

Mind and Argument Mapping

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Mind Maps?

- A visual way of taking/making notes and planning
- Show the big picture and how ideas are connected
- Clarify thinking, simplify complex ideas
- An effective memory tool
- Encourages creative thinking = more ideas



WHAT'S A MIND MAP?

AND WHY SHOULD I DO IT?

I'M SO GLAD YOU ASKED!

A mind map is a more visual way of taking notes and learning information. Mind maps contain words, colours, lines and pictures.

Mind maps can help clarify your thinking, simplify complex ideas, and memorise information more effectively.

Mind maps allow you to see the big picture and how different ideas are to connected to one another.

Finally, mind maps allow you to be creative. This makes it easier for you stay engaged with the course content.



What are Mind Maps?

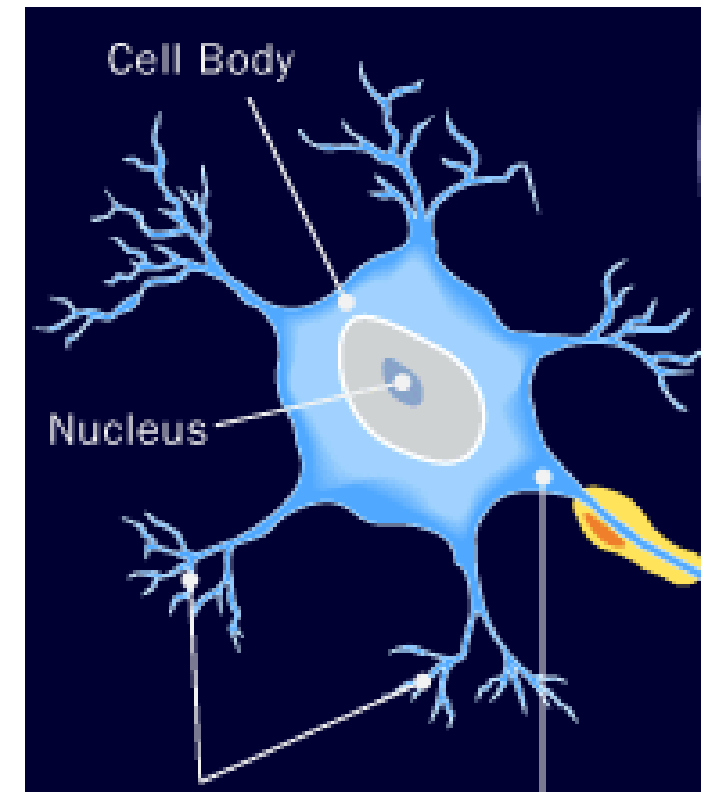
“Mind maps are a graphic, networked method of storing, organising and prioritising information using key or trigger words and images, each of which will ‘snap on’ specific memories and encourage new thoughts and ideas.”

Buzan, T. (2011)



Why are they so effective?

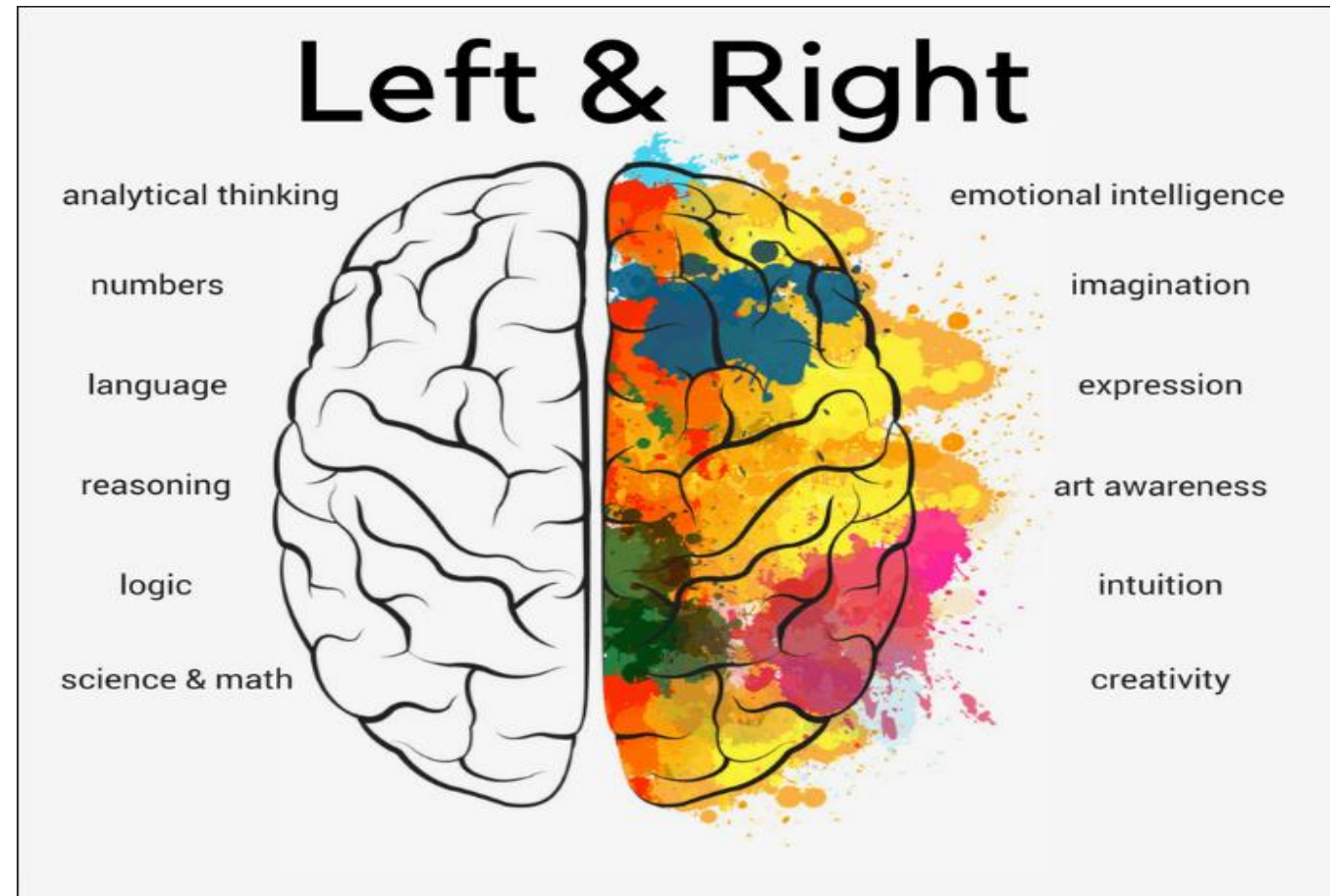
- Mind maps are particularly adaptive for reading, notetaking and revising for exams efficiently
- Mind maps are an effective way to improve learning and memory because they're more compatible with the way the brain functions.





Linear v Whole-brain thinking

- ▶ Your brain does not think in a linear way, it thinks in multiple directions simultaneously starting from central trigger points in Key Words and Key Images





