous example on ABC News and sport, there is a hidden premise, or part of the reason, which is that they should cover the sport because they should cover those things which constitute an Australian obsession.

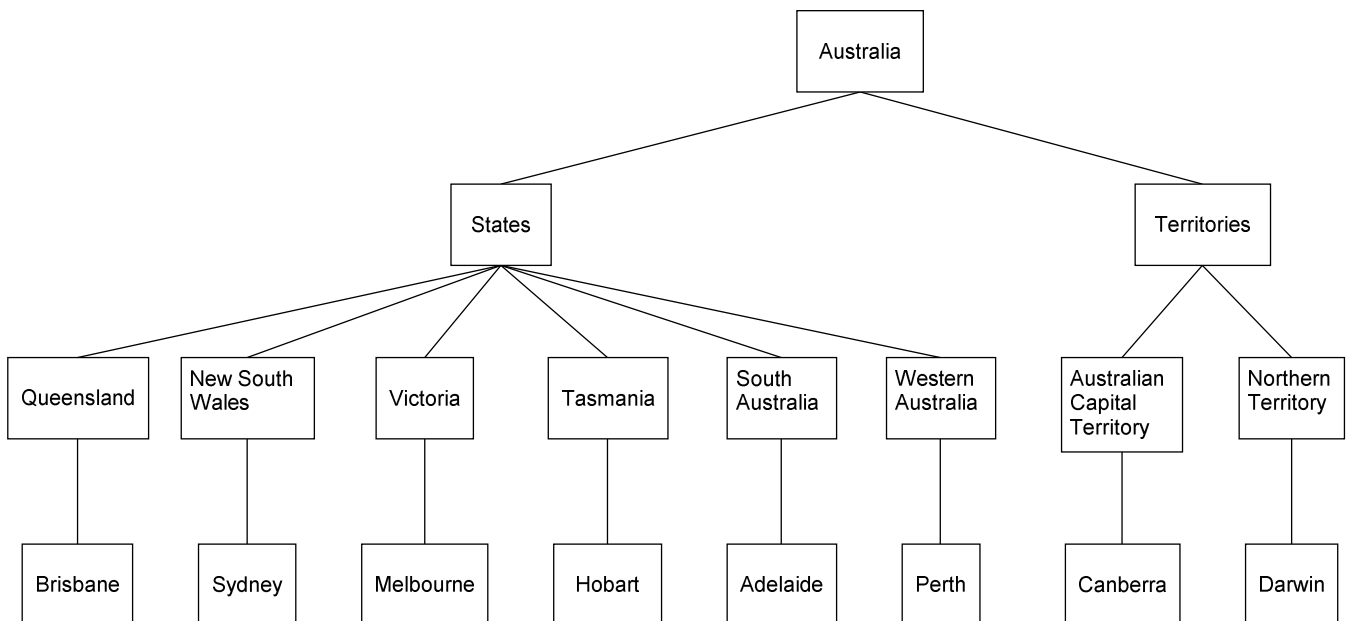
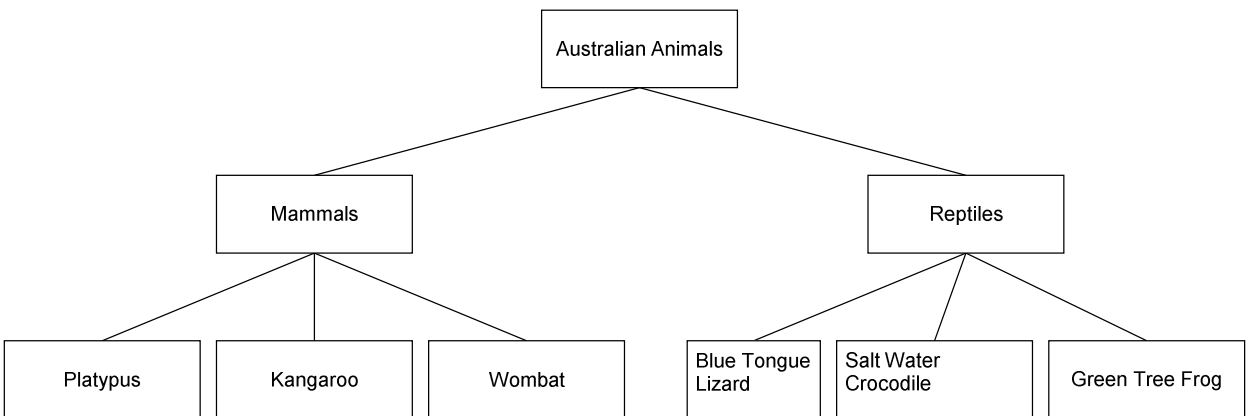
There are various rules to assist us finding hidden premises and these are available as on line lessons available on the austhink.com website.

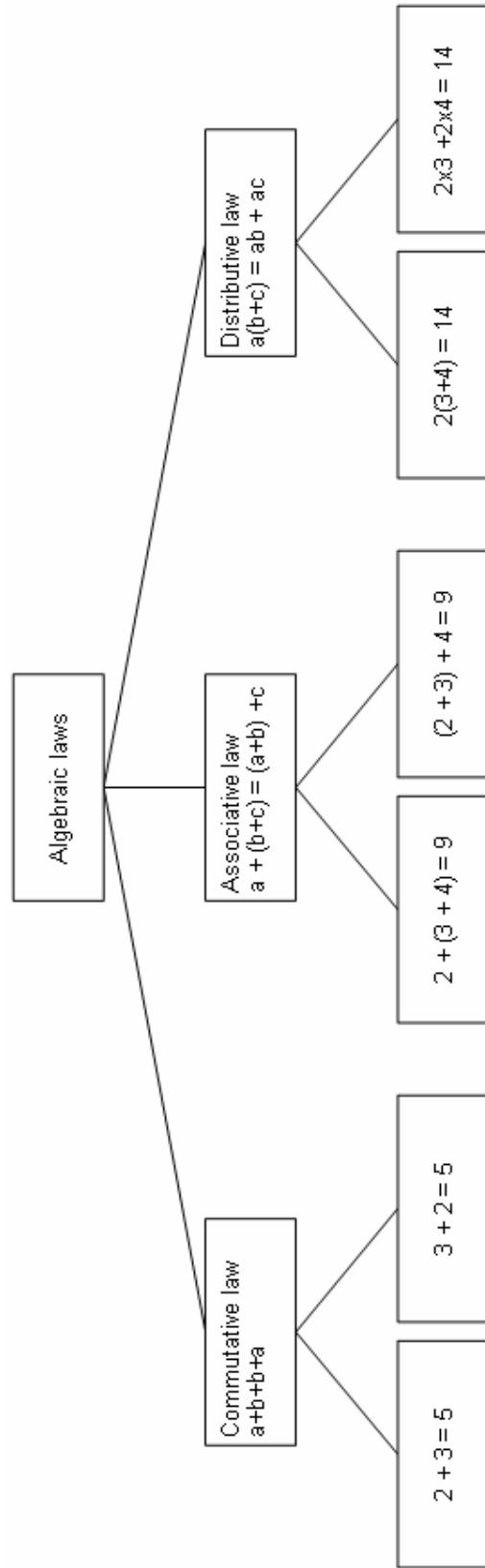


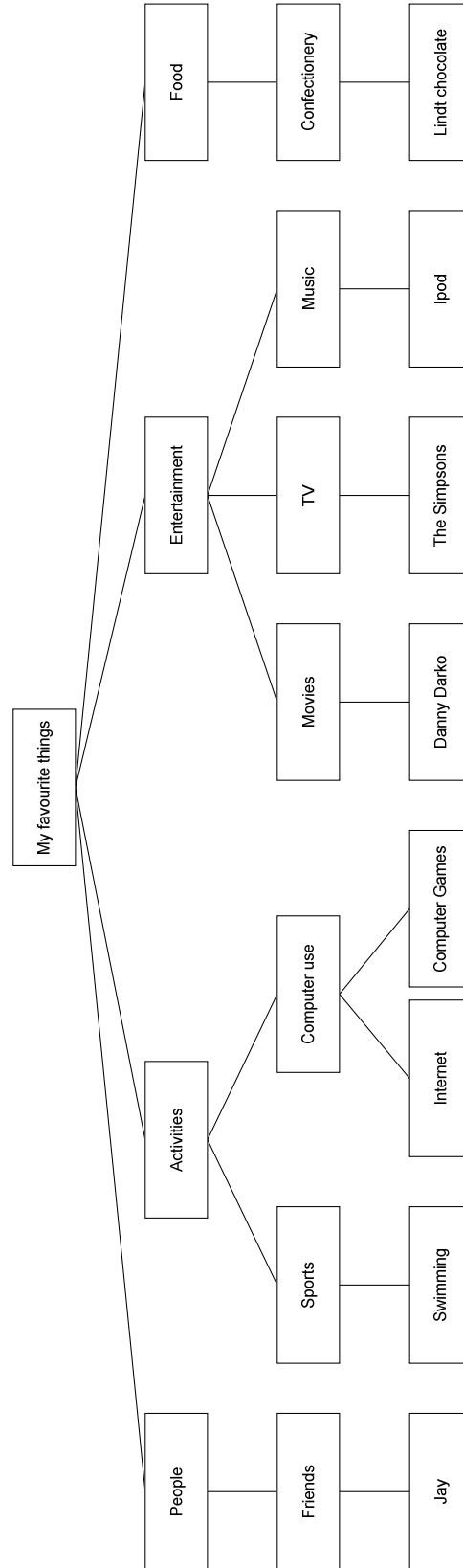
2. Rationale Examples

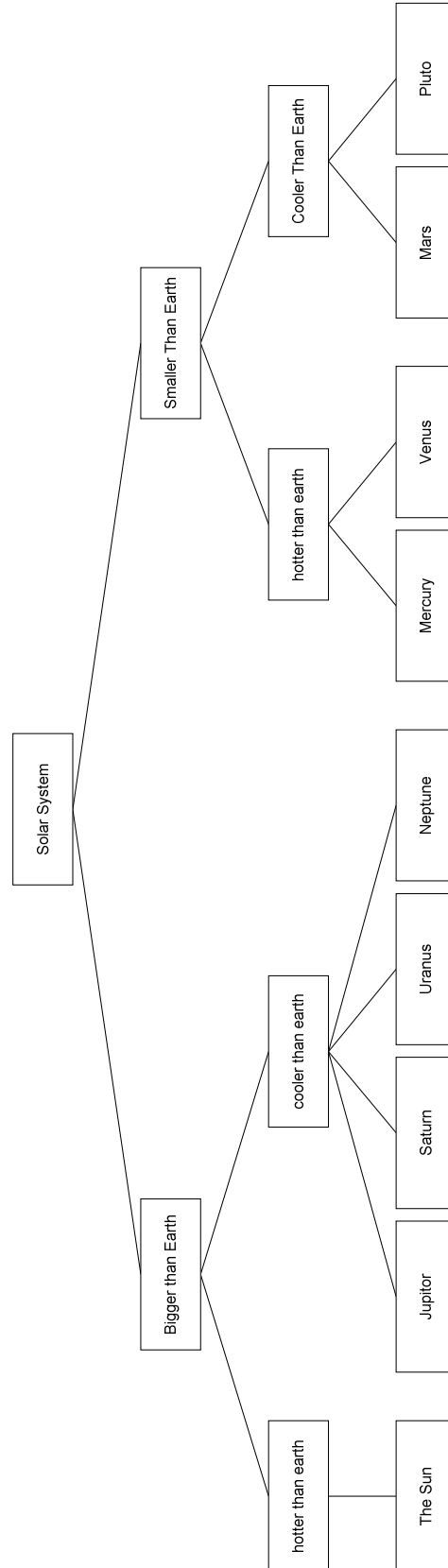
2.1 Middle Learners (Years 7-10)