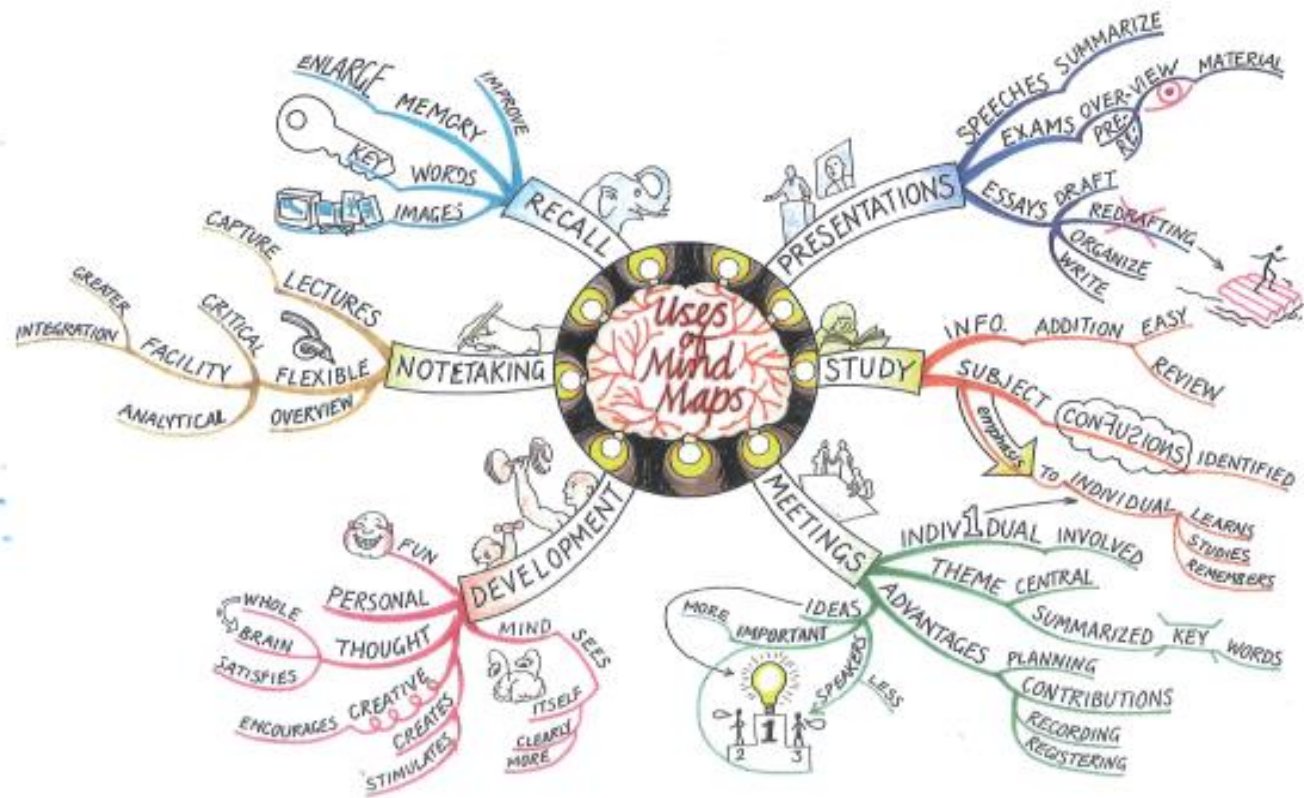
Key Words and Key Images

- A **Key Word** is a memory trigger
- Linked to a **Key Image** it stimulates both left and right brain functions
- This radiates connections and triggers recall of complete associated information
- The result is a significant increase in performance



Key Words and Key Images

- ▶ Pictures linked to Words stimulate both sides of the brain and involve all your senses
- ▶ This embeds information into your memory
- ▶ Imagination & Association = Memory



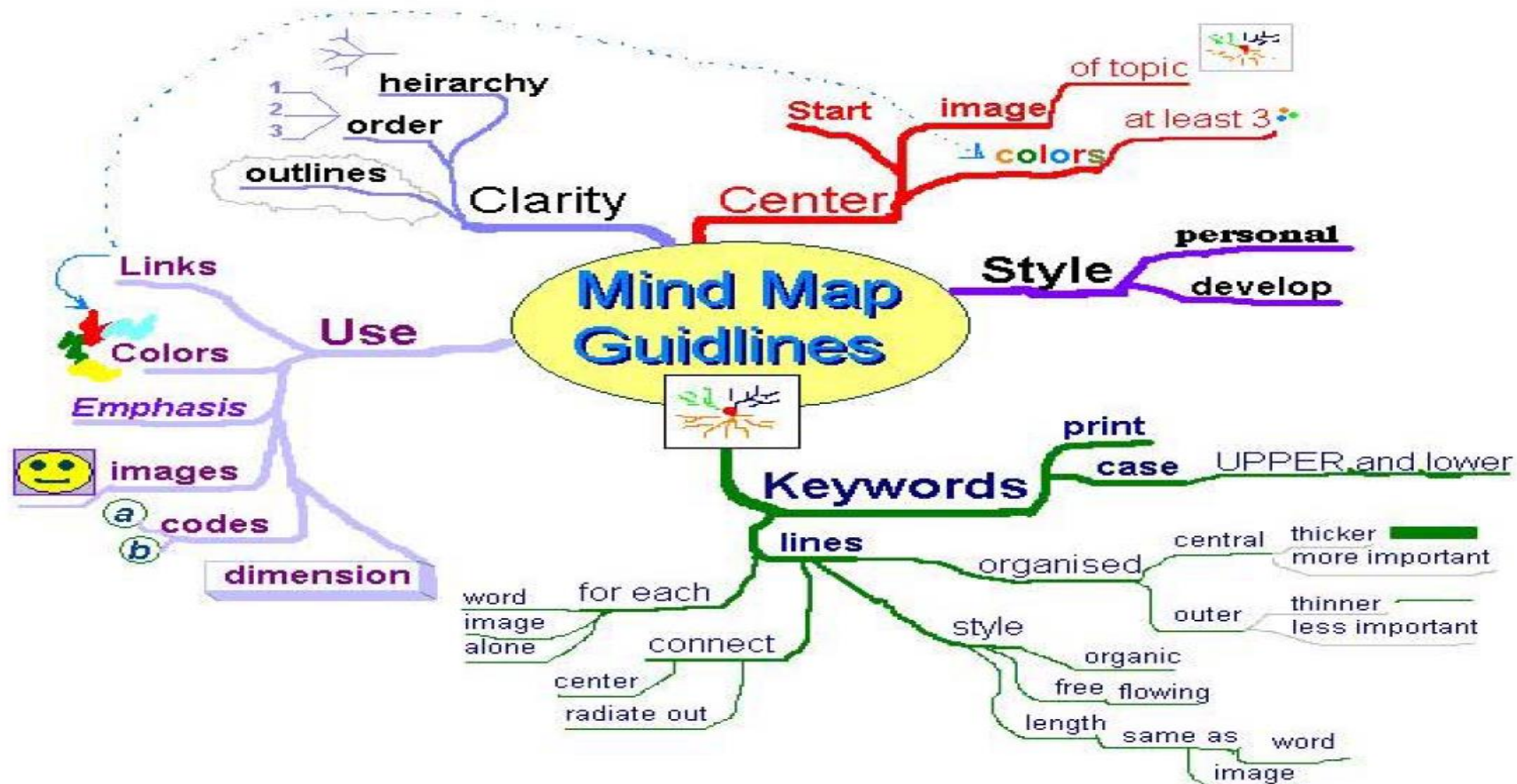


Mind Maps encourage:

- **Radiant Thinking** and **Connections**
- Ultimately we think in images and not in words
- Everyone uses radiant thinking to link Key Words with Key Images
- This is the basis for all our thinking and this is the basis of Mind Maps
- Mind Maps have been devised to enhance and increase your radiant thinking processes



How to Mind Map?





How to Mind Map?

- ▶ Use variations in the print line and image.
- ▶ Use images throughout the mind map.
- ▶ Organise the space around the branches.

Big-MEDIUM SMALL-teeny

SPACING TALL
SHORT

NOW

VERY UNHAPPY AFTERNOON

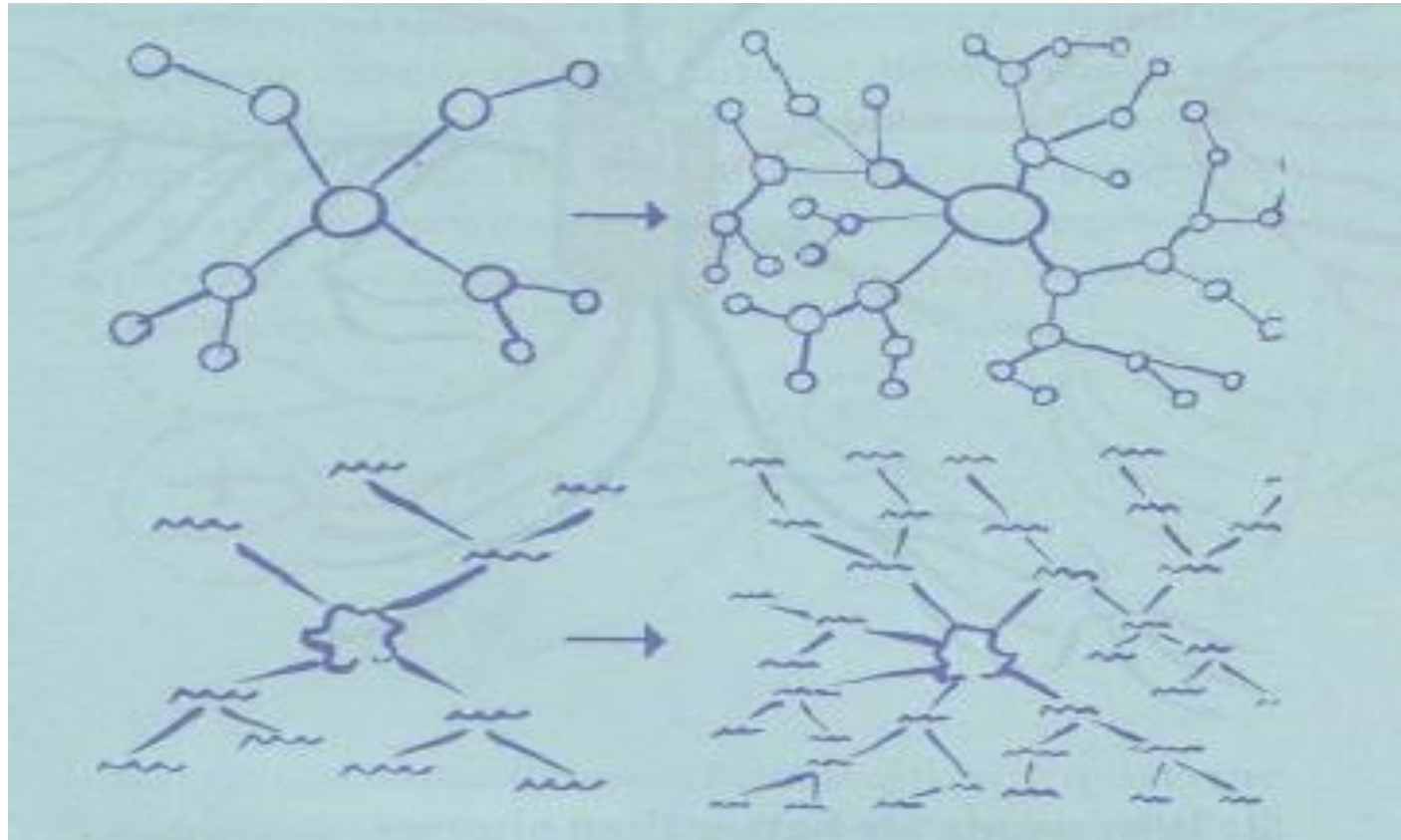
LINES THICKER
CONNECT
OUT-HUG

AFTERNOON UNHAPPY VERY

AFTER ☀️ 😊 ☹️ ILL FAILED NEWS bad



When is a Mind Map not a Mind Map?