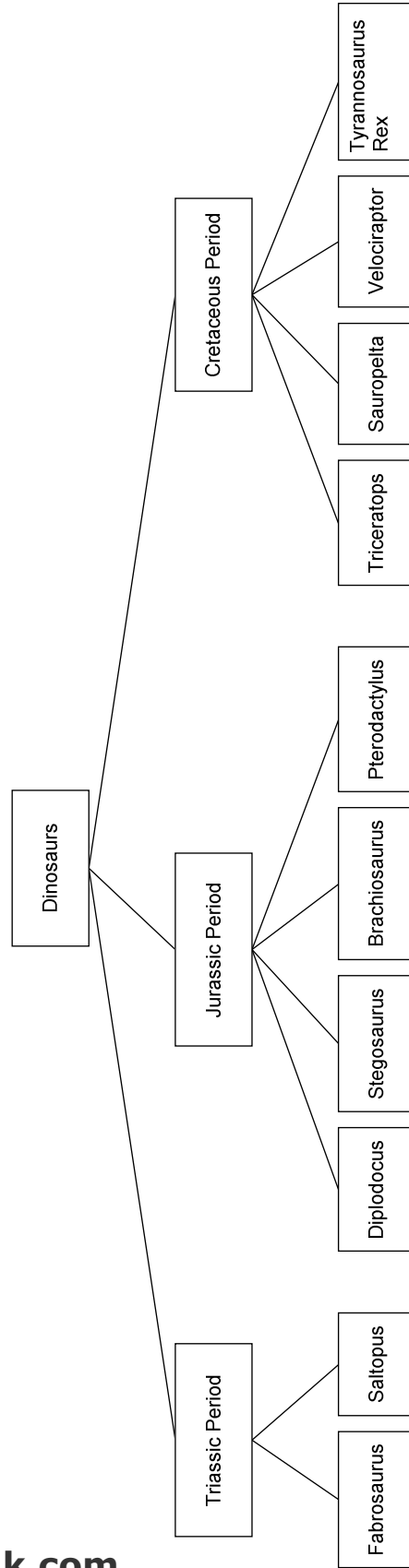
A. Grouping Maps

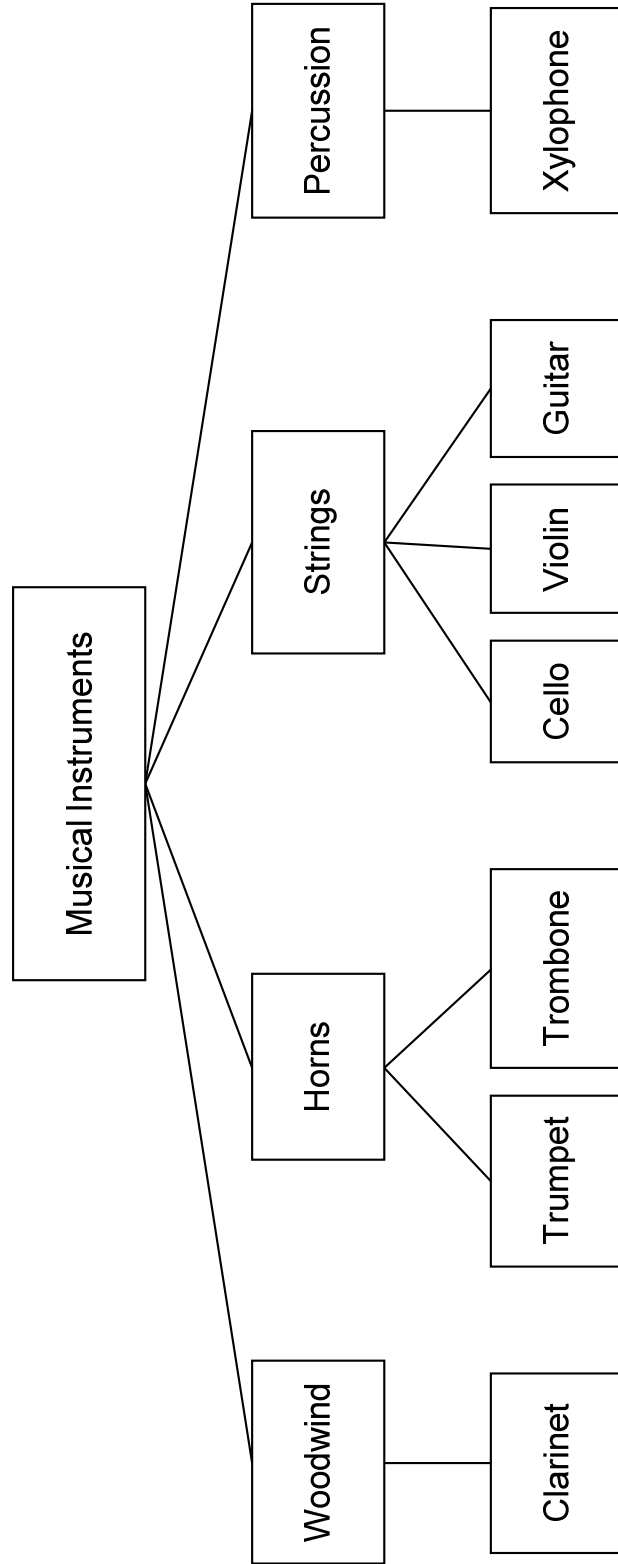


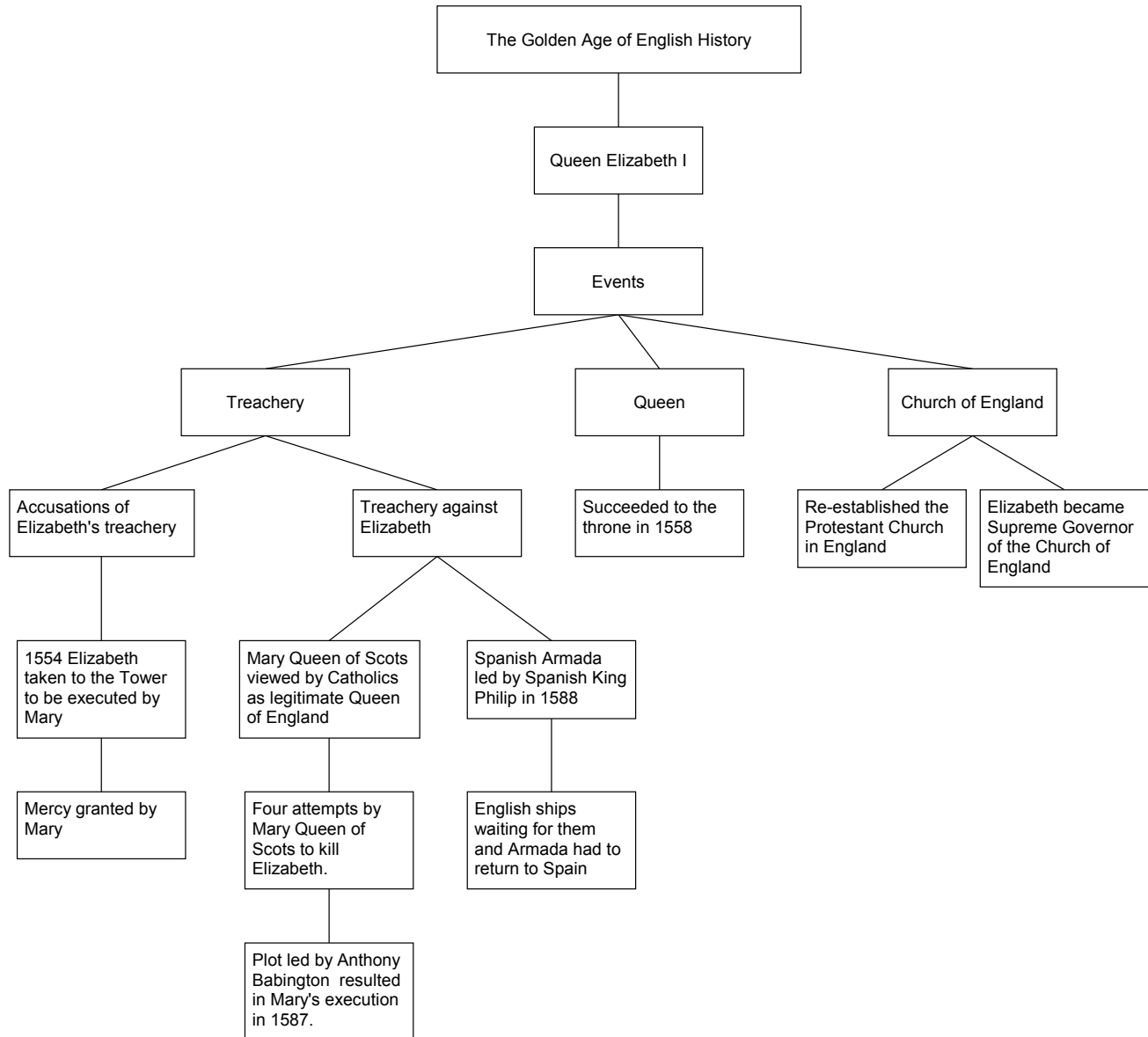


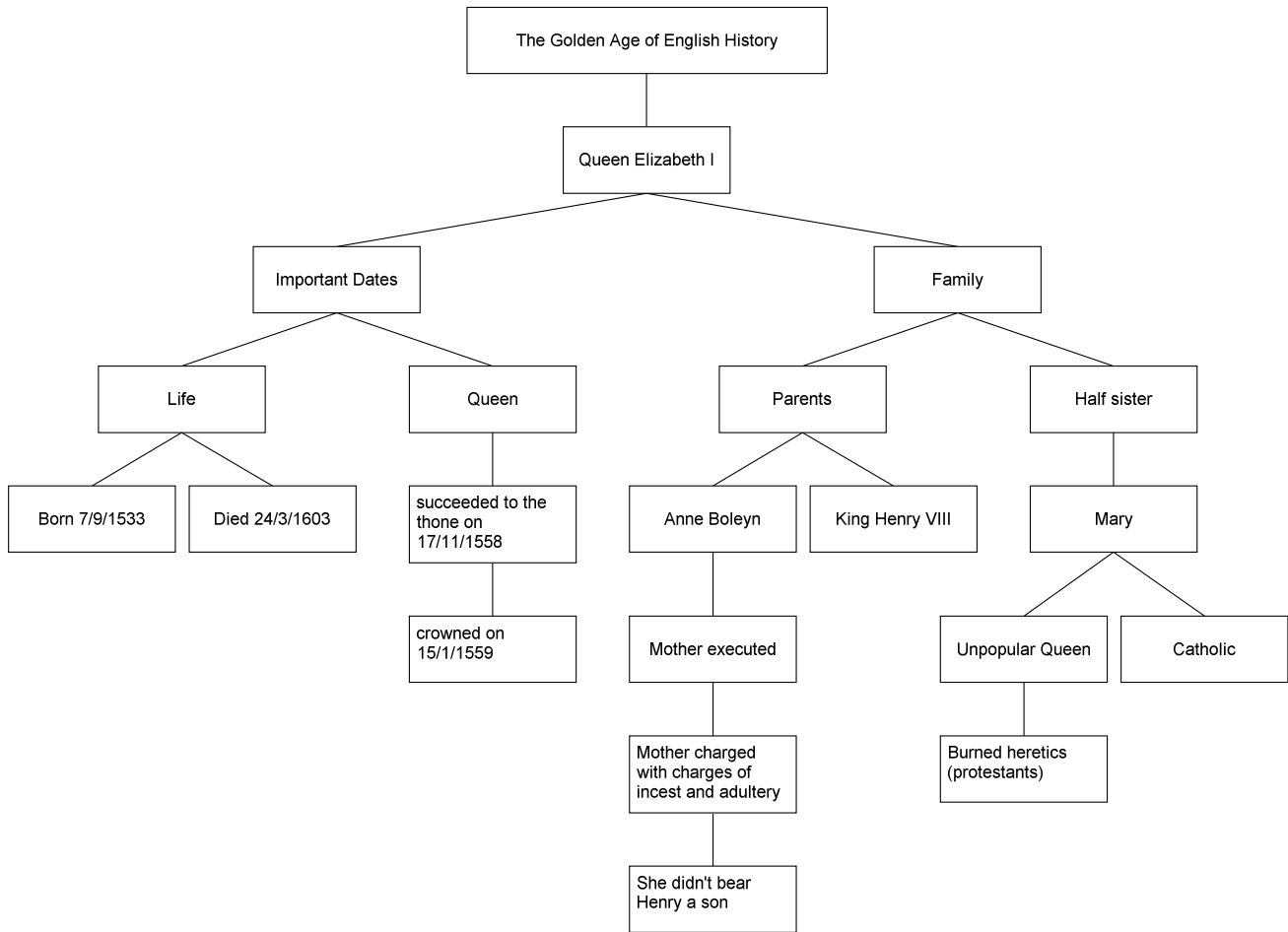


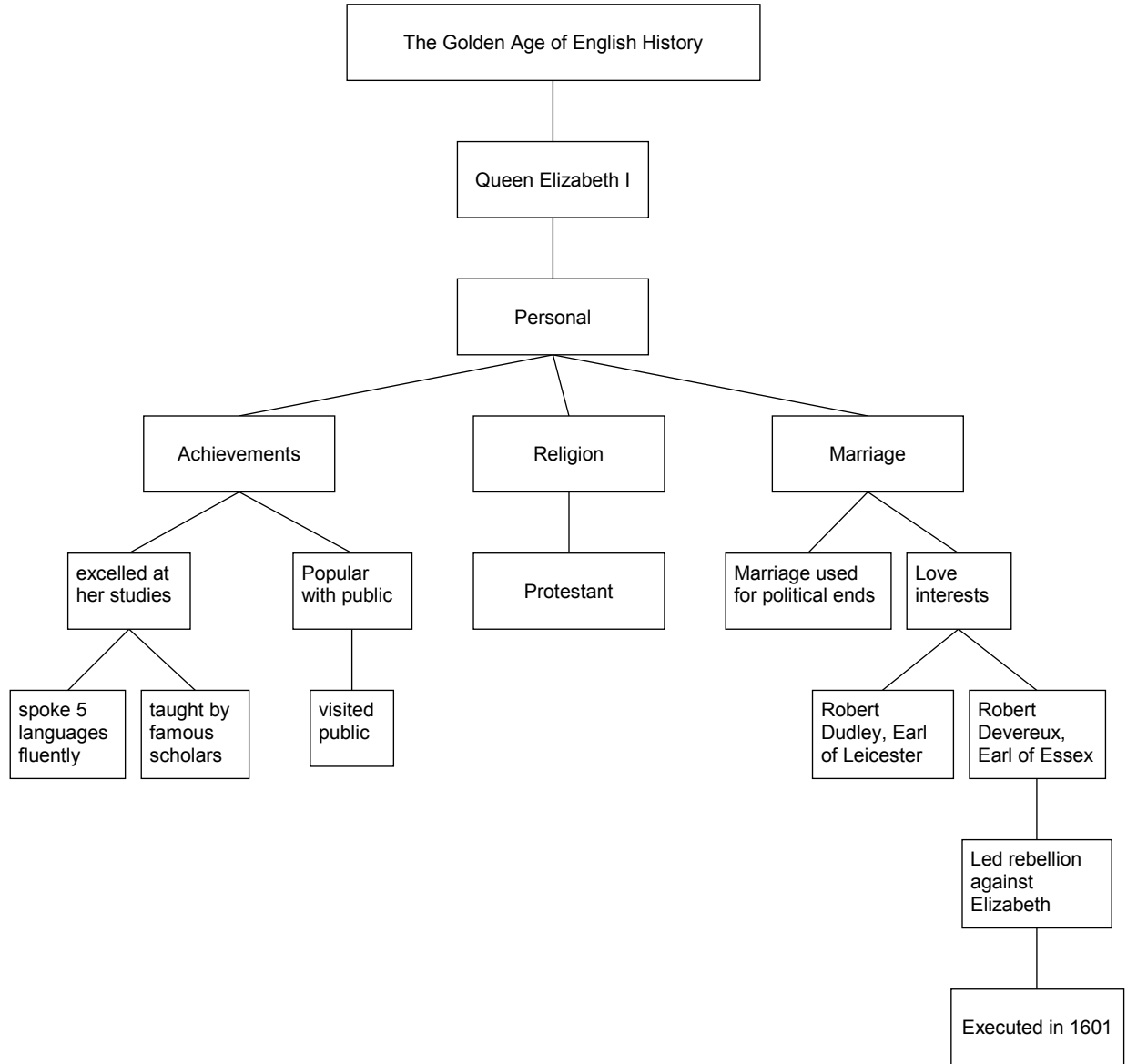




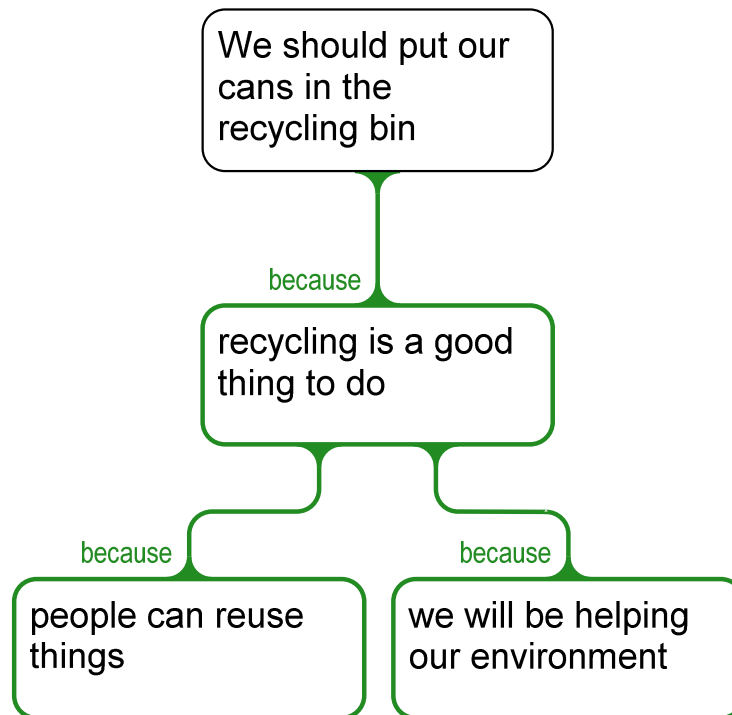








B. Reasoning Maps



3456 is divisible by 3

because

The sum of the digits is divisible by 3

because

Adding up the digits gives a total of 18, which is divisible by 3. (eg. $3+4+5+6 = 18$)

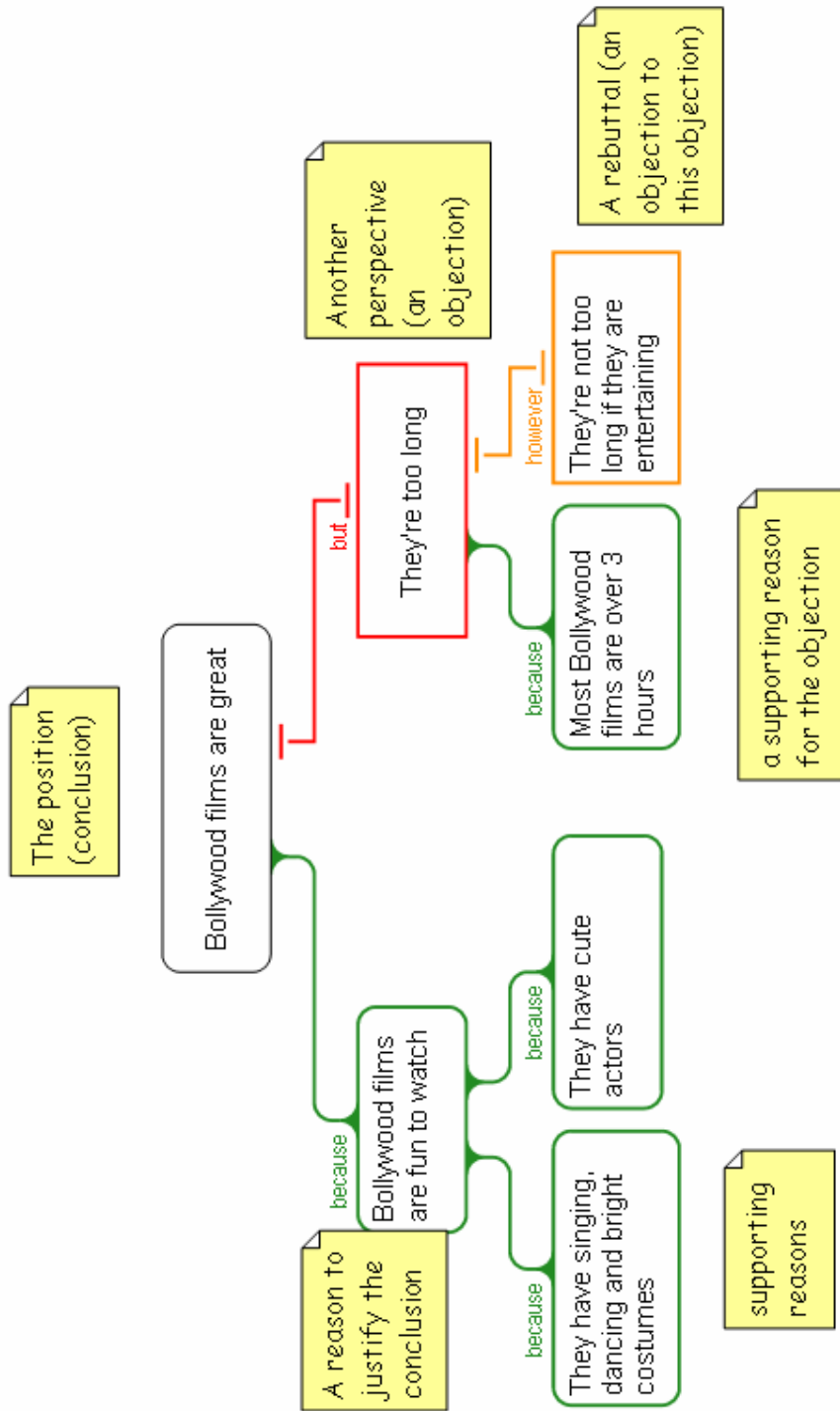
The commutative law applies to all mathematical operations