How to Mind Map?

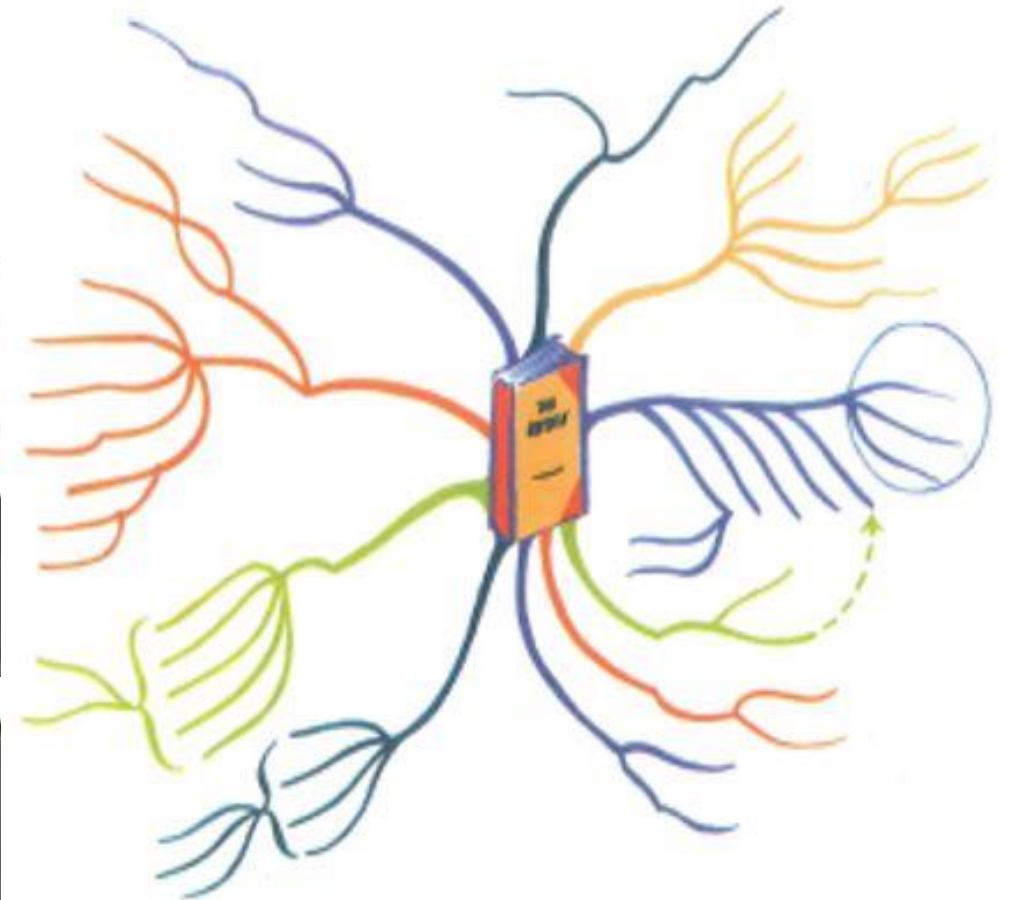


* TIP : MAKE SURE YOUR BRANCHES ARE CURVED. THE HUMAN BRAIN RESPONDS BETTER TO CURVED LINES THAN STRAIGHT LINES.

THE BRAIN IS ALSO STIMULATED BY THE USE OF COLOUR, SO USE AS MANY DIFFERENT COLOURS AS POSSIBLE ON YOUR MIND MAP.

THE ACT OF CREATING A MIND MAP HELPS YOU UNDERSTAND THE SUBJECT AT A DEEP LEVEL. IT ALSO HELPS YOU TO ORGANISE AND CLARIFY YOUR THOUGHTS.

LEARNING TO MIND MAP IS LIKE LEARNING TO DRIVE A CAR.





Happiness





Note-taking

“over 90% of written notes taken by students are superfluous, because your brain naturally prefers Key Words”

Buzan, T. (2011)

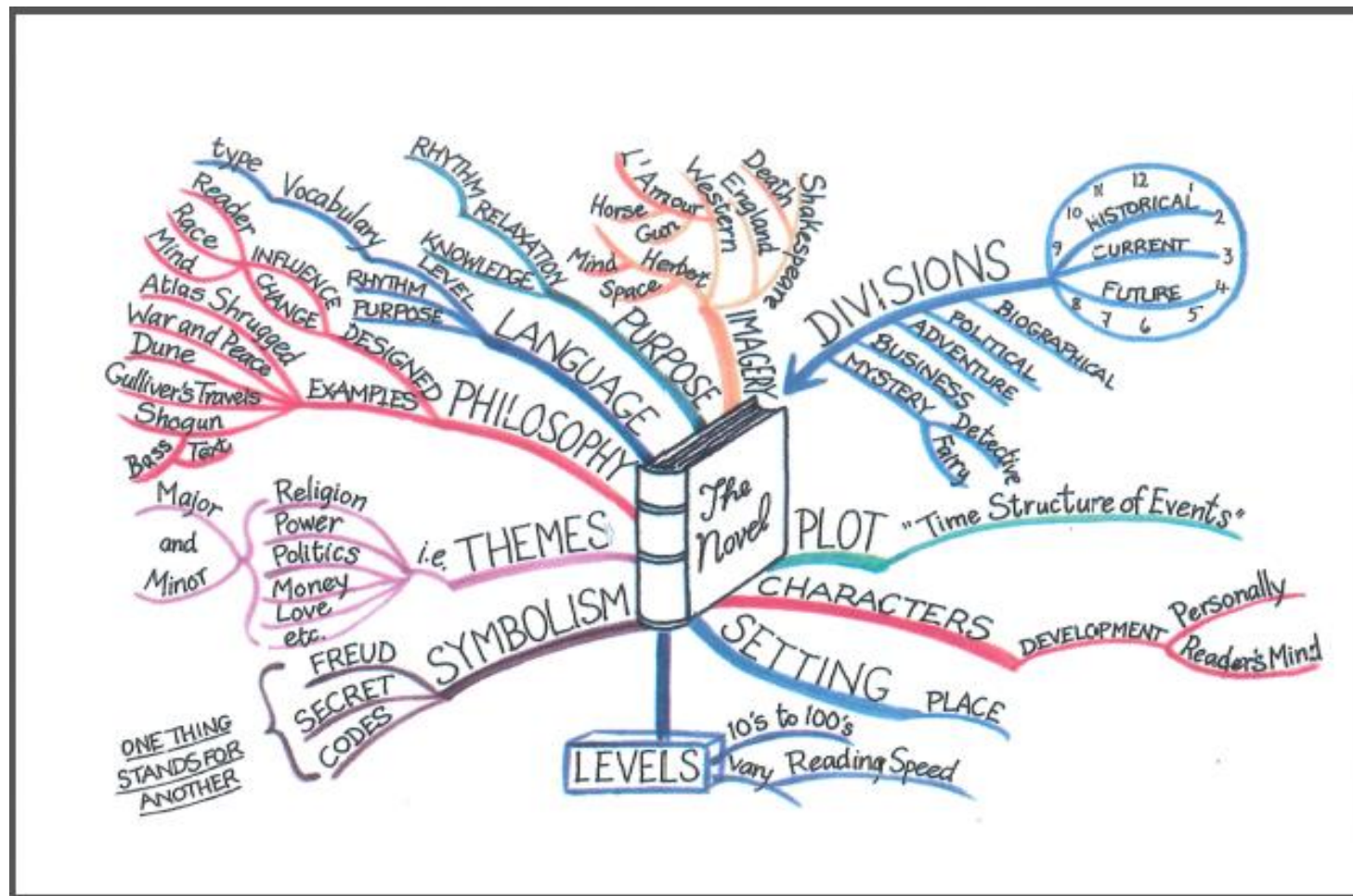
TWO COLUMN (CORNELL) NOTE TAKING SYSTEM EXAMPLE

Date: 09 Mar 2015
Module: Dyslexic Study Skills
Subject/Topic: Note taking and making