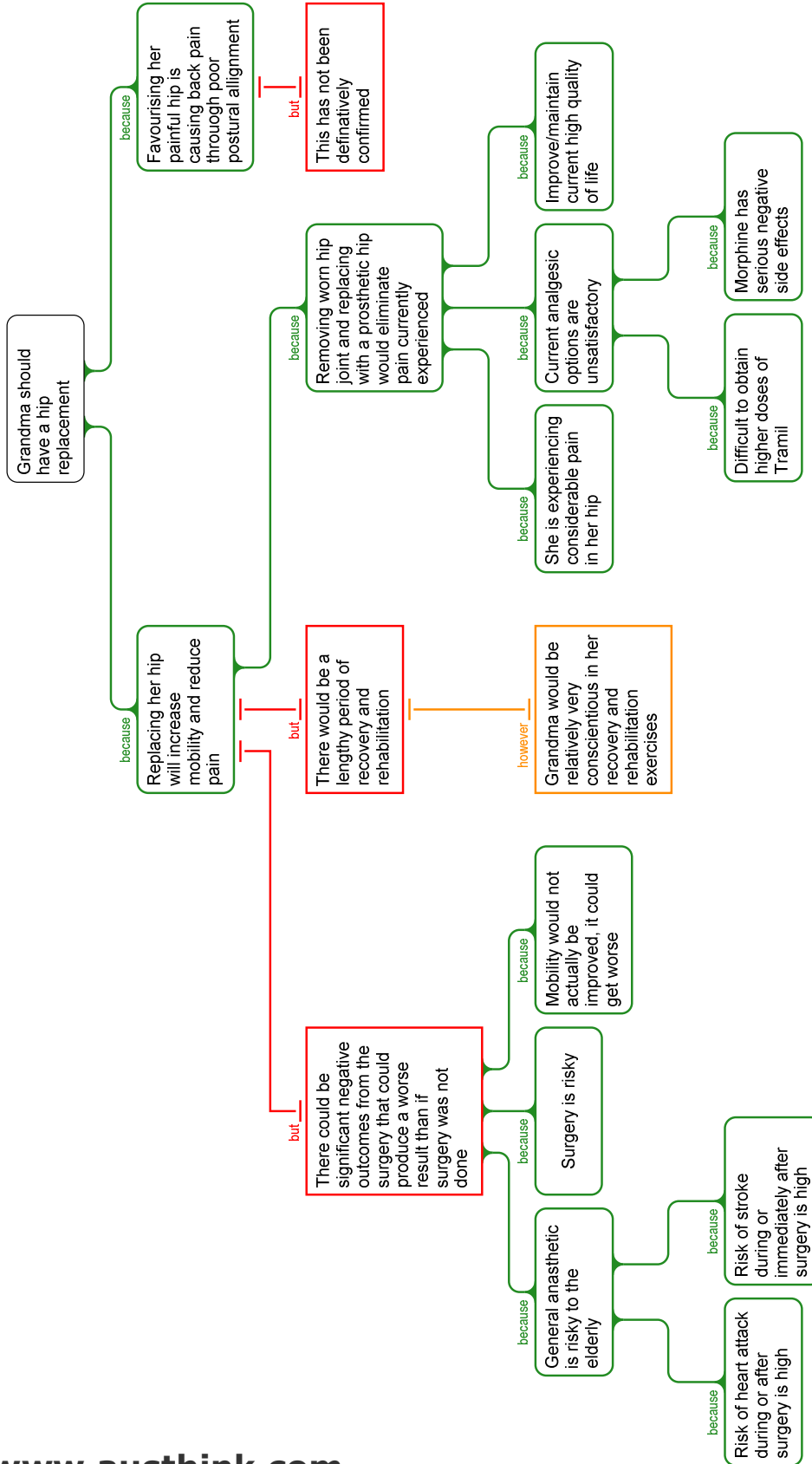
but

The commutative law doesn't apply when using subtraction

because

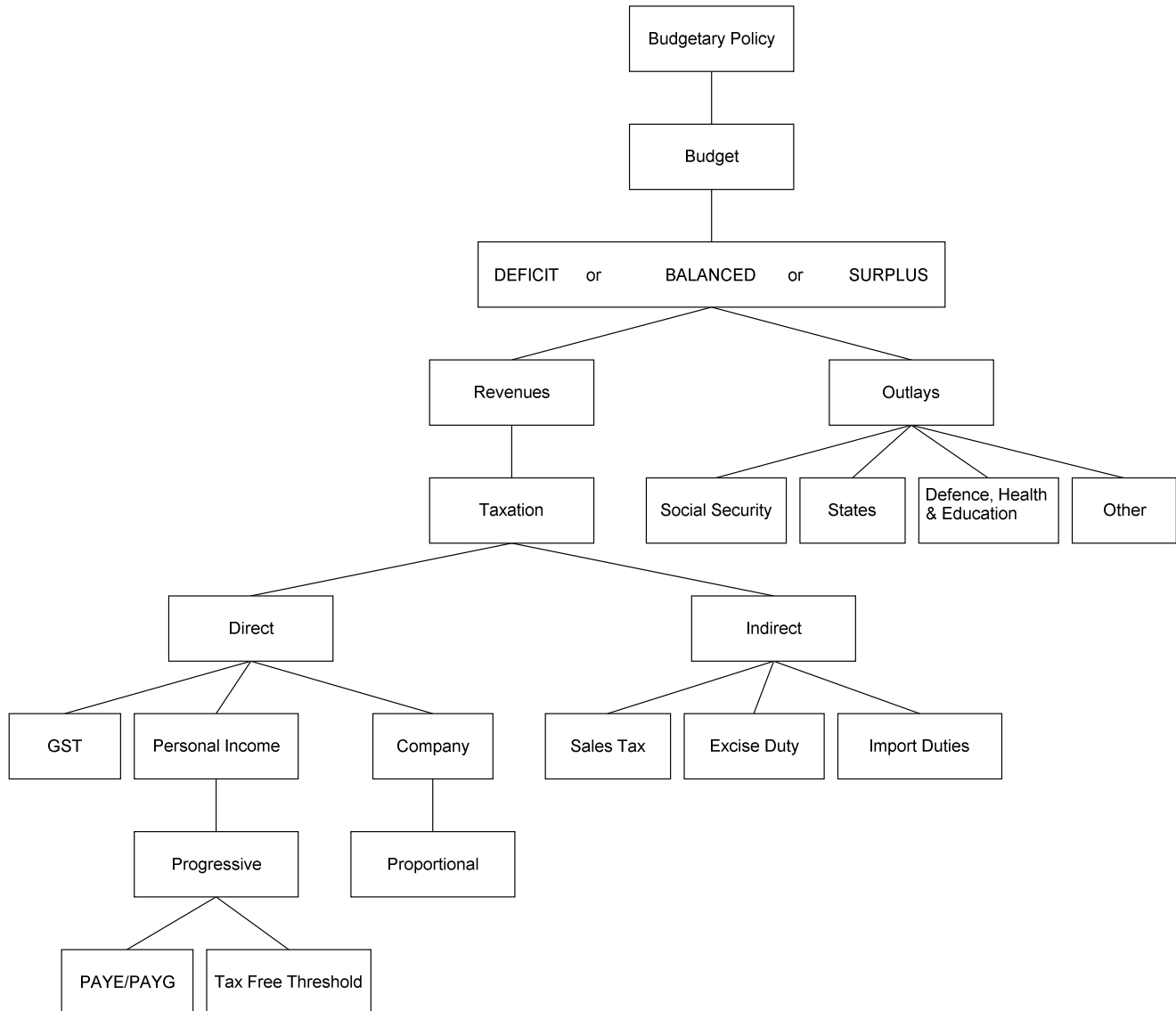
$3 - 2 = 1$ but $2 - 3 = -1$

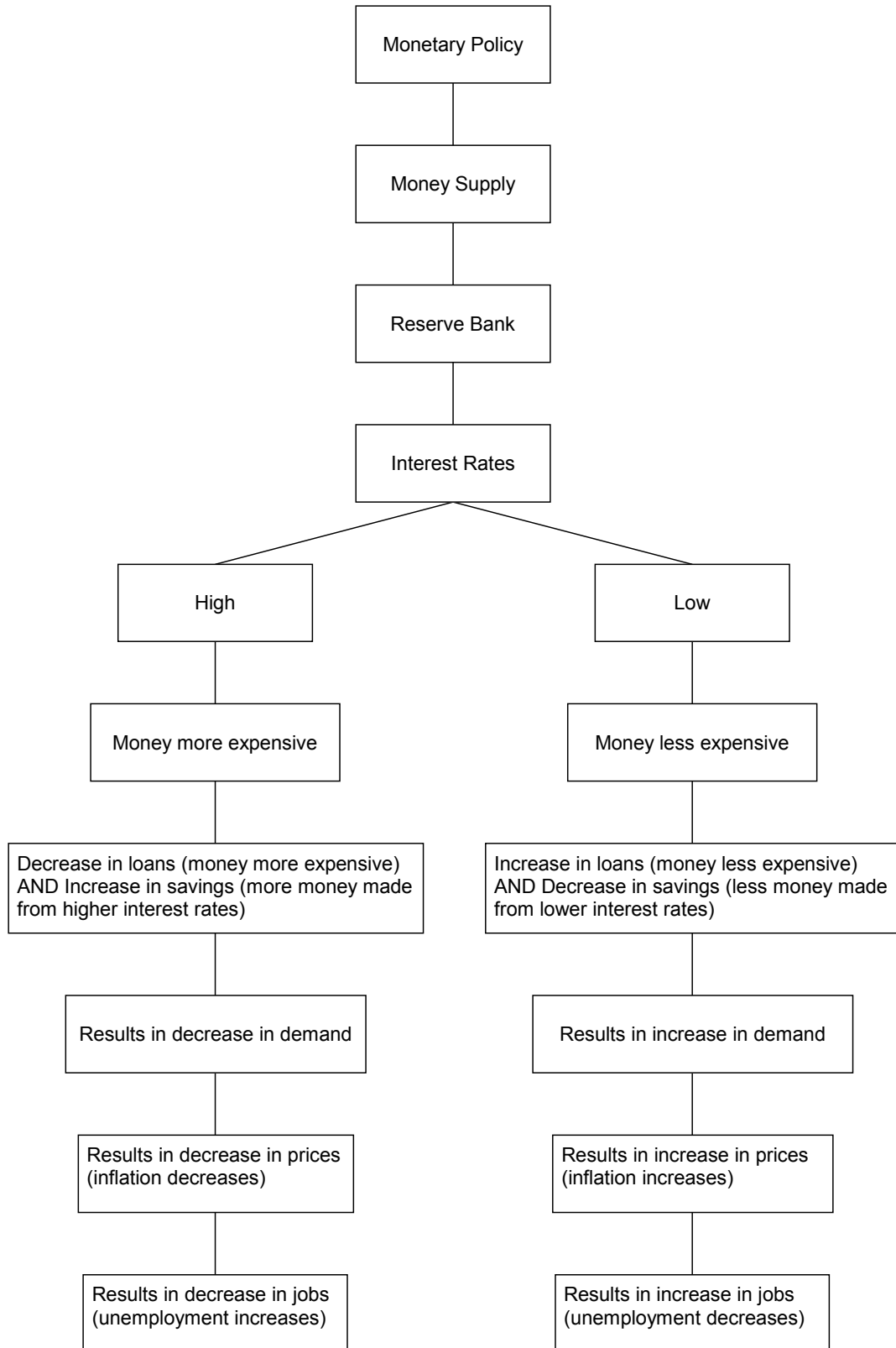


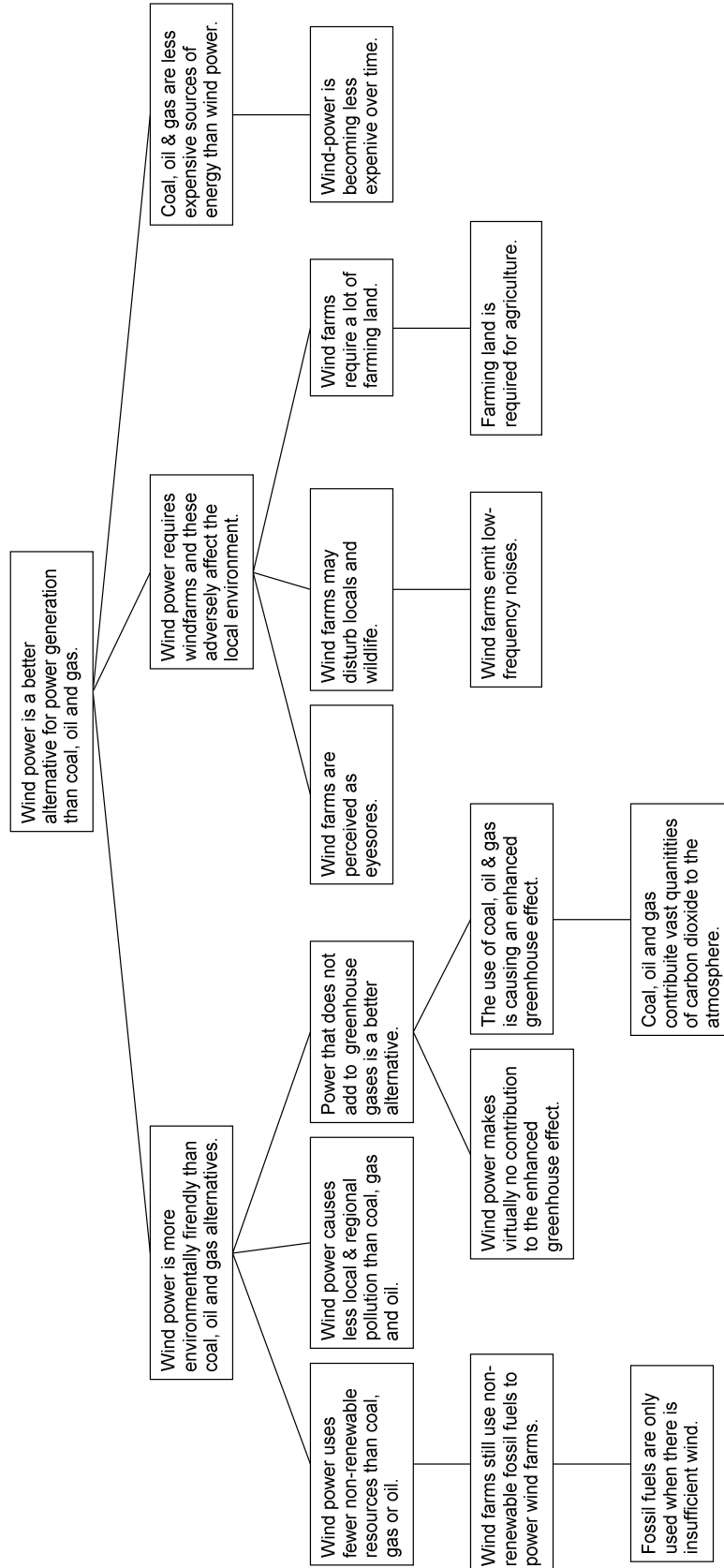


2.2 Senior Learners (Years 11-12)

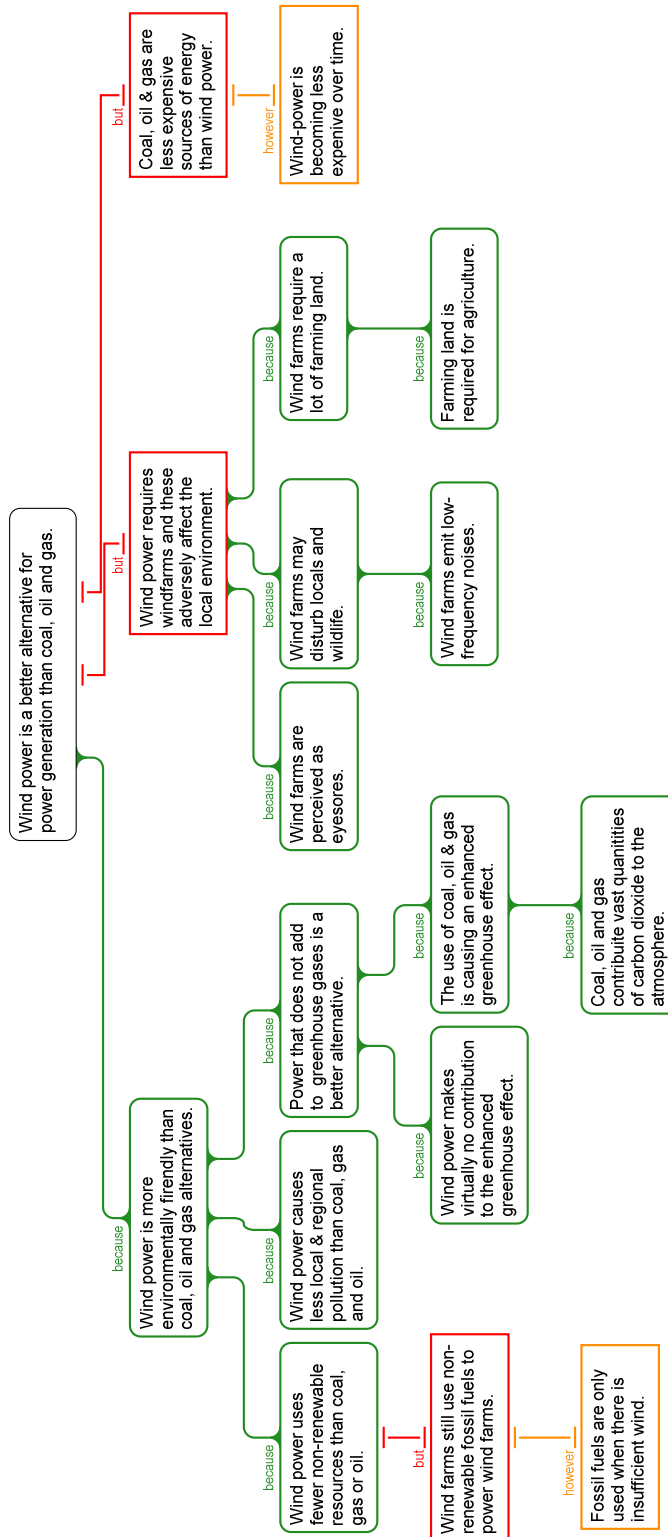
A. Grouping Maps

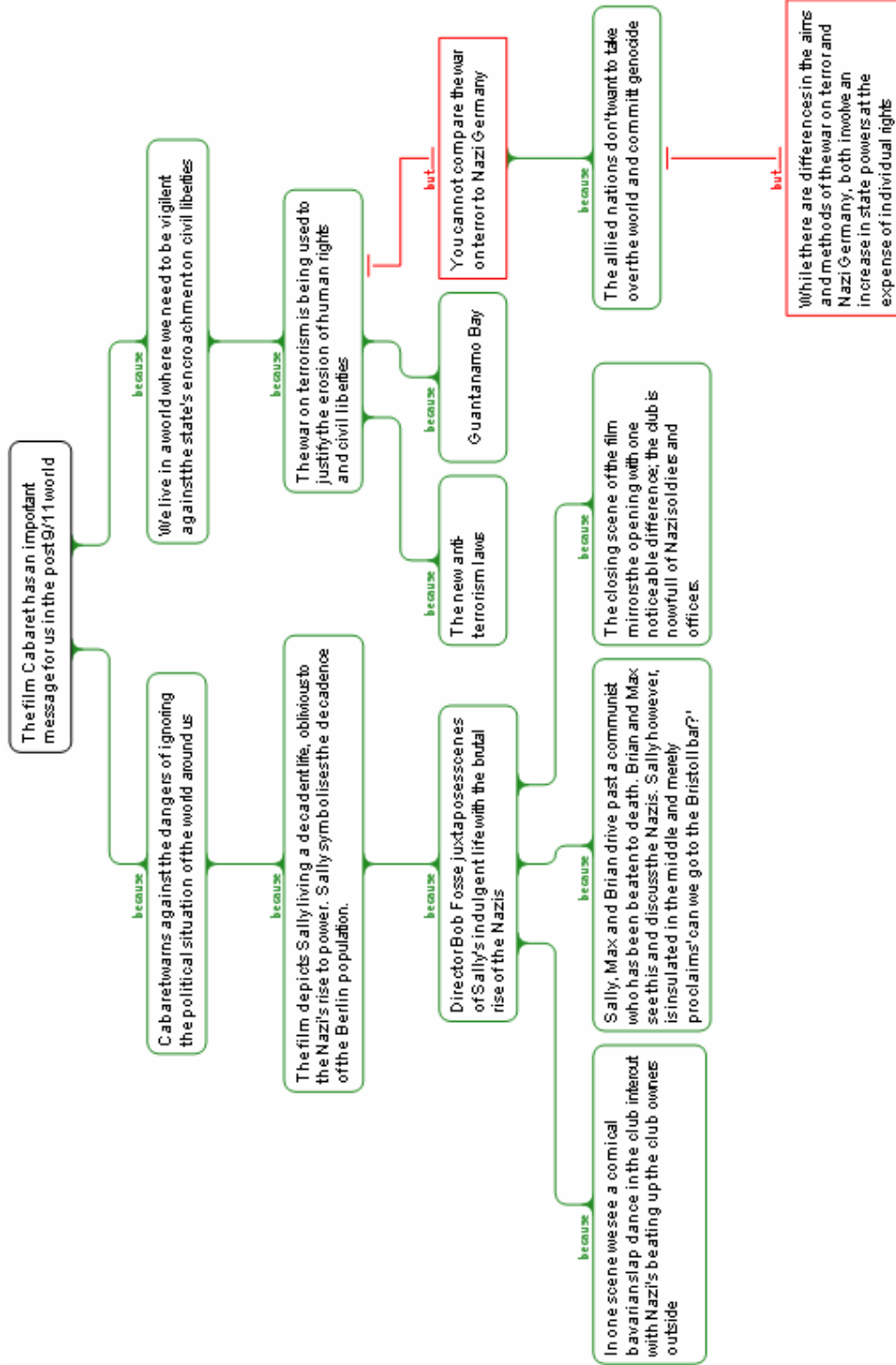


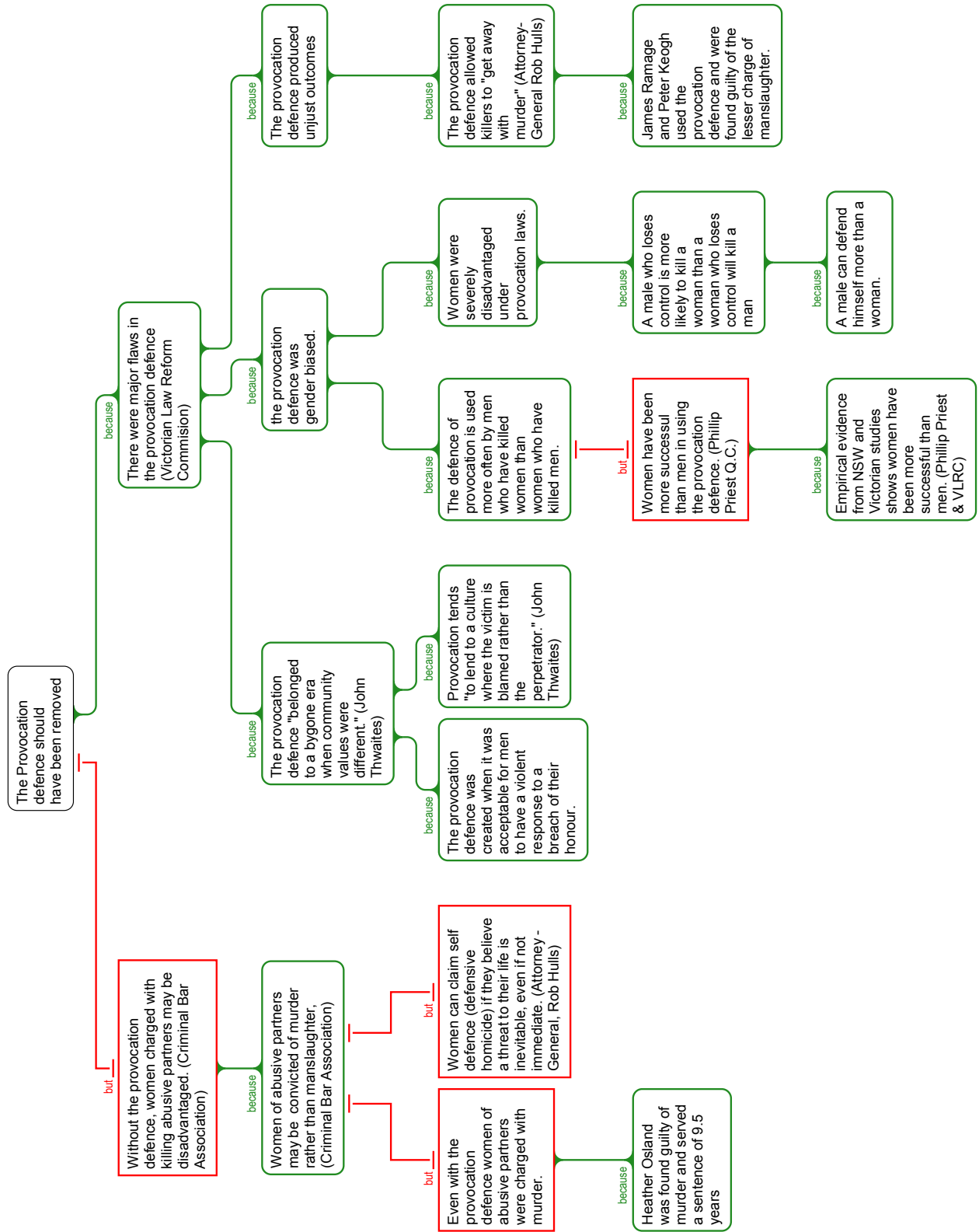


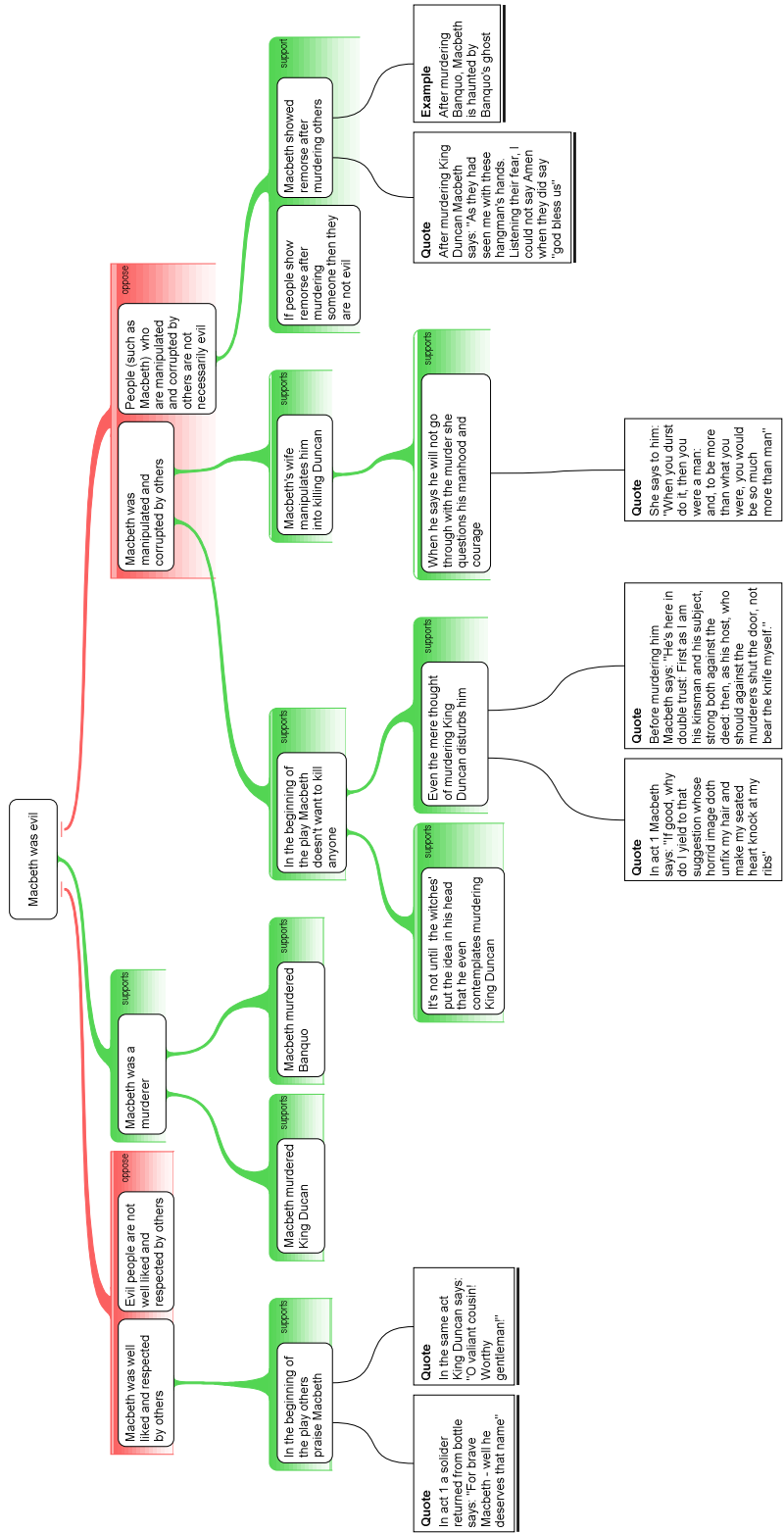


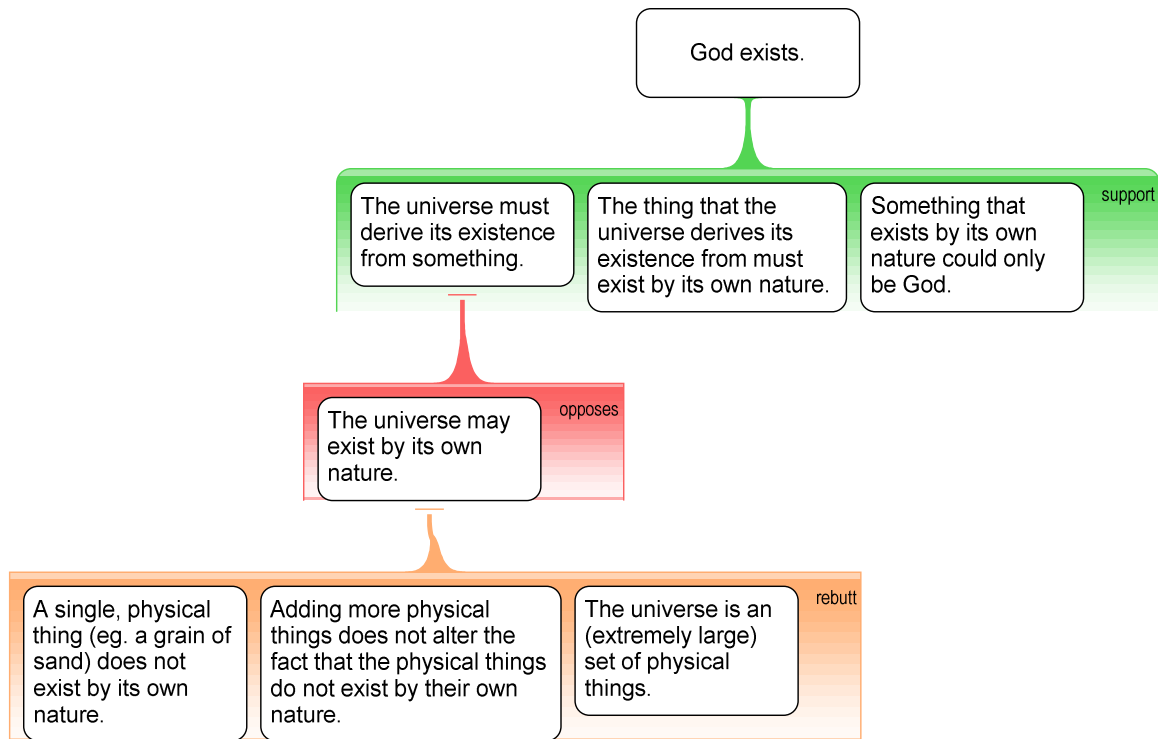
B. Reasoning Maps









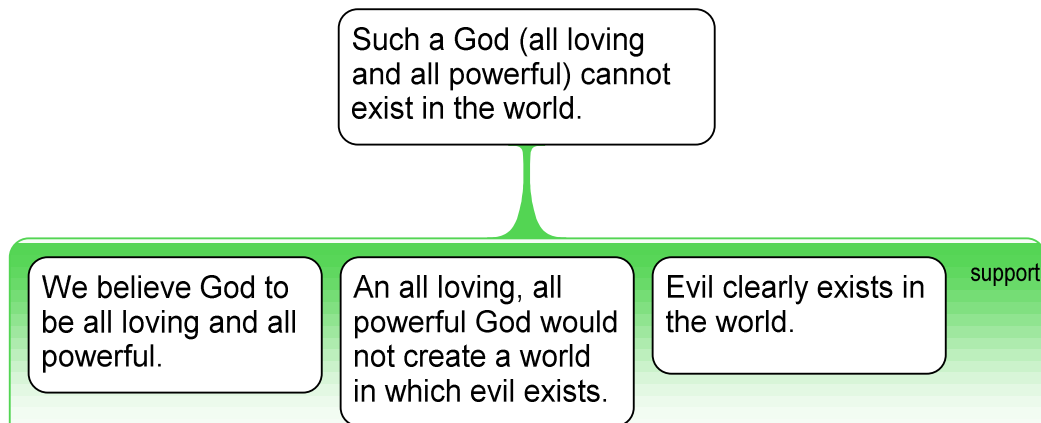


The cosmological argument offers a very persuasive reason to demonstrate that God exists. The reason can be succinctly contained by the following three claims. Firstly that the Universe must derive its existence from something, secondly that the thing the universe derives its existence from must exist by its own nature and thirdly, that something that exists by its own nature could only be God. Of course there is the objection to the main premise that the universe may exist by its own nature. However theologians provide a strong rebuttal which revolves around three self evident and