Recall Column	Note Taking Column
Reduce main points to key points and cues for reciting, reflecting and reviewing	Record facts and ideas (as fully as possible) Use abbreviations, symbols, diagrams, etc. Write as clearly as you can
DIFFICULTIES	Performing no. of different tasks at once: what to note down or omit; identifying key points
DIFFERENCES BTWN	TAKING - SPEECH - Lectures, video, etc. MAKING - TEXT - book chapters, rewriting notes
IMPORTANCE!	Academic Success @ 333 Essays, Exams (revision)
PURPOSE	Engage with material; help with essays; formulate ideas; make sense of material; revisor; review/reformulate ideas
LEARNING STYLES (x3)	Visual Mind Maps™; colour; diagrams; wall charts Auditory Record; discuss; listen 4 clues/signal words Kinaesthetic Combinations of above
STRATEGIES (multi-sensory)	Advance prep / punctuality / always attend class / key words & phrases / loose-leaf notepads / label notes / refs in margin / omit (a, an, the) / abbrevs & s/hand / Mind Maps™ / highlight / copy from boards & OHPs / use handouts / write 1 side of paper / use dictionary (making) / listen to end summary / use tech if poss / ASAP - write up & talk about afterwards/ p/copy other notes
METHODS	CORNELL - 2 column, Q NOTES - Q-uestion & Q-uiz, 4 QUARTER, MIND MAPS™, LINEAR a) subheadings; b) key points; c) lists
TECHNOLOGY (Aid not substitute!!!)	Recording devices, laptops, note taking Apps
SUMMARY: -	

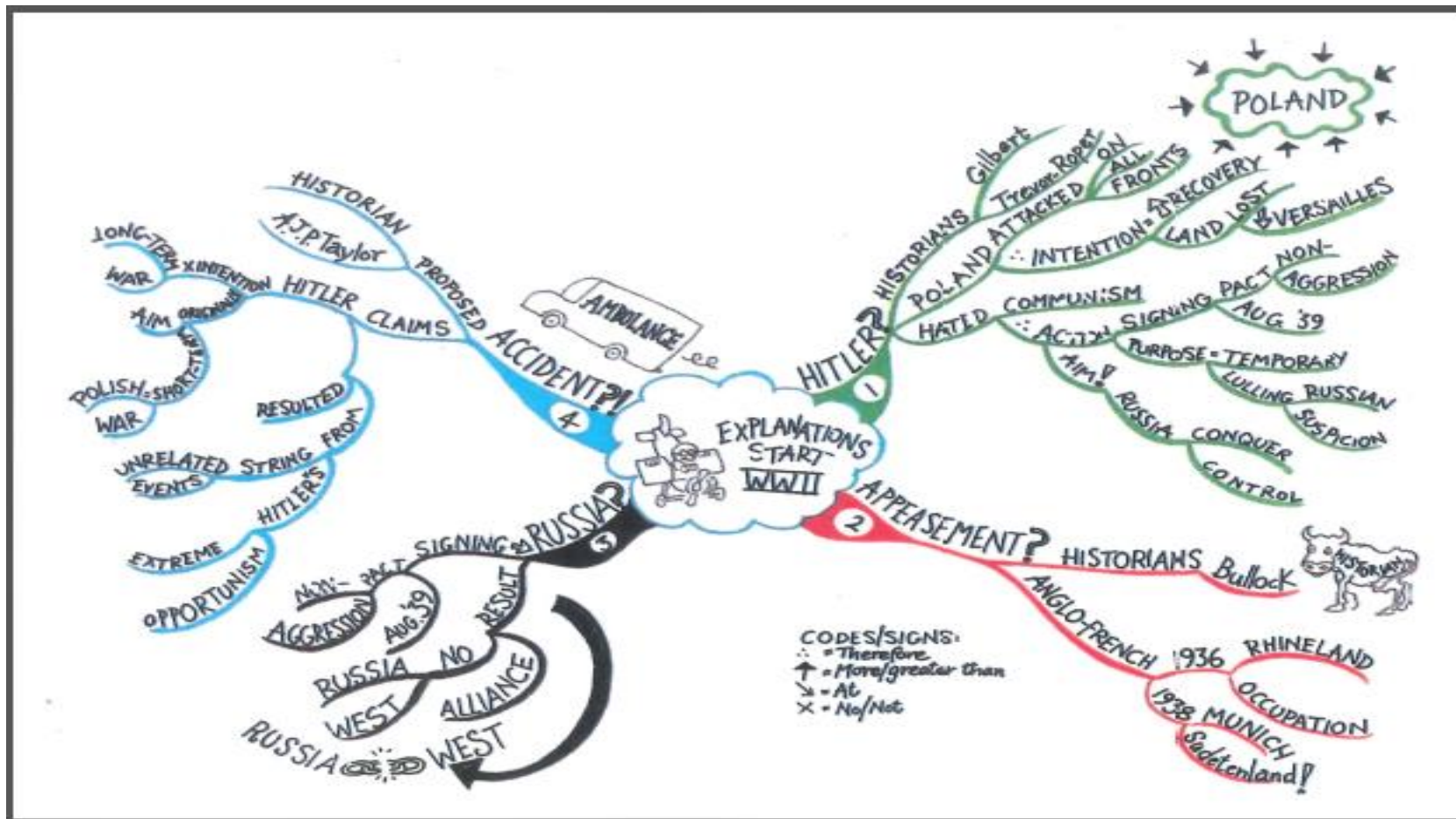


Revision Mind Maps by Students



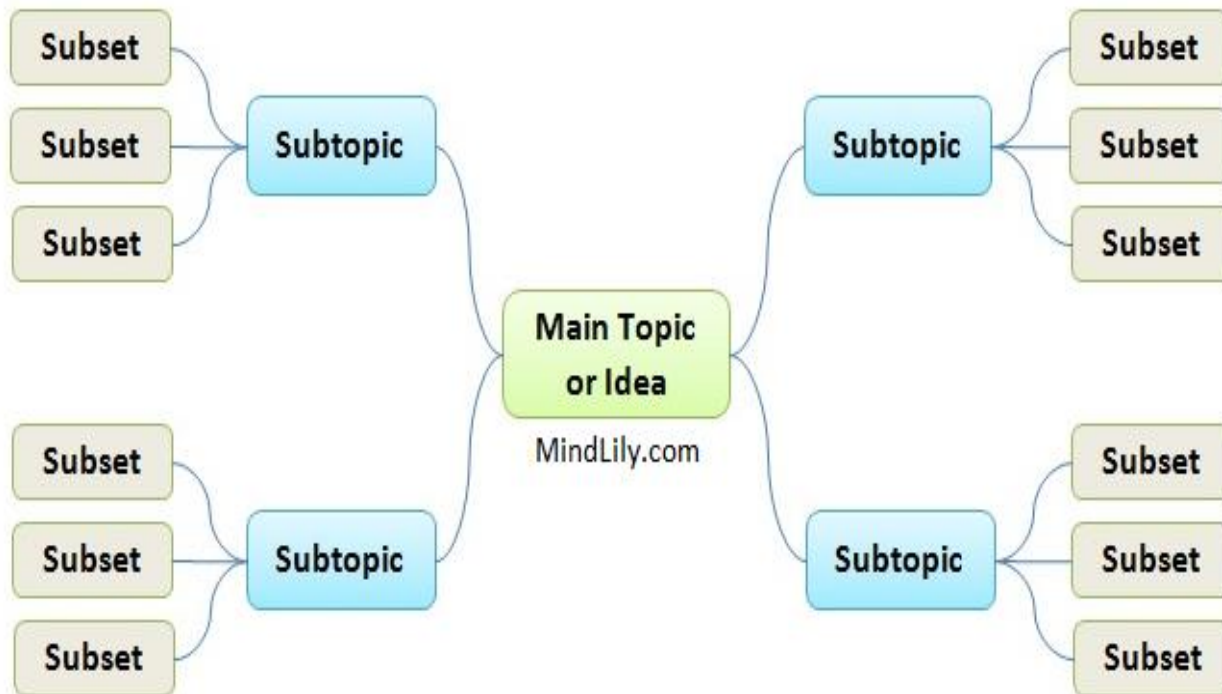


Revision Mind Maps by Students





Hand-drawn v Computerised Maps



Mind Master: Tony Buzan - iMindMap
program Edraw:

www.edrawsoft.com/download-mindmap.php

MindMapfree: mindmapfree.com

www.matchware.com MindView

<https://www.inspiration-at.com/>

www.mindmeister.com

www.mindmup.com



MindView

MindView AT has been designed to help visual thinkers create impressive written assignments and presentations. The smooth transition from a Mind-Map to Word and PowerPoint means students can make powerful, formatted documents ready for assessment

- Exports to Word and PowerPoint
- Built-in Citation and Referencing Tool
- Timeline and Gantt view for Project Planning
- Text-to-speech
- Dragon Integration with Native Commands