logical claims. The main claim is that a single physical thing (eg. a grain of sand) does not exist by its own nature. Given the further claim that, adding more physical things does not alter the fact that the physical things do not exist by their own nature and given the unstated but obvious claim that, the universe is an (extremely large) set of physical things, we may find ourselves accepting this argument which demonstrates that God does indeed exist.

Problem of Evil

We believe God to be all-loving and all-powerful. An all-loving, all-powerful God would not create a world in which evil exists. Evil clearly exists in the world, therefore such a God cannot.

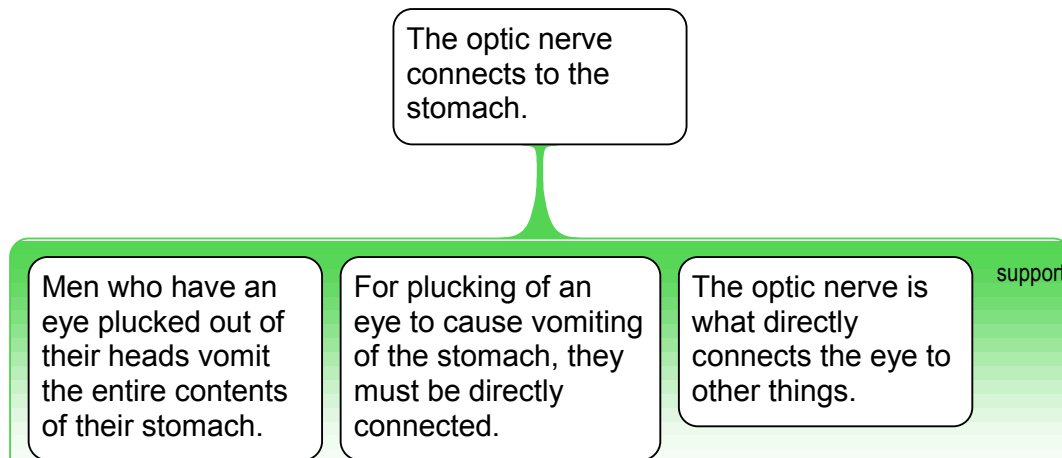
- Based on David Hume (1711-76), from *Dialogues Concerning Natural Religion*, Part X.



Eyes & Stomach

Many right skilful masters in chirurgery [surgery], and the best learned anatomists, are of the opinion that the veins [nerves] of the eyes reach to the brain. For mine own part, I would rather think that they pass into the stomach. This is certain, I never knew a man's eye plucked out of his head, but he fell to vomiting upon it, and the stomach cast up all within it.