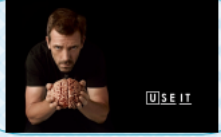




MindMaster

MindMaster is a cross-platform mind mapping software, which has various themes and multiple functions to help users create content-organized and style-rich mind maps for a variety of purposes like brainstorming, project management, knowledge management, business presentation





Summary

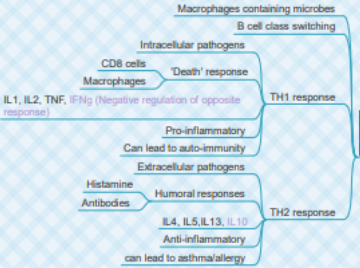


Virally infected cells
Some cancer cells
Have critical interactions for determining the type of adaptive response

Directly kill specific target cells
Natural Killer Cells



Fc region of antibody attracts NK cells and phagocytes



Helper T cells (CD4+) activate other cells

Kill cell expressing recognised antigens

Normal cells containing viruses

Mutated/ Cancerous cells

Cytotoxic T cells (CD8+)



To proteins

Intracellular pathogens and phagocytosed material

Cell mediated response

T cells (thymus)

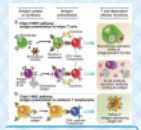
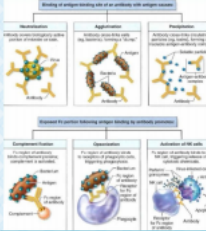
Humoral Response

B cells (bone marrow)

Key cells involved in the adaptive immune response (2% circulating and rest in lymphoid tissues)

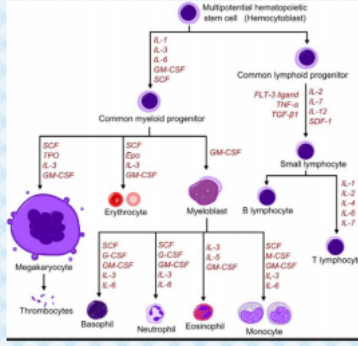
Proteins, carbohydrates, nucleic acids

extracellular pathogens



(Lymphocytes)

White blood cells



Granulocytes

Neutrophils

Eosinophils

Basophils

- 50-70% of circulating blood cells
- Short life span (1-2 days)
- First cells to reach site of inflammation
- Leave the circulation on damage/infection
- Phagocytosis and hydrolytic enzymes
- Major component of pus
- 1-3% of circulating WBCs
- Found mainly in tissues
- Parasite response
- Allergic reactions
- Degranulation is main physiological mechanism
- Able to phagocytose material in vitro
- Have a half life of 2.5 days
- Account for 0.2%-1% of circulatory leukocytes
- Morphologically similar to mast cells with purple staining granules containing histamine, heparin and pro-inflammatory factors
- Important in type 1 hypersensitivity reaction



Monocytes



- Derived from monocytes (1-10% of circulating WBCs)
- Fixed macrophages in Lungs, liver, bronchi
- wandering macrophages roam in tissues
- Phagocytosis
- Process and present antigens
- Large variety of surface markers for interaction with other immune cells
- Act as the gateway to adaptive response
- roam freely throughout tissues and organs
- Recognise and phagocytose pathogens
- Become effective antigen presenting cells



TABLE II—SUMMARY OF CLINICALLY SIGNIFICANT NSAID DRUG INTERACTIONS

DRUG	MECHANISM	EFFECT
Anticoagulants	Displacement/additive effect	Increased anticoagulant activity via displacement. Also, some NSAIDs affect platelet function.
Lithium	NSAIDs inhibit renal elimination of lithium	Elevated serum lithium levels
Antihypertensives	NSAIDs may cause fluid retention and edema	Decreased antihypertensive effects

Properties	Aspirin	Paracetamol
Chemistry	Aromatic ester of acetic acid	An acetanilide derivative
Mechanism of action	Irreversible inhibitor of COX-1 and COX-2	Selective inhibitor of COX-3
Absorption	<ul style="list-style-type: none"> From upper GI 70 % Bioavailability 	<ul style="list-style-type: none"> Upper GI 70-90 % Bioavailability
Metabolism	By the esterases in the gut wall and the liver	Liver
Excretion	Renal	Renal
Toxicity	<ul style="list-style-type: none"> GI upset Hepatic/renal impairment Reyes syndrome in children 	<ul style="list-style-type: none"> GI upset Thrombocytopenia Liver necrosis

Aspirin

MOA

- irreversibly inhibit COX enzyme
- Blocks production of thromboxane
- TXA2 synthesized in platelets and PGI2 in vascular endothelium
- when aspirin inhibits COX, platelets can't regenerate PGI2
- this creates relative excess of PGI2 inhibits platelet aggregation
- if no further aspirin is given, this lasts for 7-10 days until a new cohort of platelets is produced

Pharmacokinetics

- Half life less than 30 min
- rapidly hydrolysed in plasma to salicylate
- absorbed from stomach converted to salicylate acid in gut, liver, plasma
- 80-85% bound to plasma
- crosses placenta and CSF

Metabolic effects

- increased cellular metabolism
- Increased utilisation of glucose, reducing blood sugar

Respiratory effects

- direct stimulation of resp centre
 - leads to hyperventilation (occurs due to uncoupling if phosphorylation)
 - increase in CO2 in overdose cause of death
 - resp alkalosis renal compensation
- decrease in BP, resp acidosis + metabolic acidosis

Haematological

Thromboxane A2

Overdose

Most common

- Hyperventilation
- Resp alkalosis

metabolic acidosis follows

- increased anion gap
 - accumulation of intracellular lactate
 - excretion of bicarbonate by kidney to compensate for resp alkalosis
- results from

Mild signs

- Nausea and vomiting
- Tinnitus
- deafness
- lethargy or dizziness

moderate to severe signs

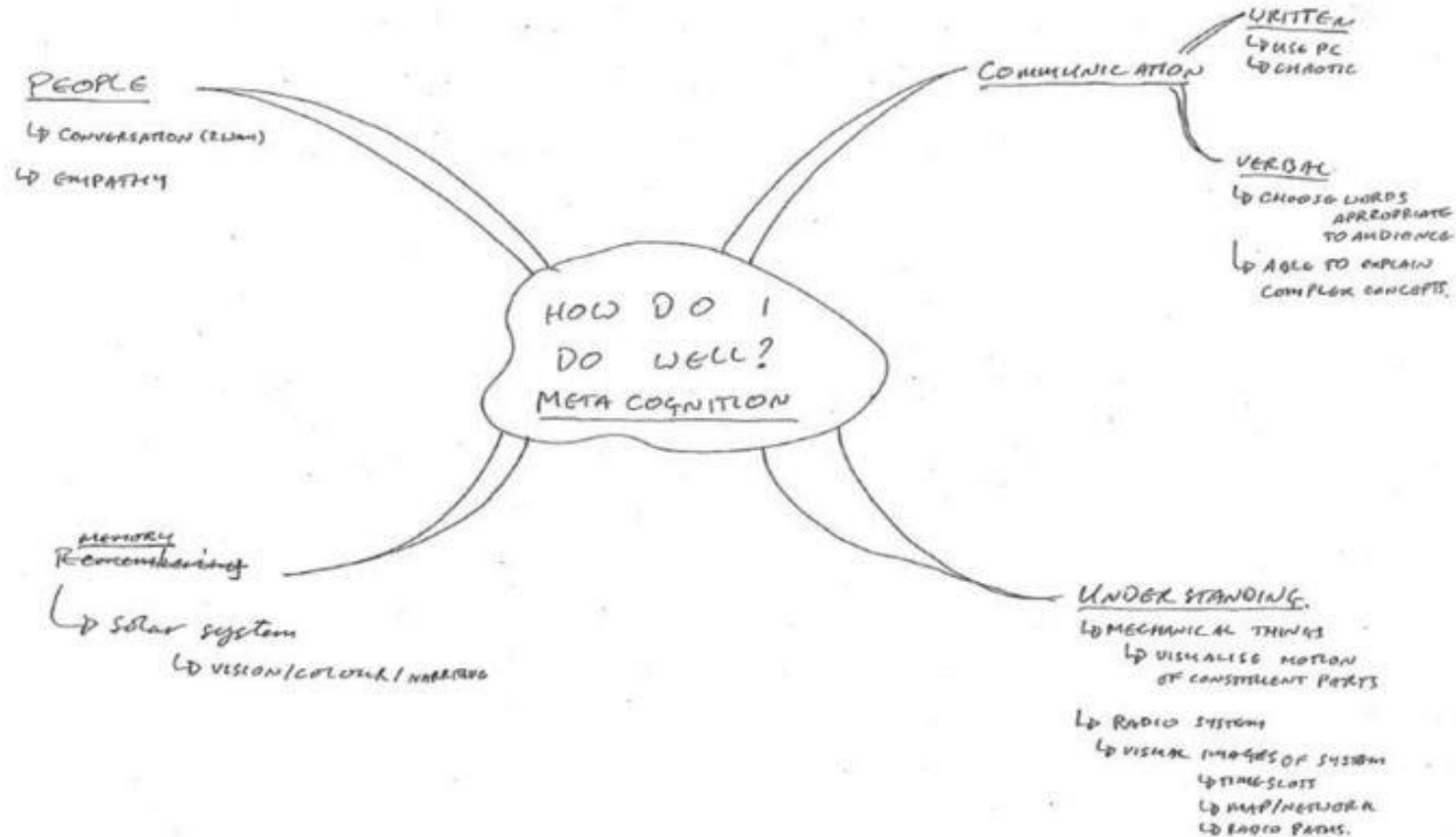
- dehydration
- restlessness
- sweating
- warm extremities