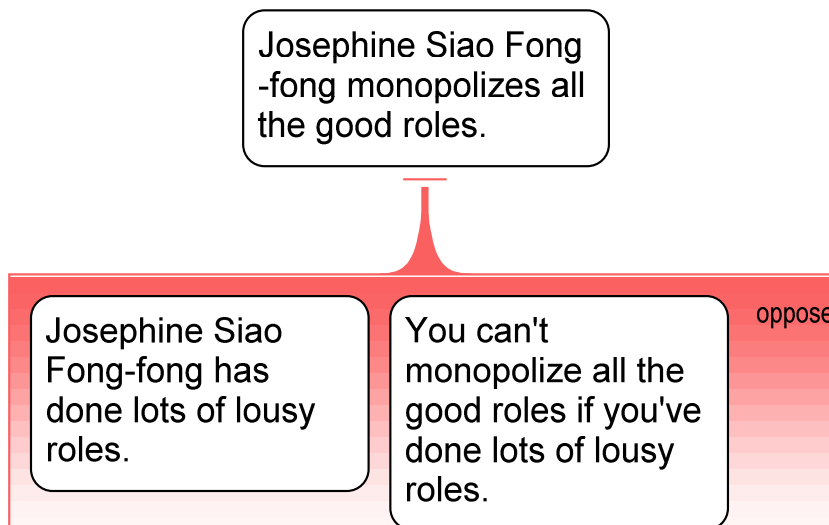
- Pliny the Elder, a Roman nobleman and historian who died during the 79 AD eruption of Mt Vesuvius.



Monopoly

In fact, after a career starring in over two hundred films, running the gamut from child performer to teen idol to mature actor, her career has reached a new peak. The more jealous thespians might be tempted to say that Siao monopolizes all the good female roles. "Not so!" she protests with a smile. "They've probably forgotten all the lousy ones I did."

- from *B Magazine*, Feb. 1997 - interview with Josephine Siao Fong-fong.

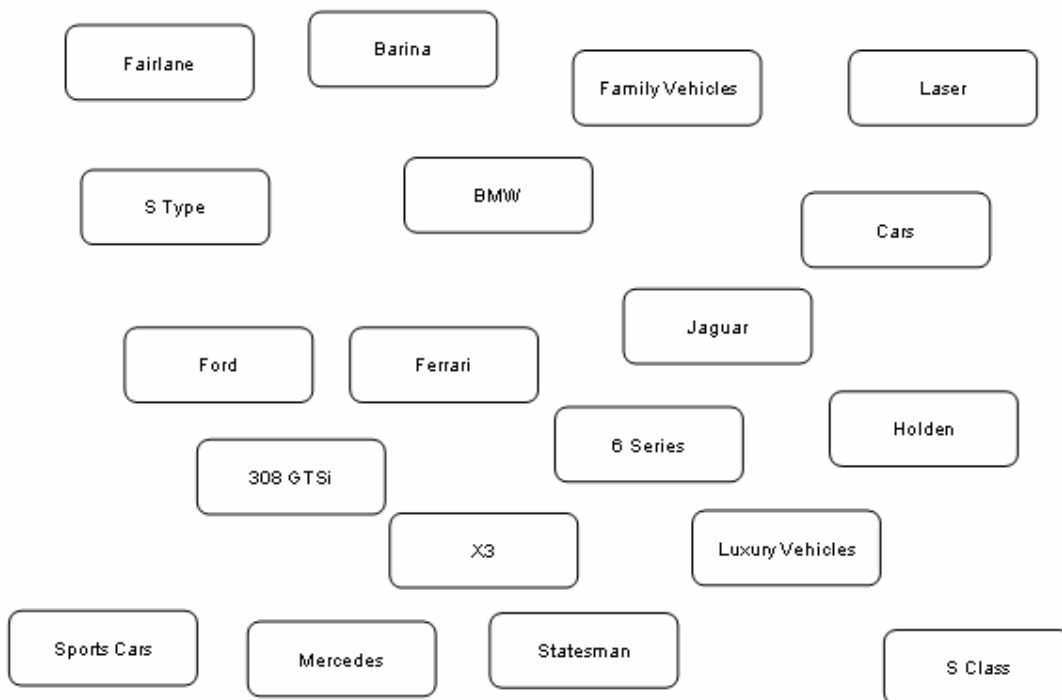


3. Rationale Templates

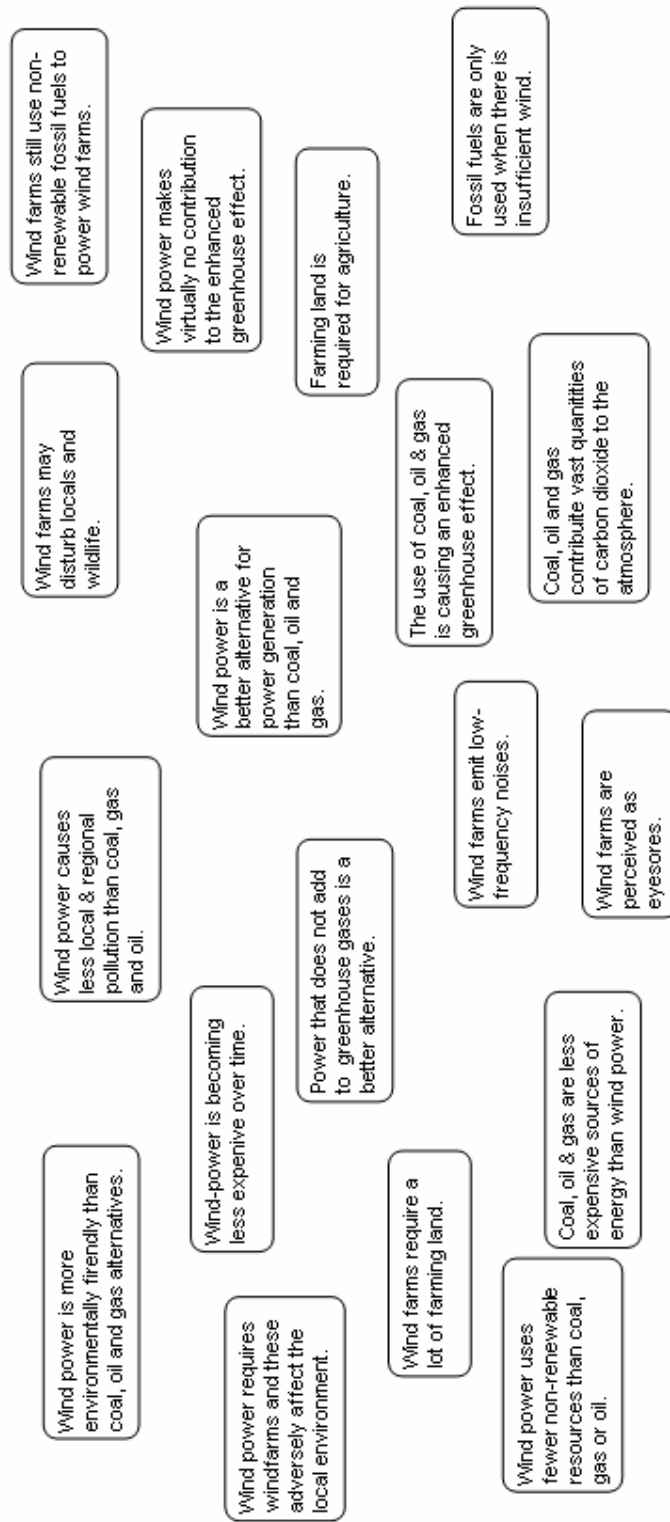
3.1 Activity Templates

A. Jigsaws

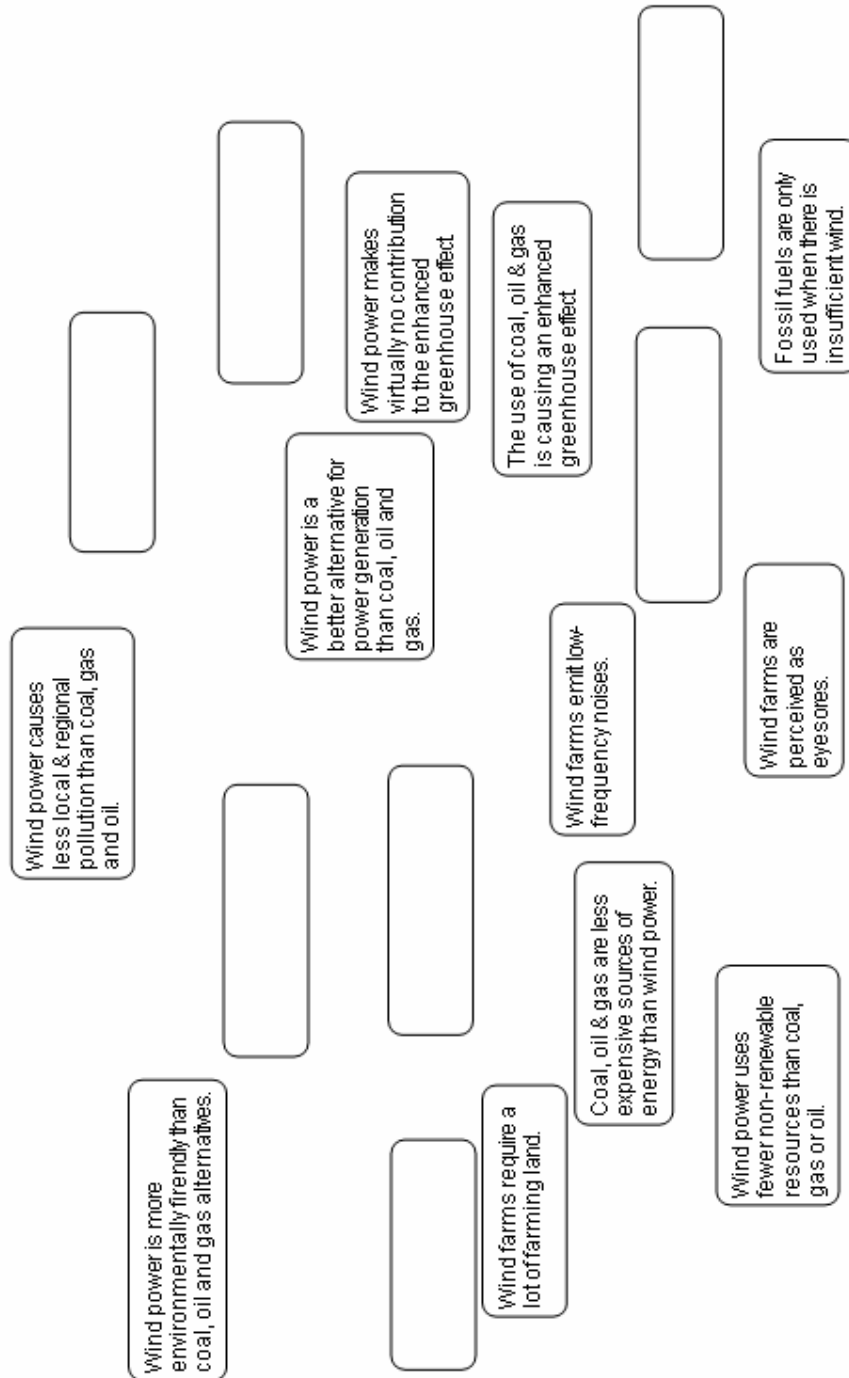
Cars



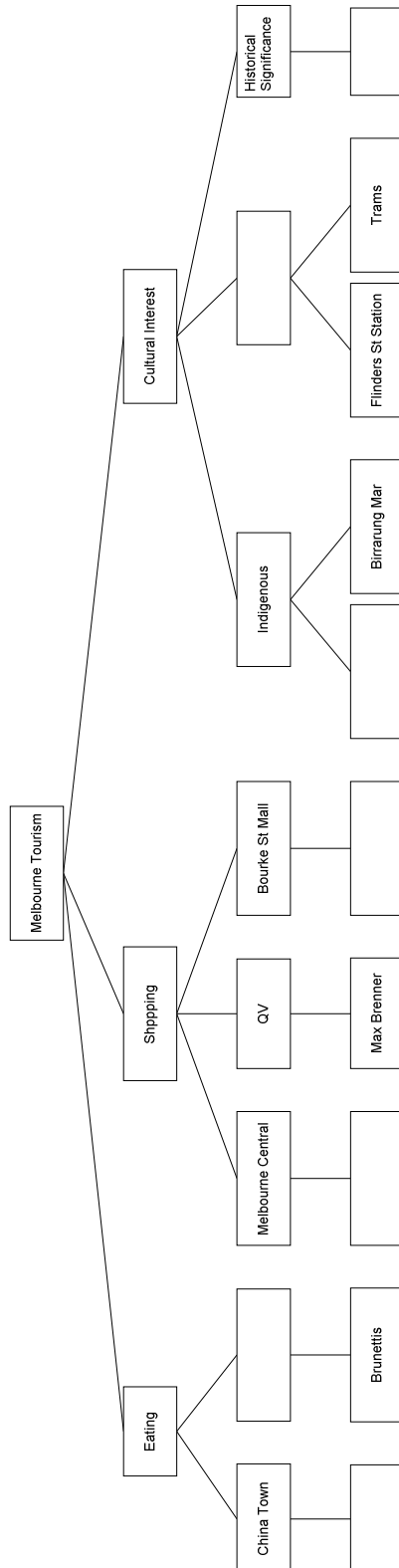
Windfarms

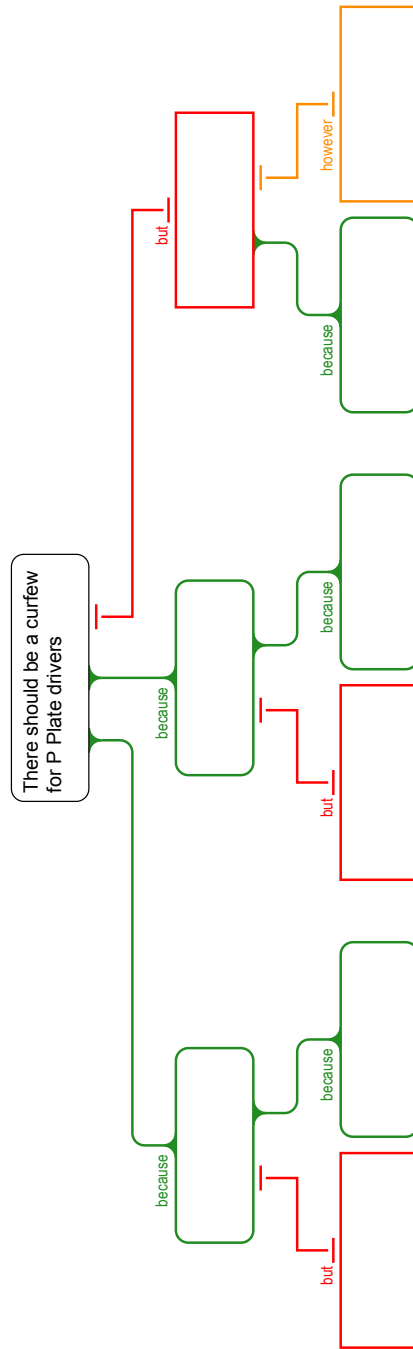


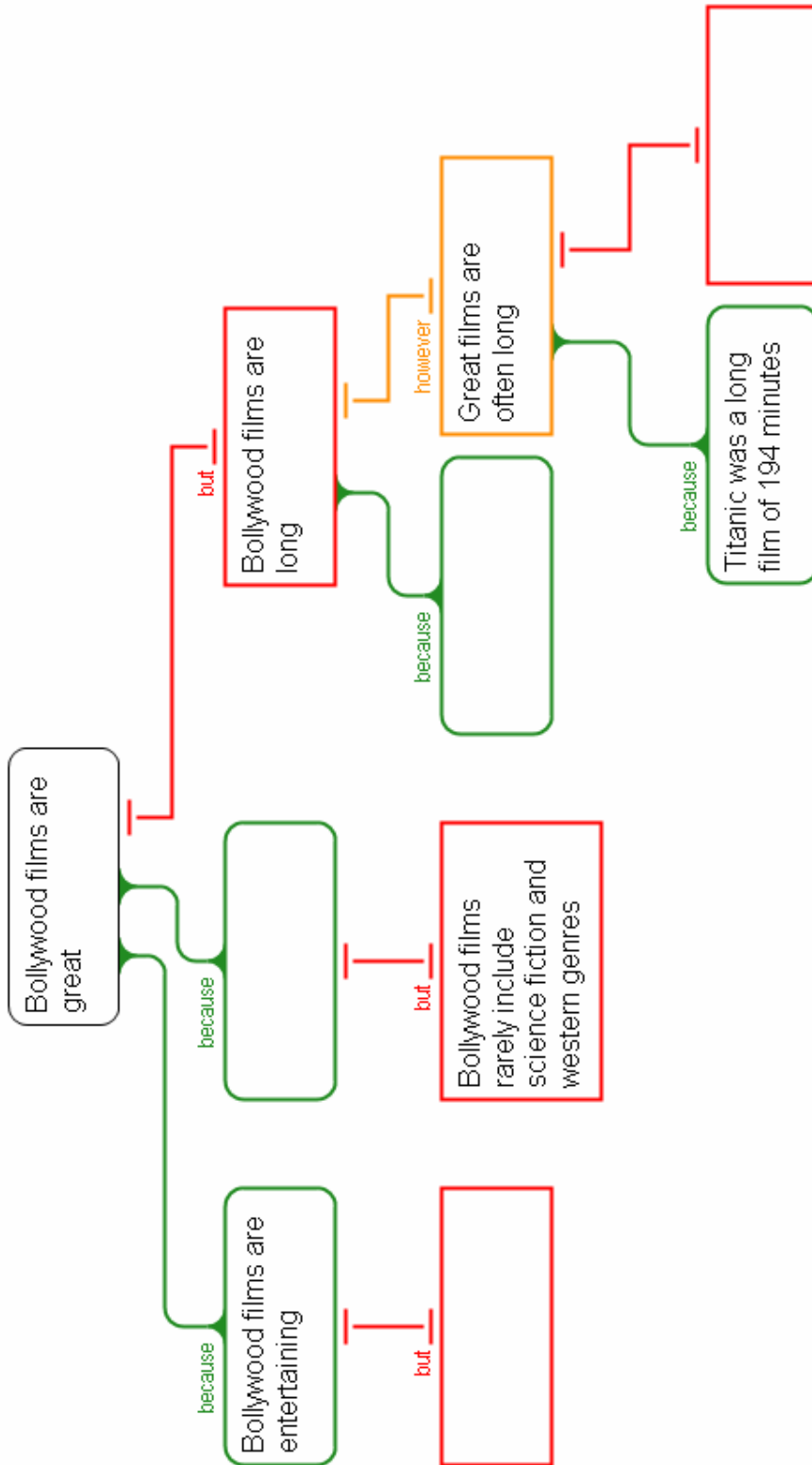
Windfarms (with missing text)



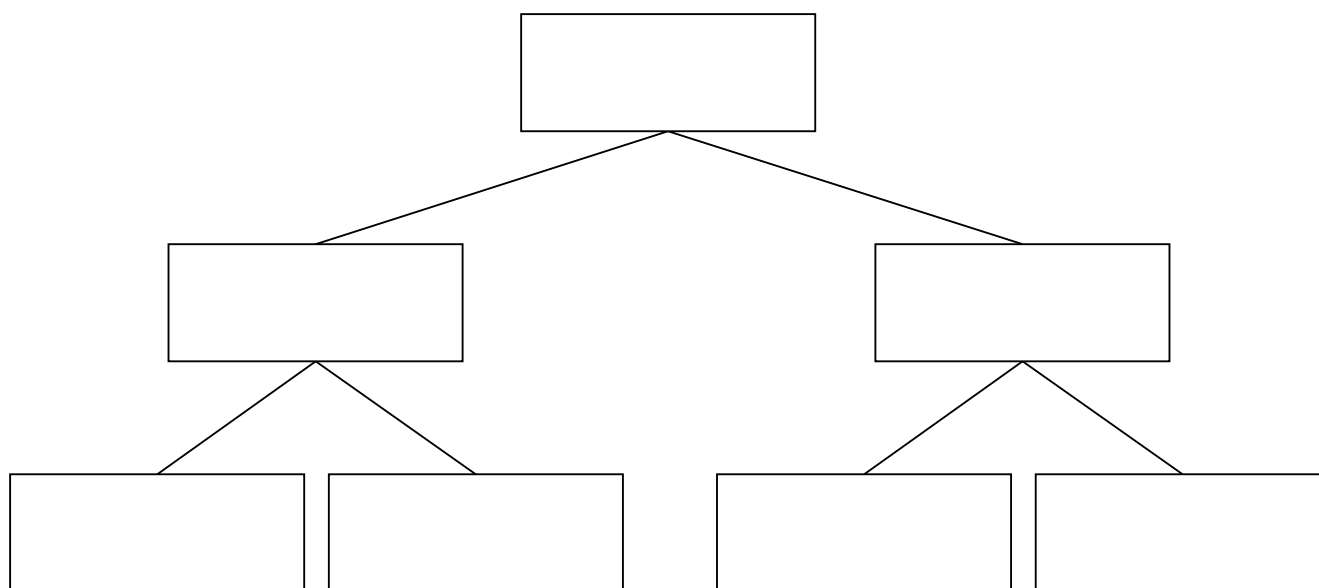
2. Missing Objects and Concepts – Fill in the missing objects or claims

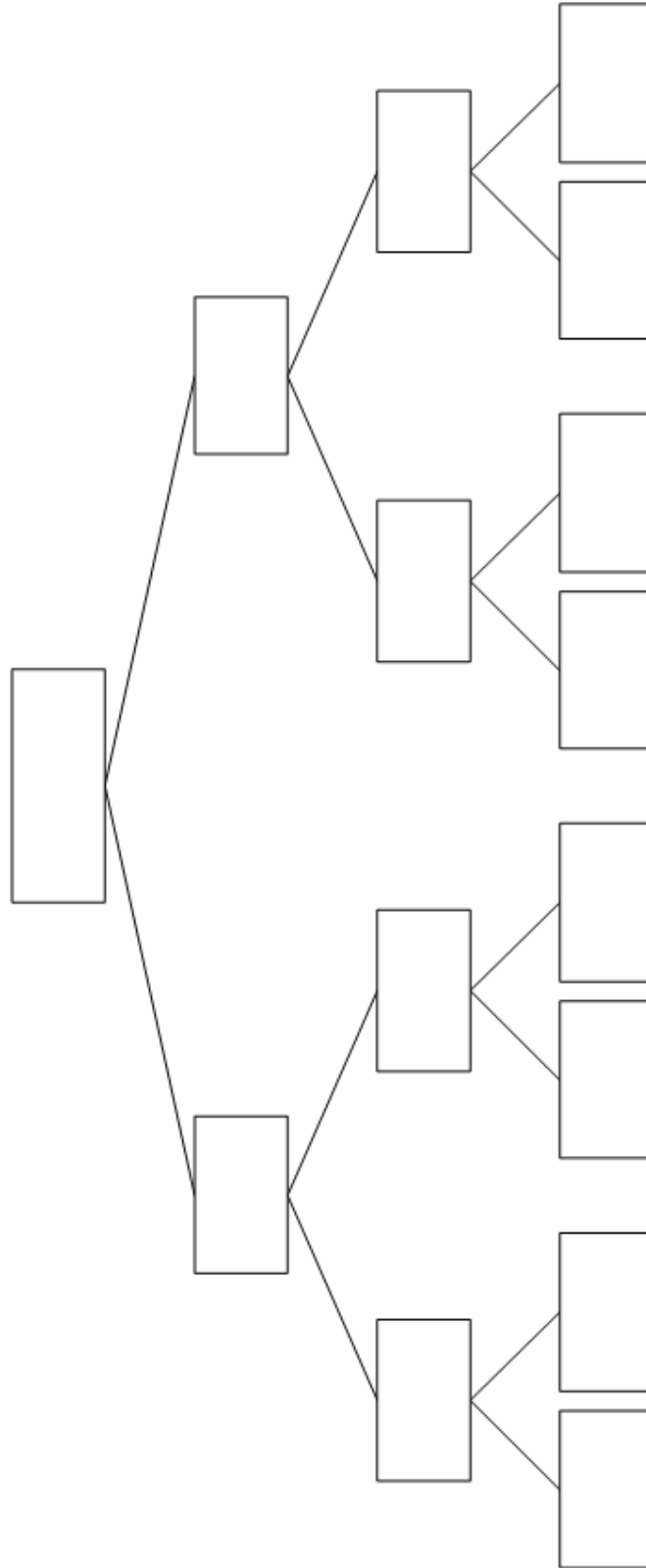


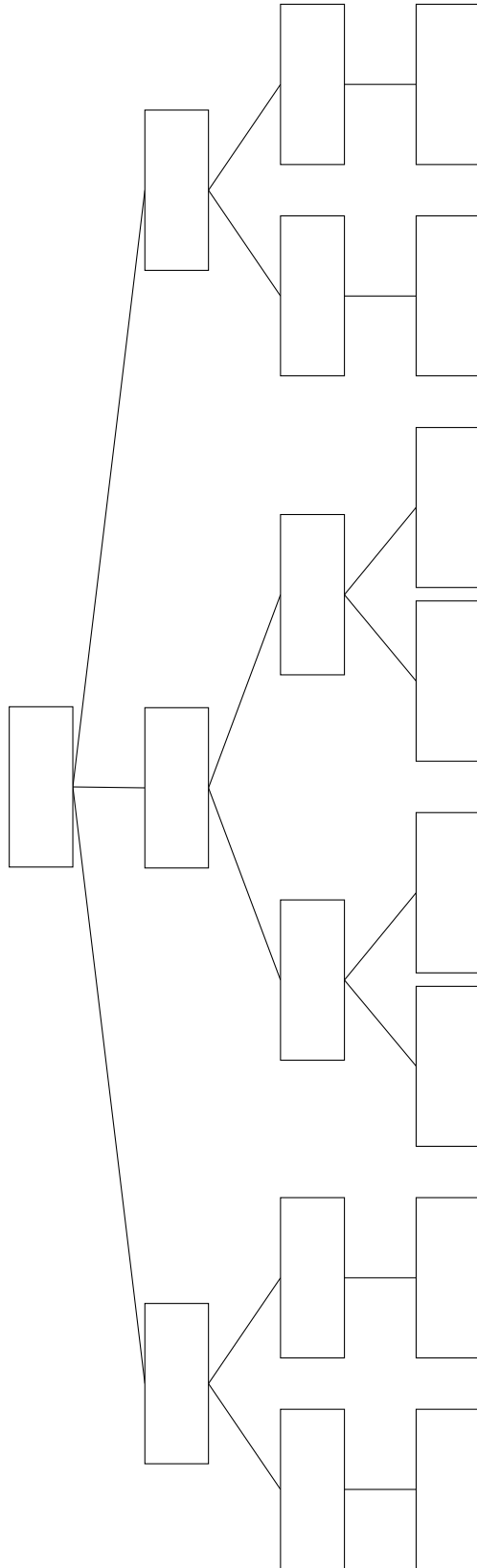


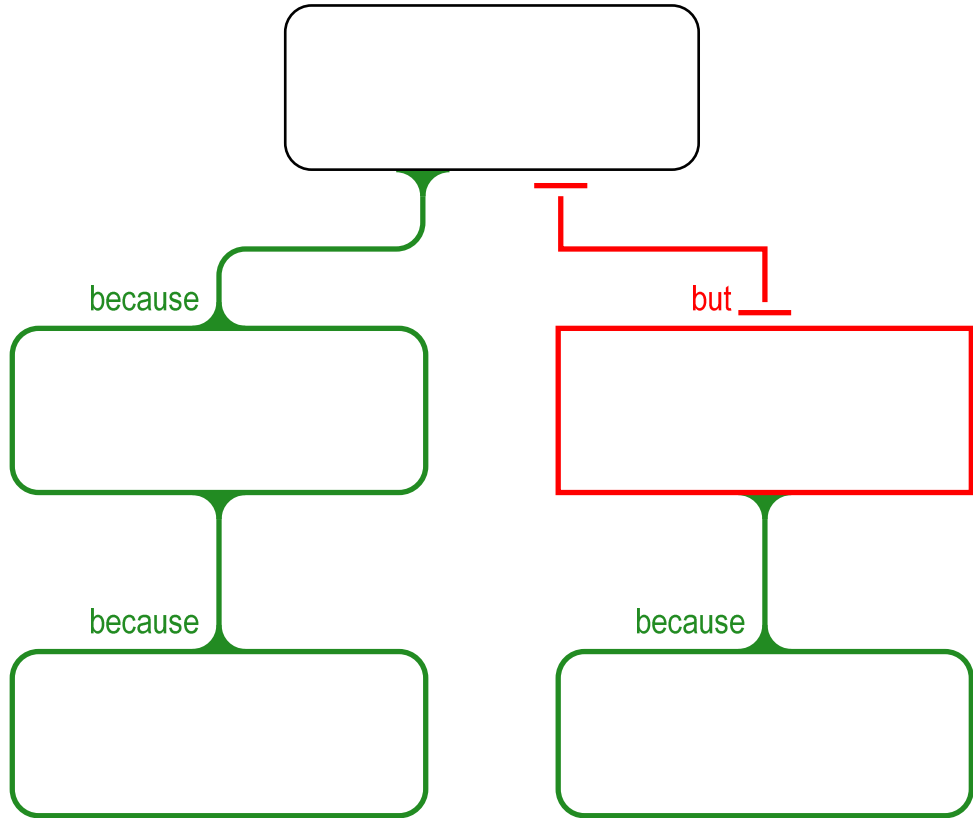


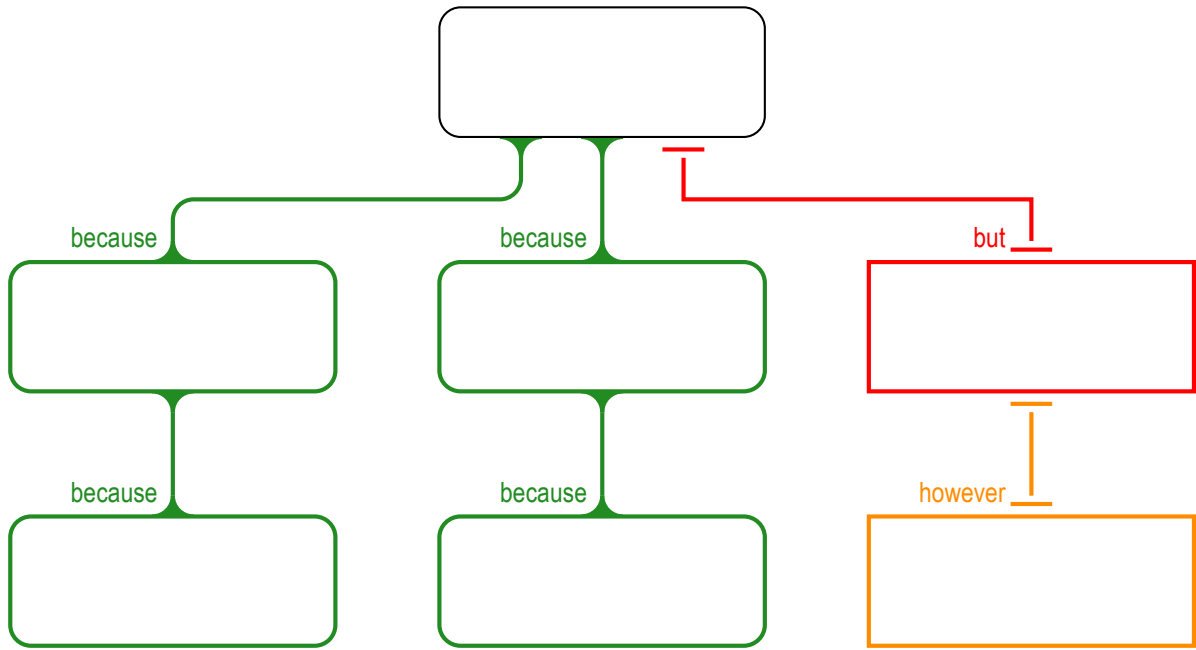
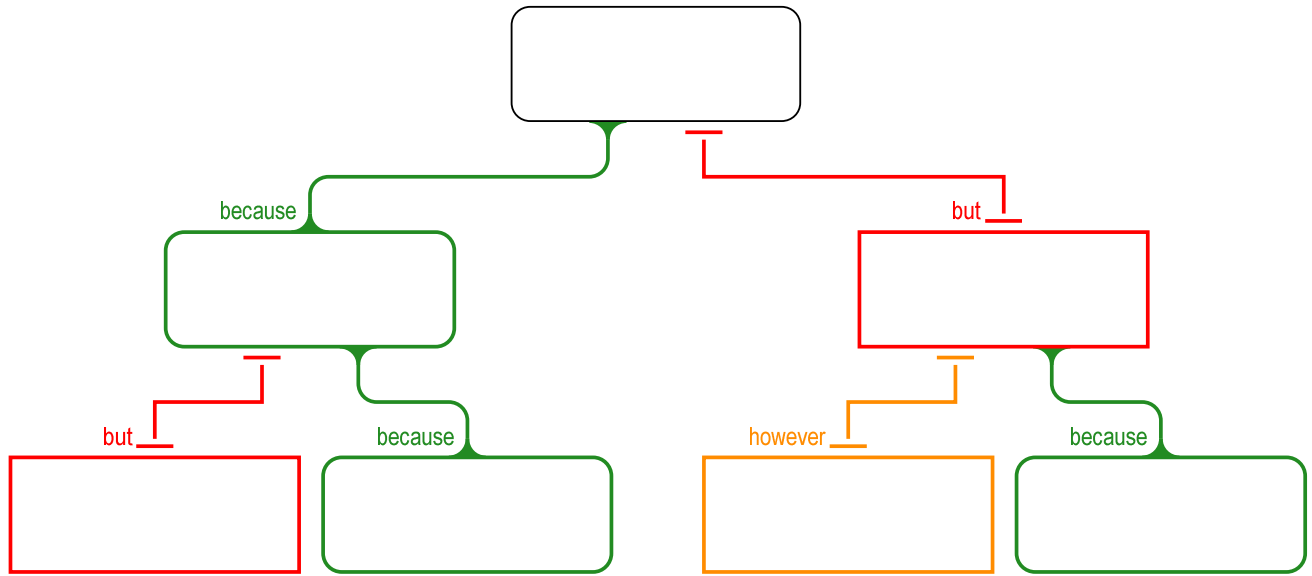
3.2 Map Templates