REYE syndrome

- children 4-12 years
 - encephalopathy
 - liver disease
 - history
 - examination
 - diagnosis based on
 - NO ASPRIN FRO KIDS
 - medical emergency
- presents with

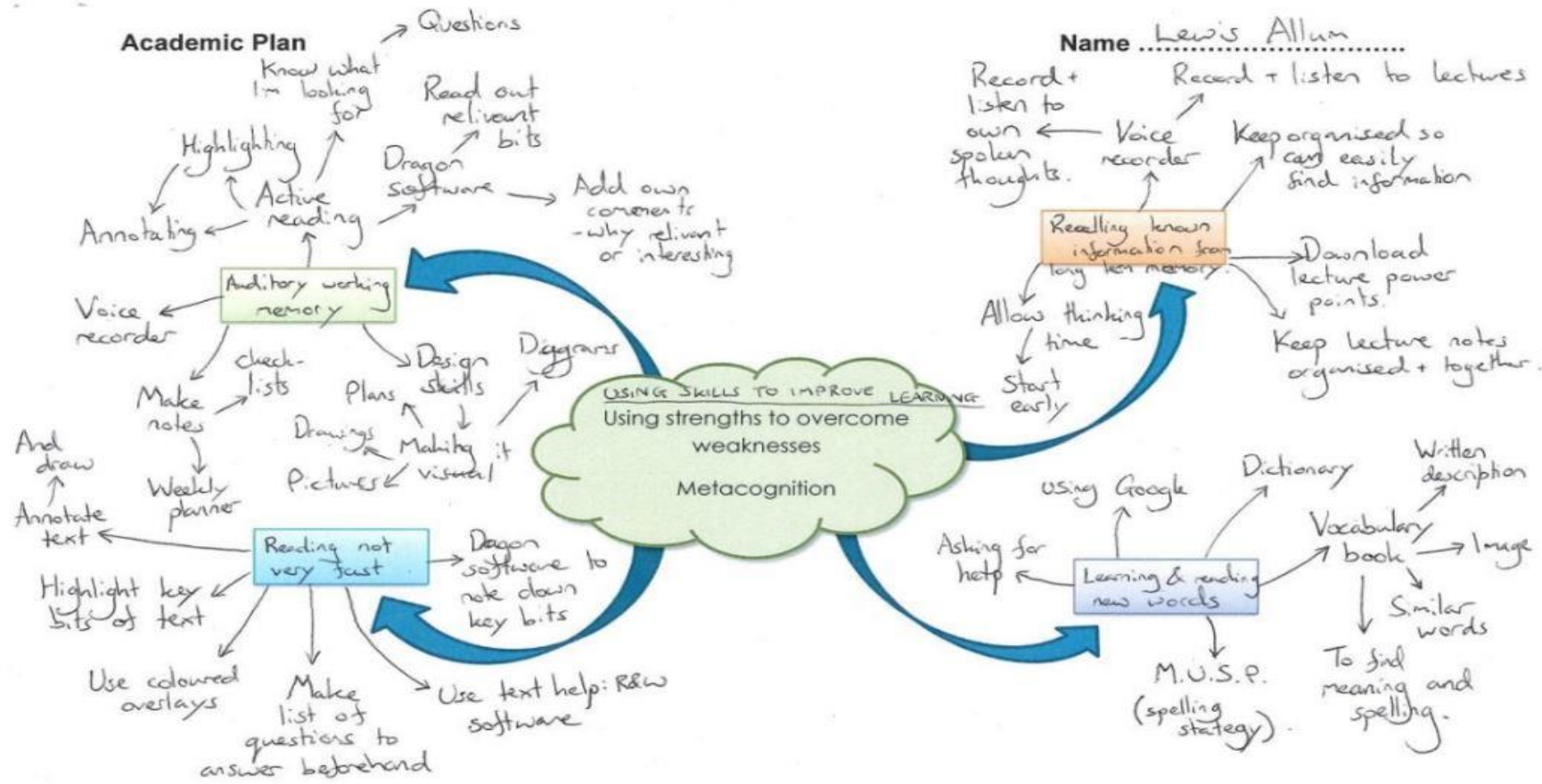


Metacognition Mapping





Strengths to overcome weaknesses



BIG PICTURE

✘ Imagining a design object

✘ Brainstorming ideas
(seeing connections)
in diagrams and mind maps

✘ Identifying salient patterns in data

✘ Chairing a debate

✘ Summarising/synthesizing
ideas in an essay

✘ Translating

✘ Writing about an artwork

**NON-
VERBAL
visual/
spatial/
numeric**

✘ Film editing

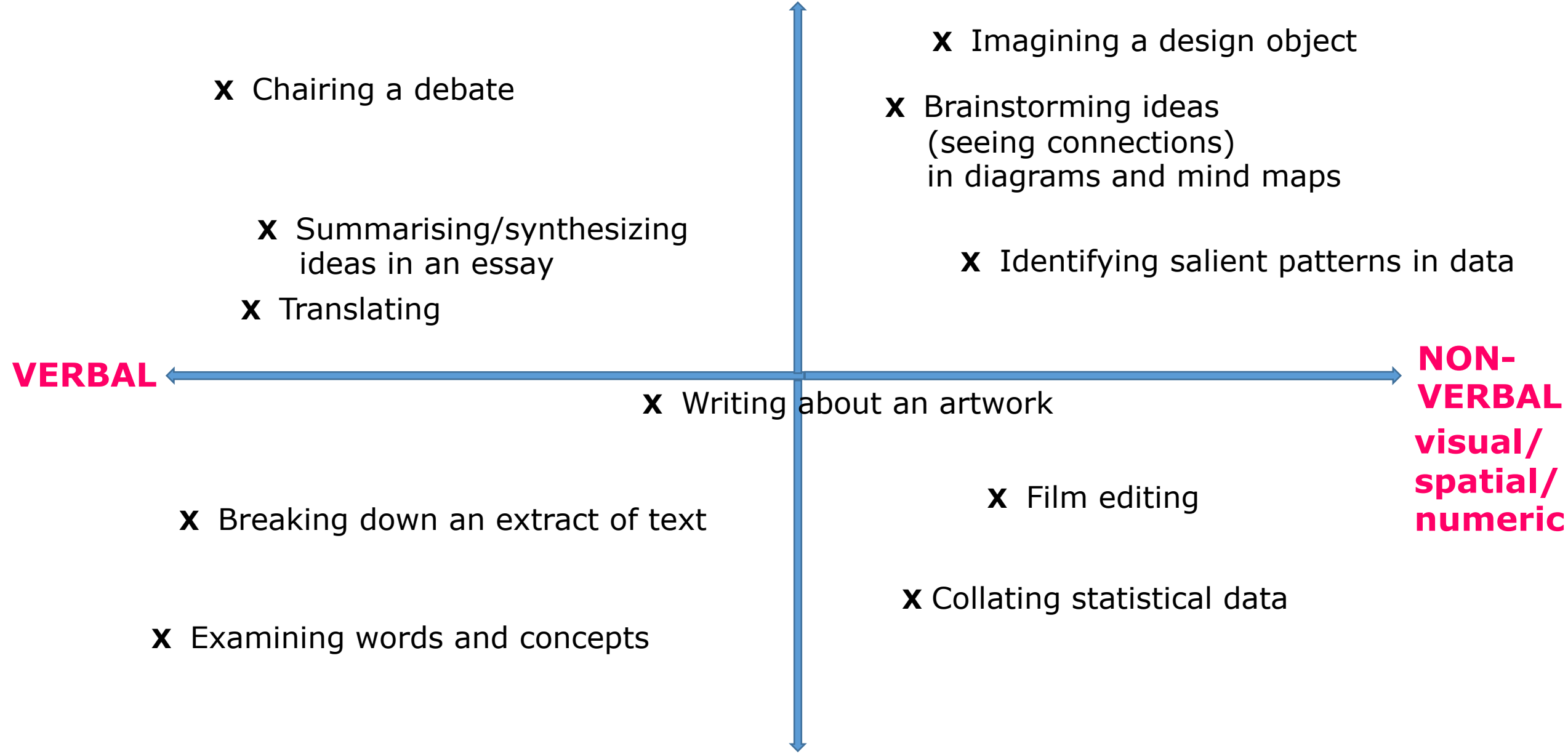