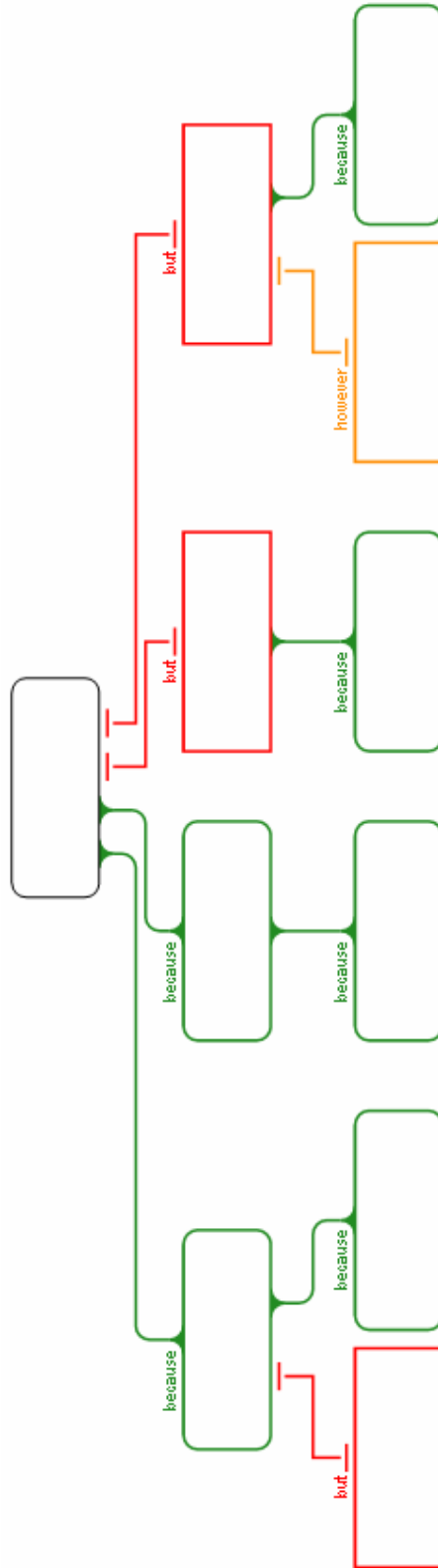


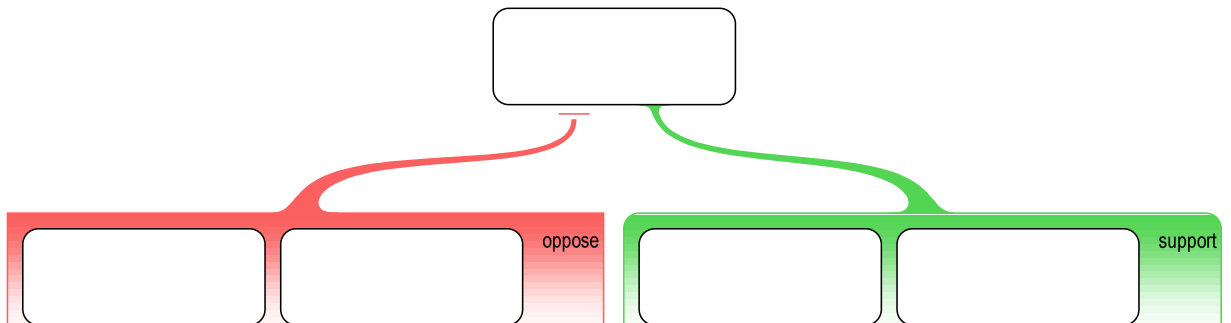
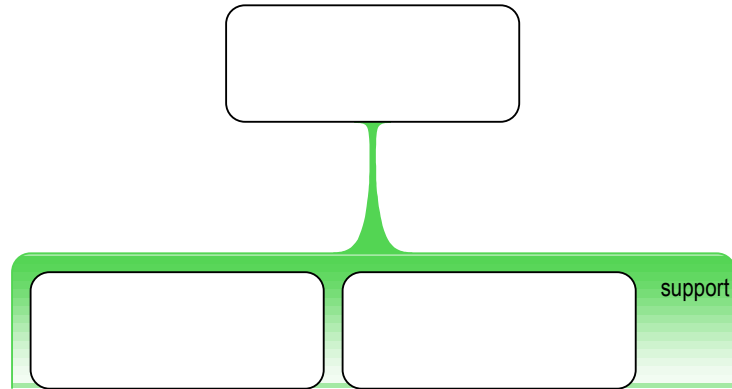


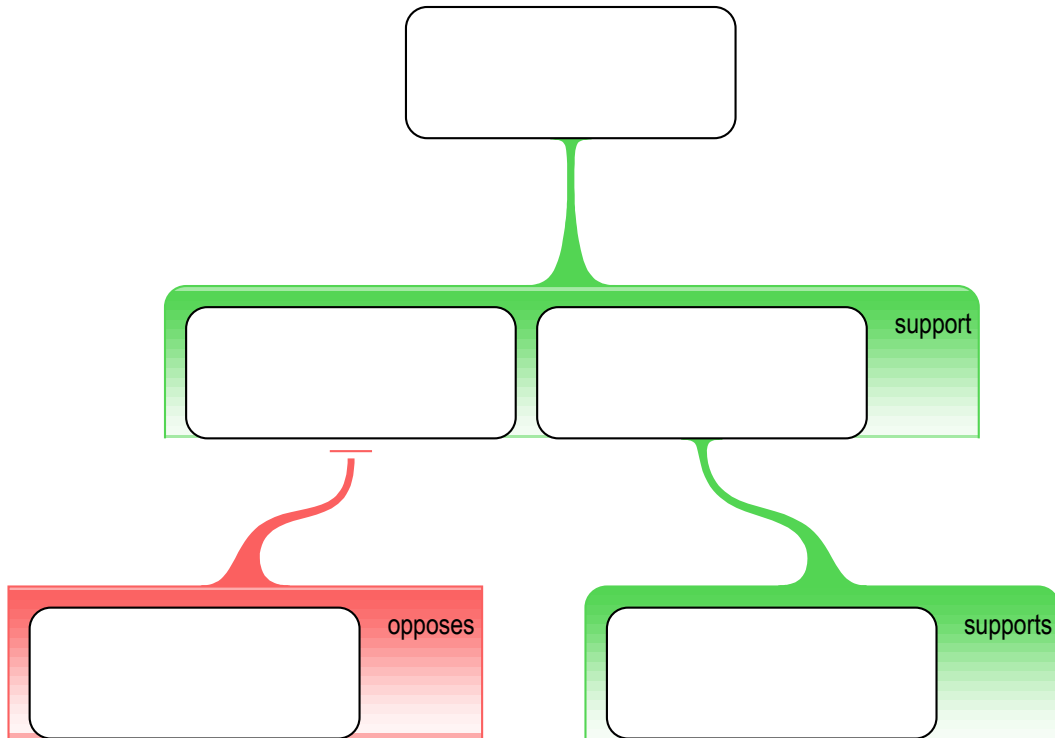


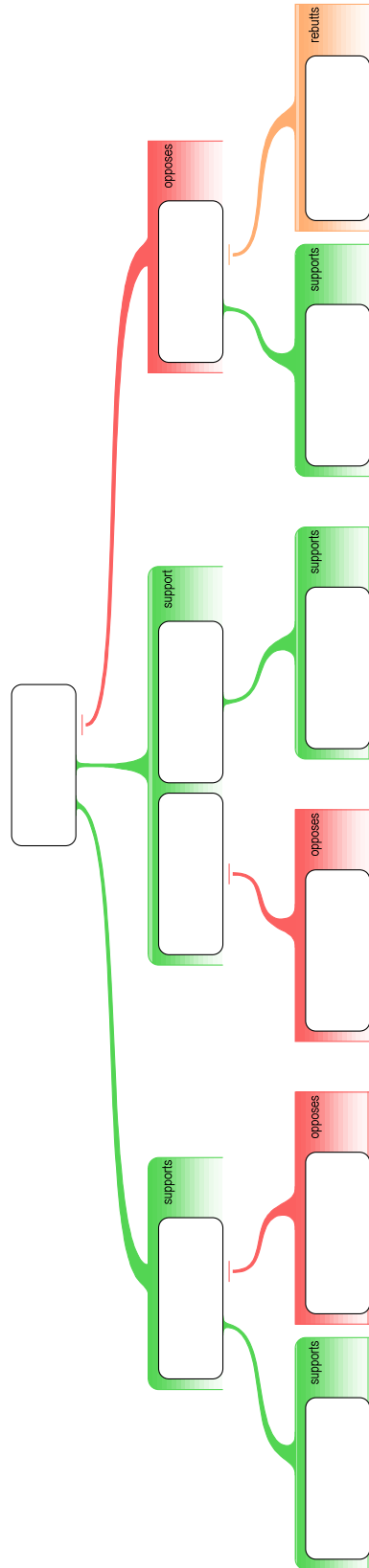












4. Rationale Assessment

4.1 How to assess an argument map

Assessment is a joy! Ok, I'm not completely serious – the truth is, it is quite a burden and represents a significant workload for teachers. The trouble with assessing “thinking” is that it goes on in the head and so is difficult to monitor, let alone assess. The great thing about grouping and reasoning maps is that they allow you to see what is occurring in a student’s thinking process. Thus we can ask questions and provide appropriate guidance in order that their thinking is logical and clear.

The **ASPIRE** acronym will assist your assessment because it focuses on the various elements of effective critical thinking. The following examples show how the ASPIRE rubric may be implemented with various tasks. The rubric also provides a checklist to aid in the planning of work in order that adequate provision is made for thinking tasks.

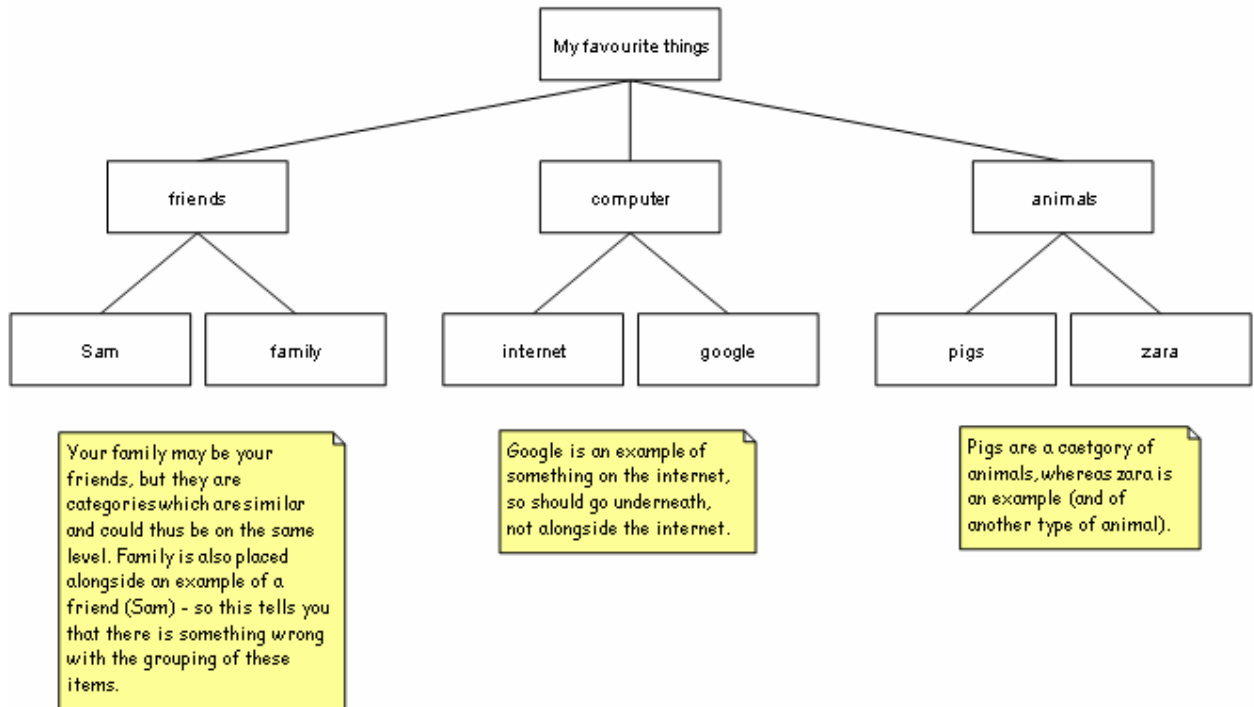
ASPIRE: Assessing Critical Thinking


Reflects the student's ability to...		Related terms
A Advocate	Clearly and effectively advocate a position or advance the position/s of others.	Argue Advance Persuade Select Conclusive Discuss Analyse
S Structure	Logically structure claims or ideas to illustrate the relationship to other claims or ideas.	Classify Abstraction Hierarchy Group Organise Categorise
P Present	Transfer the mapping skills to an oral presentation, report or essay.	Report Essay Write Communicate
I Inform	Be selective in the choice and range of information utilized.	Select Question Collate Organise Inquire Judge Collect Research
R Refine	Refine claims such that they are both clear to an audience and appropriate for the task of evaluation.	Simplify Clarify Declare Literal Precise Concise Unambiguous Emotionally measured
E Evaluate	Assess claims with respect to their truth and to their level of support they achieve for other claims.	Justify Judge Conclude Determine Consider Reflect

4.2 ASPIRE marking rubric

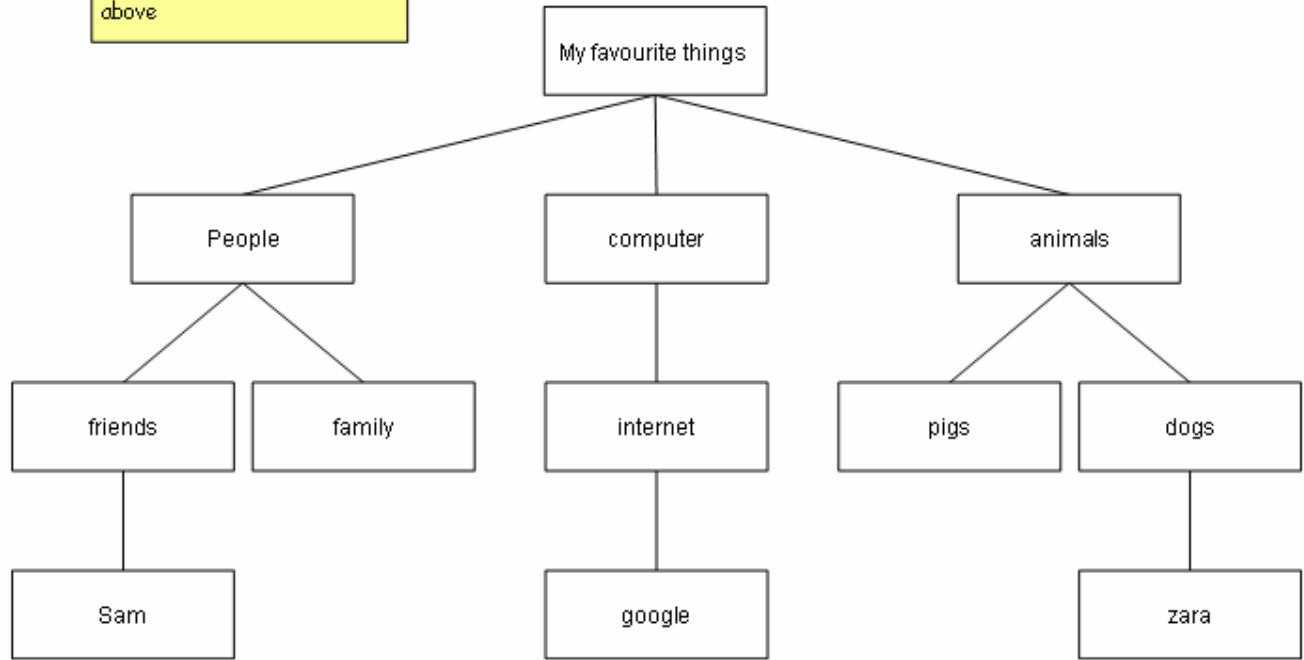
Criteria	Mark Allocation				
	5 Excellent work	4 Very Good work	3 Good work	2 Fair - needs some more practice	1 We need to go over this together.
A Advocate					
S Structure					
P Present					
I Inform					
R Refine					
E Evaluate					
Comments					

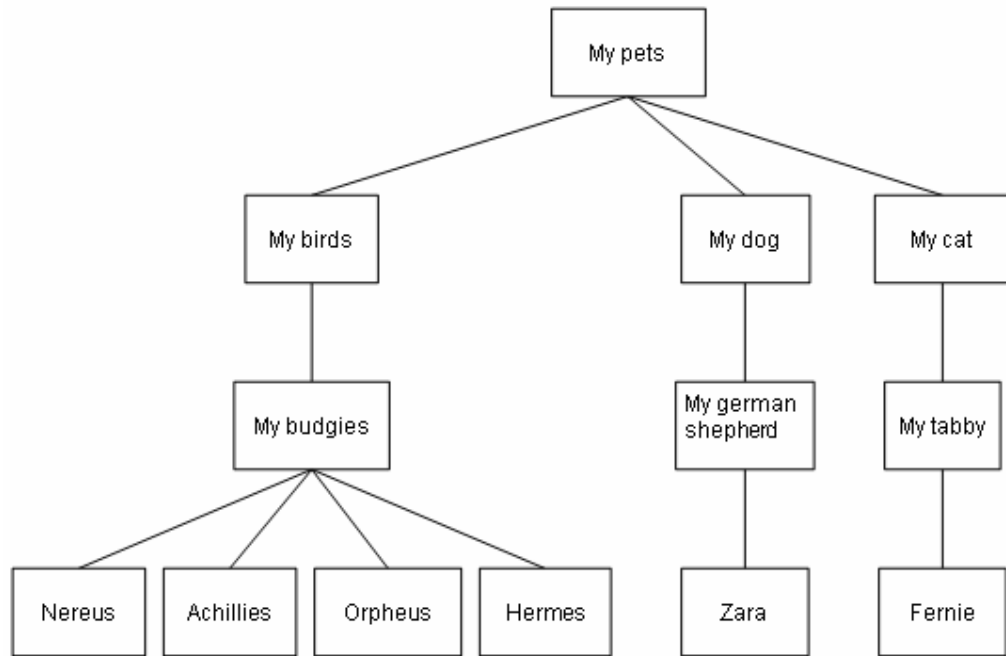
4.3 Assessment examples




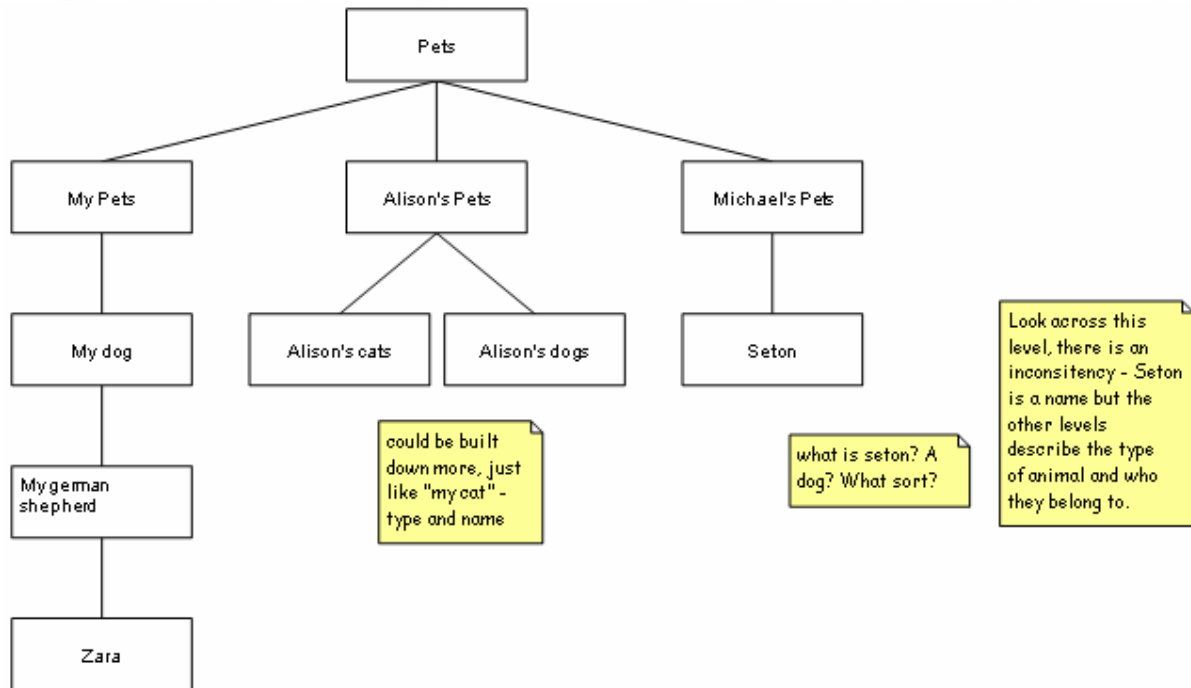
Criteria	Mark Allocation				
	5	4	3	2	1
	Excellent work	Very Good work	Good work	Fair - needs some more practice	We need to go over this together.
S Structure					
Comments	Lisa, a good effort though you could utilize more abstract in and concentrate on level consistency. See me to go through a model answer (below).				


Model Answer for the above

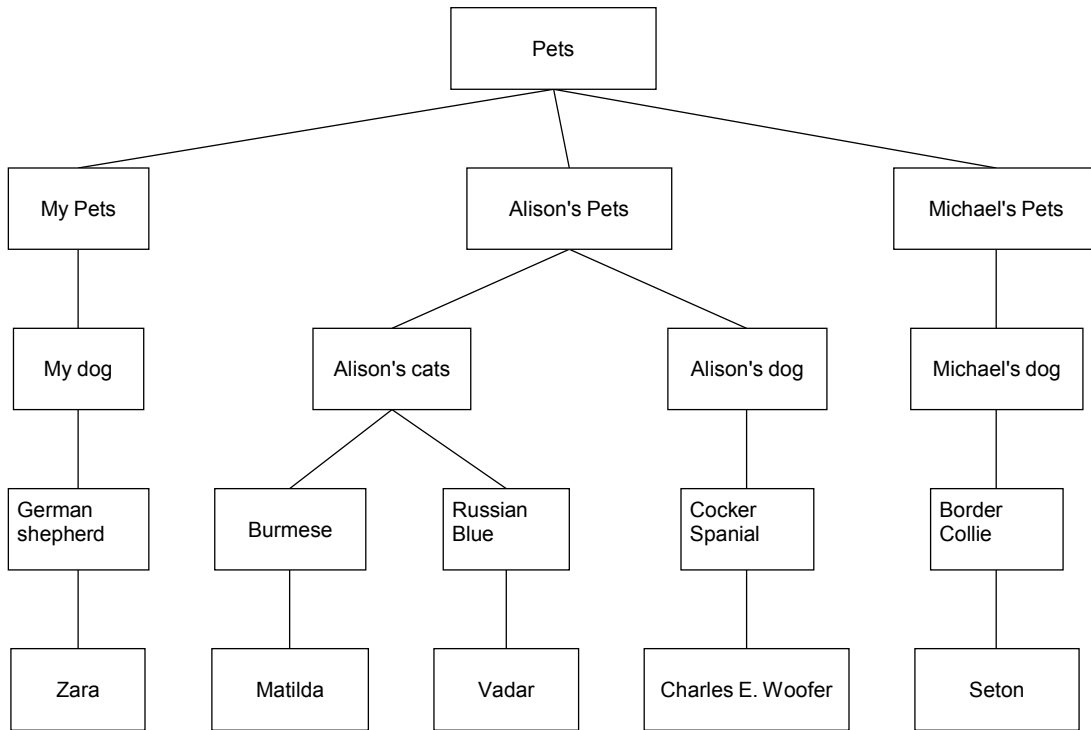


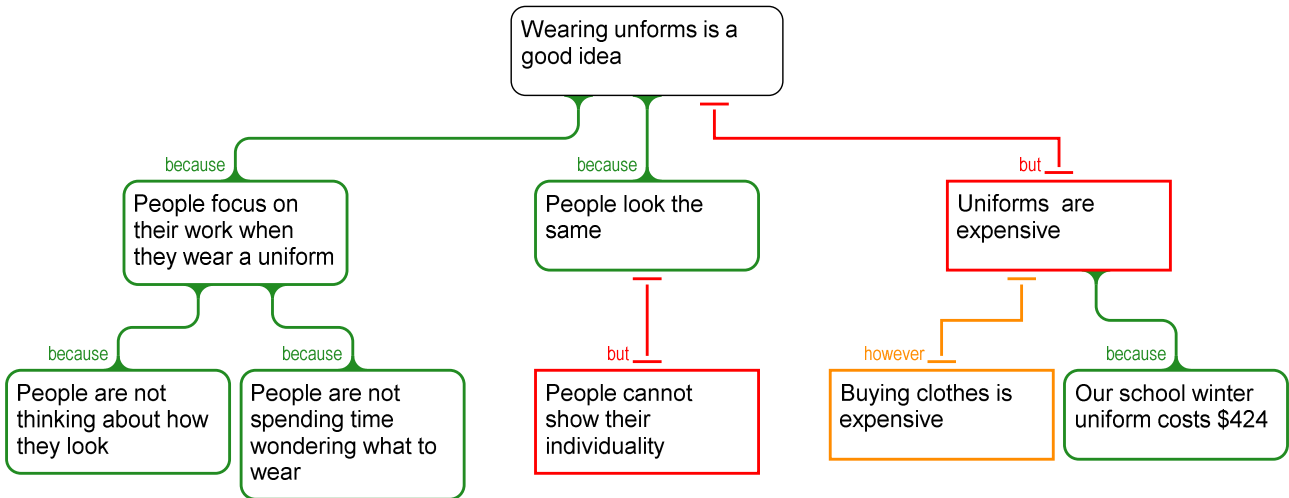


Criteria	Mark Allocation				
	5	4	3	2	1
	Excellent work	Very Good work	Good work	Fair - needs some more practice	We need to go over this together.
S Structure					
Comments	Richard, excellent work! You have created well structured groups that show how a general category is broken into smaller categories with the particular example on the bottom level. Well done! 5/5				

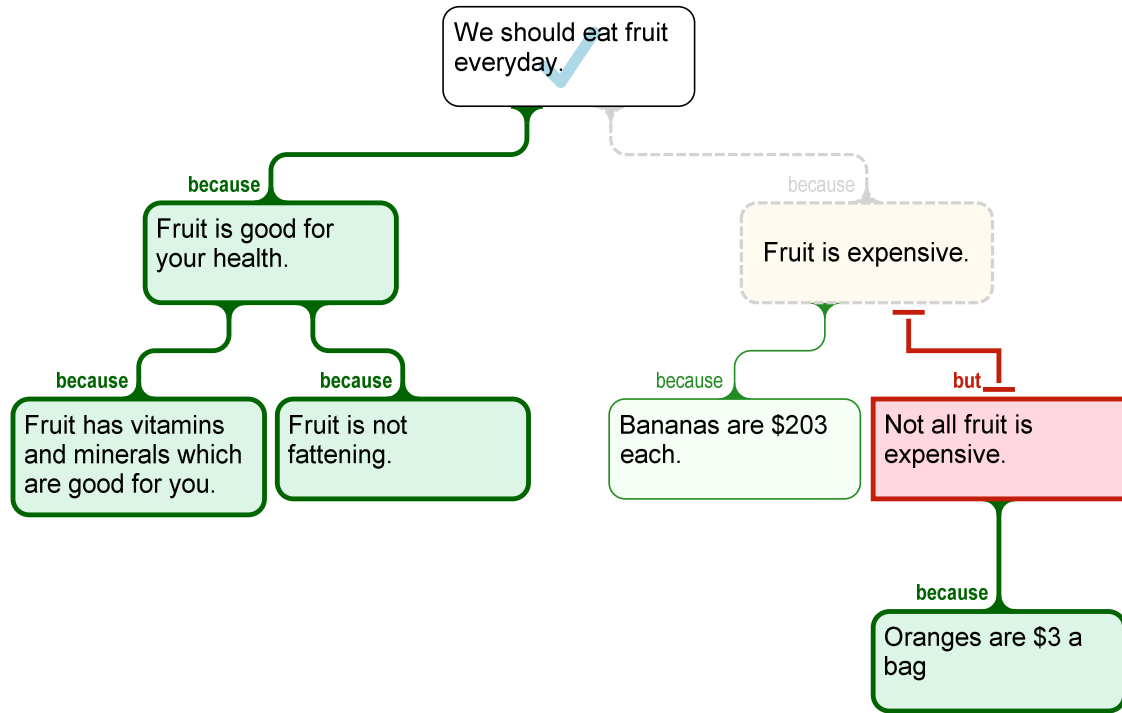


Criteria	Mark Allocation				
	5	4	3	2	1
	Excellent work	Very Good work	Good work	Fair - needs some more practice	We need to go over this together.
S Structure					
Comments	Lyn, you have undertaken a challenging grouping map and have done reasonably good work. The first group is very well done - you start with a general category and keep breaking it up into smaller categories until you get to the example - the name of your dog. The groups for other people's pets start well, though need to be developed - just like the "my pets" group. Try and create a pyramid structure and remember to look across the levels to see if they are consistent. I have attached a map of how you could do this. We'll try another one in class. <i>2.5/5</i>				





	Mark Allocation				
Criteria	5	4	3	2	1
	Excellent work	Very Good work	Good work	Fair - needs some more practice	We need to go over this together.
S Structure	<input checked="" type="checkbox"/>				
I Inform	<input checked="" type="checkbox"/>				
R Refine	<input checked="" type="checkbox"/>				
Comments	<i>Jessica, this is excellent work. You have structured the argument very well and provided a good range of supporting reasons and objections. You have also provided a range of relevant and appropriate information in clear sentences. Very well done! 15/15</i>				



I think that we should eat fruit everyday. I believe this because fruit is good for your health. This is because of two reasons, firstly that fruit has vitamins and minerals which are good for you and secondly because fruit is not fattening.

Some people think that we should not eat fruit everyday because fruit is expensive. They think this because bananas are \$2-3 each. This is right, but it doesn't mean all fruit is expensive because oranges are only \$3 a bag.

To conclude I think that there is a strong reason why we should eat fruit each day and that fruit is not always expensive. Therefore I accept that we should eat fruit everyday.

Criteria	Mark Allocation				
	5	4	3	2	1
	Excellent work	Very Good work	Good work	Fair - needs some more practice	We need to go over this together.
A Advocate	<input checked="" type="checkbox"/>				
S Structure	<input checked="" type="checkbox"/>				
P Present	<input checked="" type="checkbox"/>				
I Inform		<input checked="" type="checkbox"/>			
R Refine	<input checked="" type="checkbox"/>				
E Evaluate		<input checked="" type="checkbox"/>			
Comments	Chris, this is excellent work. You have advocated a position very clearly and logically. Your structure is correct and your presentation sets out the argument well. You provide good information - though perhaps some evidence of what vitamins and minerals are provided by fruit would be useful to strengthen your reason. The claims are full sentences and are clear and your evaluation is also good You are correct that you cannot make a generalization from one example - perhaps you could provide several counter examples of fruit that are not expensive. Great work! <i>28/30</i>				

5. Rationale Assistance

5.1 Glossary

Abstraction

Abstraction is the process of identifying and structuring concepts and their particulars. In a hierarchical structure, the higher levels represent more general or abstract concepts while the lower levels are concrete examples of the concept.

Argument

An argument is a structured set of reasons or objections bearing upon some claim.

Argument, Complex

An argument where there is more than one reason or objection bearing upon a claim.

Argument, Multi Layer

An argument where reasons or objections are themselves supported or opposed by further reasons or objections.

Argument, Multi Reason

An argument where there is more than one reason or objection bearing upon a claim.

Argument, Simple

An argument consisting of just one reason or objection bearing upon a claim.

Basis

A basis is a kind of support which is not itself a reason (though a basis can generally be converted into, or articulated as, a reason). A basis can be solid or shaky, as compared with a reason which can be strong or weak.

Case

A case is a set of reasons or objections within a complex argument, grouped together because they play a similar role (such as to support or oppose a position).

Case, Opposing

The opposing case consists of all reasons and objections whose role in the argument is to provide evidence in opposition to the position.

Case, Supporting

The supporting case consists of all reasons and objections whose role in the argument is to provide evidence in support of the position.

Claim

A claim is a statement that someone puts forward as true. In a reasoning map, a claim may be the position, a reason, an objection or a rebuttal.

Coherent Groups

Coherent or properly thought out and presented groups should be complete (no gaps), internally distinct (no overlaps), minimal (no outsiders) and ordered.

Conclusion

A conclusion, or contention, is a claim which is the central focus of an argument. It is the position for which reasons and objections are provided.

Congruence

A hierarchy is fully congruent when similar grouping principles are used throughout the hierarchy. Congruence has two aspects: horizontal and vertical congruence.

Contention

See conclusion.

Co-premise

A co-premise is any premise in a reason other than the main premise (the central and first claim).

Critical thinking

Critical thinking is applying those general principles and procedures of thinking which are most conducive to truth or accuracy in judgment.

Deductive

A deductive argument is one whose validity (if it is valid) is guaranteed by the formal structure of the argument.

Fallacy

A fallacy is a common pattern of reasoning which is usually, or at least often, poor reasoning. Many fallacies have been identified and given names.

Group

A group is a collection of items which belong together in some way.

Grouping

The process of forming or specifying groups.

Grouping principle

A grouping principle is an explicit statement of the essence of the group, i.e., the sense or respect in which the items belong together.

Hidden premise

A hidden premise is part of a reason which is not explicitly stated when an argument is presented, such as an assumption. A hidden premise is also a co-premise.

Hierarchy

A hierarchy is a nested structure of groups and subgroups, with all the children of an item constituting one group.

Hierarchical grouping

Hierarchical grouping is organising items and groups into hierarchical structures.

Inductive argument

An inductive argument is one which purports to extend our knowledge, i.e., to draw a conclusion which goes beyond the information contained in the premises. Typical inductive arguments involve some kind of generalisation.

Inference objection

An inference objection is an objection to an assumed or hidden claim that is not explicitly stated in a reason (eg. a hidden premise).

Item

An item is a broad term to represent anything you choose to put in a grouping box. For instance, these can be objects, ideas, categories, beliefs, plans.... whatever you need to group or categorize.

Main premise

A main premise is the most important claim in a reason or objection.

MECE

An acronym for "mutually exclusive, collectively exhaustive" - or "no gaps, no overlaps". MECE is a fundamental of properly formed groups.

Objection

An objection is a claim which provides evidence that another claim is false.

Path

A path shows you the connection of a line of argument. To "show path" select a box or claim and it will follow the line of argument from this point to the top or originating box.

Position

A position is the main point being advocated or considered. It can also be called the contention, the conclusion or the issue, depending upon your context.

Premise

A premise is a claim which is part of a reason or objection.

Reason

A reason is a claim which provides evidence that another claim is true.

Reason, Primary

Reasons are all claims that seek to show the truth of another claim. A primary or main reason is at the top level and seeks to provide evidence that the position or main point is true.

Rebuttal

A rebuttal is an objection to an objection. That is, it seeks to provide evidence that an objection posed by someone is actually false.

Syllogism

A syllogism is an argument made up of a single reason with two premises, bearing upon another claim, generally known as the conclusion.

Syllogism, Categorical

A categorical syllogism is one constructed from simple "categorical" statements, i.e., statements constructed using terms such as all, some and none.

Valid

A valid argument is one in which the premises guarantee the truth of the conclusion, i.e., if the premises are true, the conclusion *must* be true.

5.2 Feedback



[Feedback](#) is always welcome.

Teaching is a wonderful yet difficult profession. If there is anything we can assist you with, let us know – we aim to meet your needs and high expectations.

www.austhink.com

Some of our primary feedback....

I like rationale because it is a good way of listing information.

Fun, interesting, exciting.
great way to do homework (easier too 😊)

Things I liked

- the way they taught us how to group things properly
- it helped people with grouping for projects

I think that all teachers should use it (even the primary teacher)

its a great excuse to go on the computer

write essays quicker and help people to write essays

I liked the way it had different kinds of maps.

it is a good way to get ideas down

Its great and should be used in all Australian schools