✘ Collating statistical data

✘ Breaking down an extract of text

✘ Examining words and concepts

DETAIL

VERBAL



INTERACTIVE/OUTGOING

✘ Music student who loves improvising with other musicians

✘ Politics student who loves a good debate

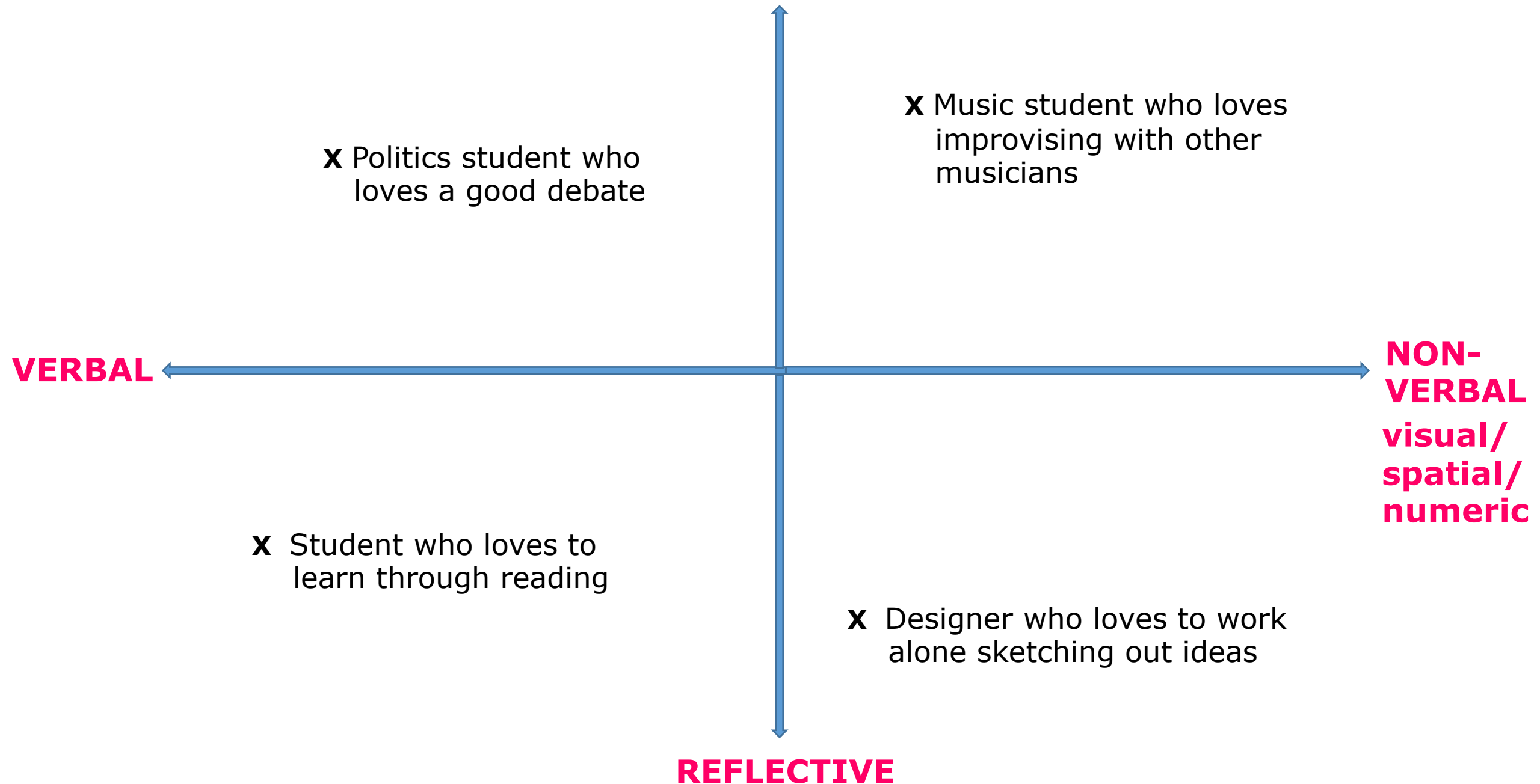
**NON-
VERBAL
visual/
spatial/
numeric**

VERBAL

✘ Student who loves to learn through reading

✘ Designer who loves to work alone sketching out ideas

REFLECTIVE

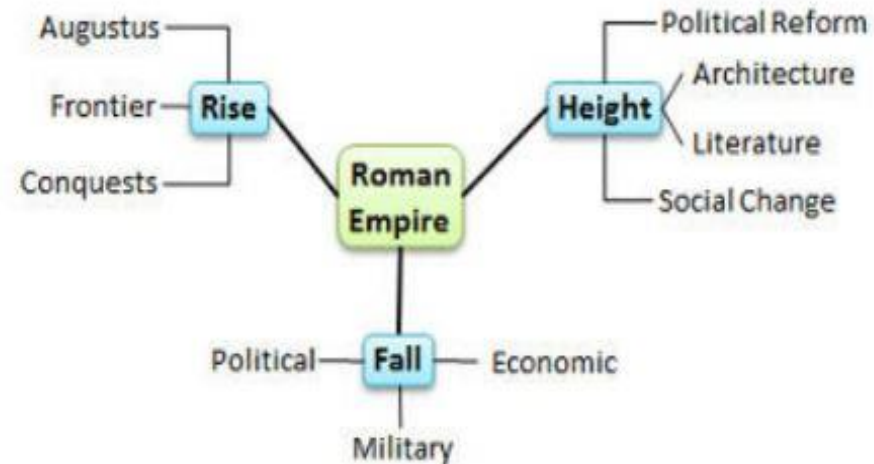




Mind Maps for Note-taking

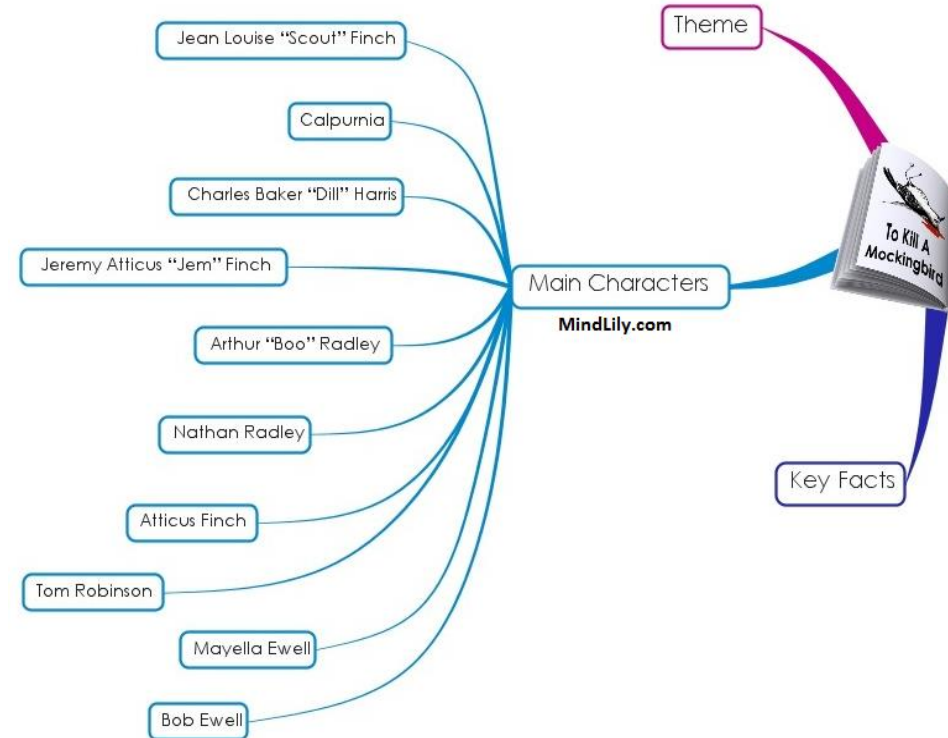
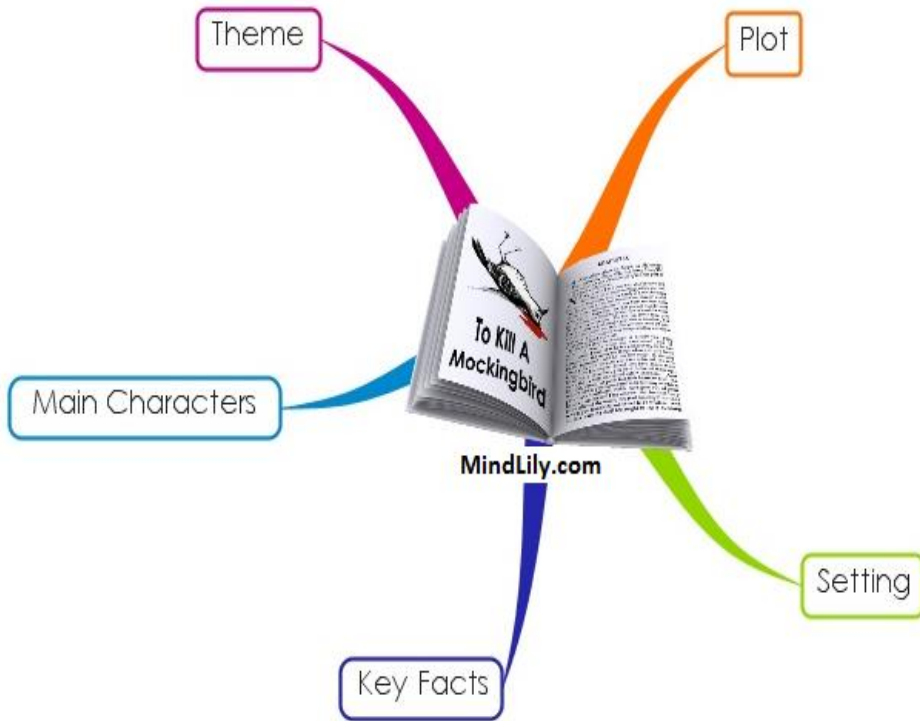
Roman Empire

- I. Rise of the Empire
 - a. Augustus
 - b. Conquests
 - c. Frontiers of the Empire
- II. Height of the Empire
 - a. Political Reform
 - b. Architecture
 - c. Literature
 - d. Social Change
- III. Fall of the Empire
 - a. Economic Reasons
 - b. Military Reason
 - c. Political Reasons



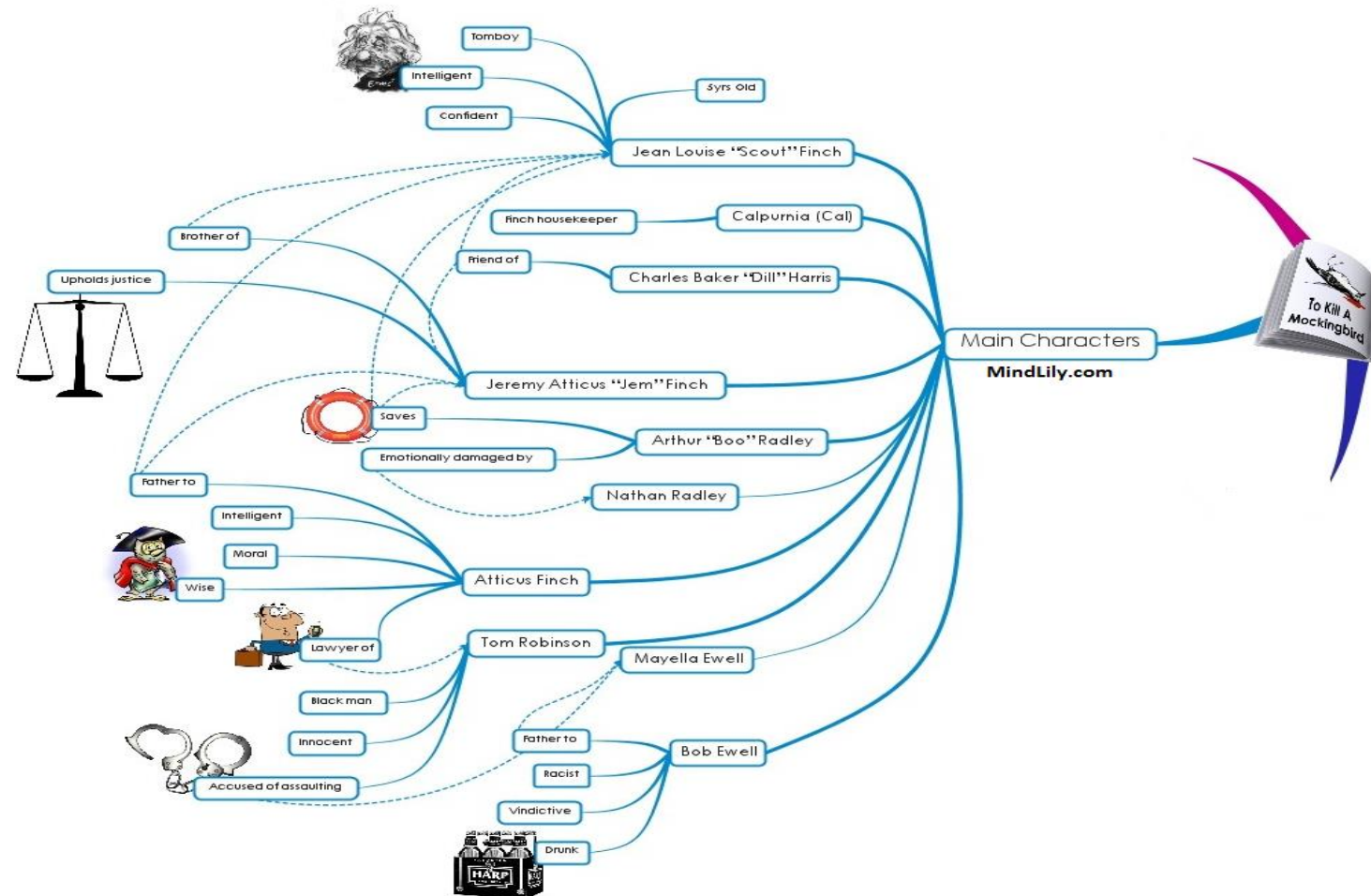


Mind mapping for Note-making





Mind mapping for Note-making



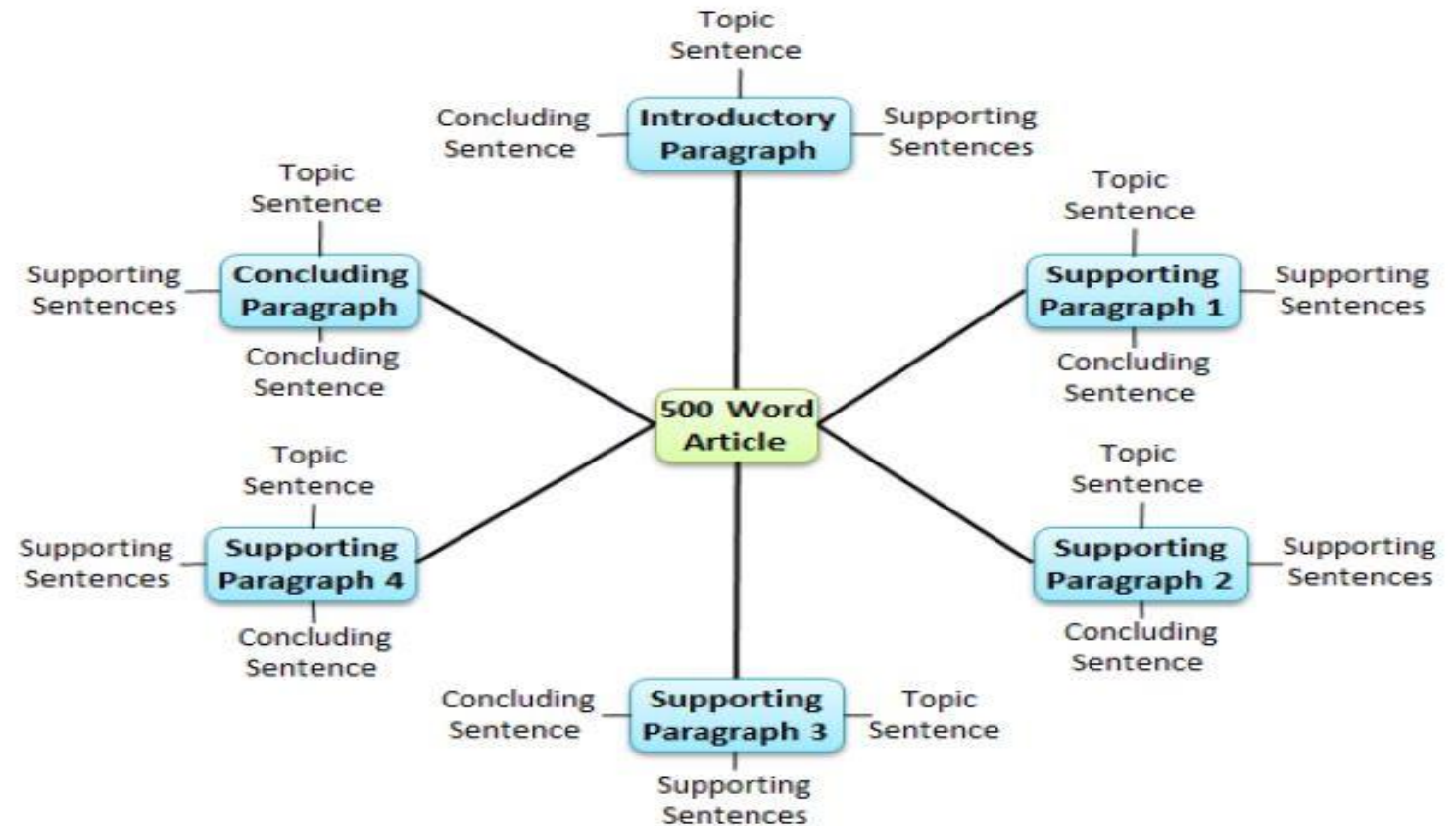


Mind Maps for planning Assignments

- To Explain
- To Persuade
- To Describe

- Compare & Contrast
- Advantages & Disadvantages
- Cause & Effect

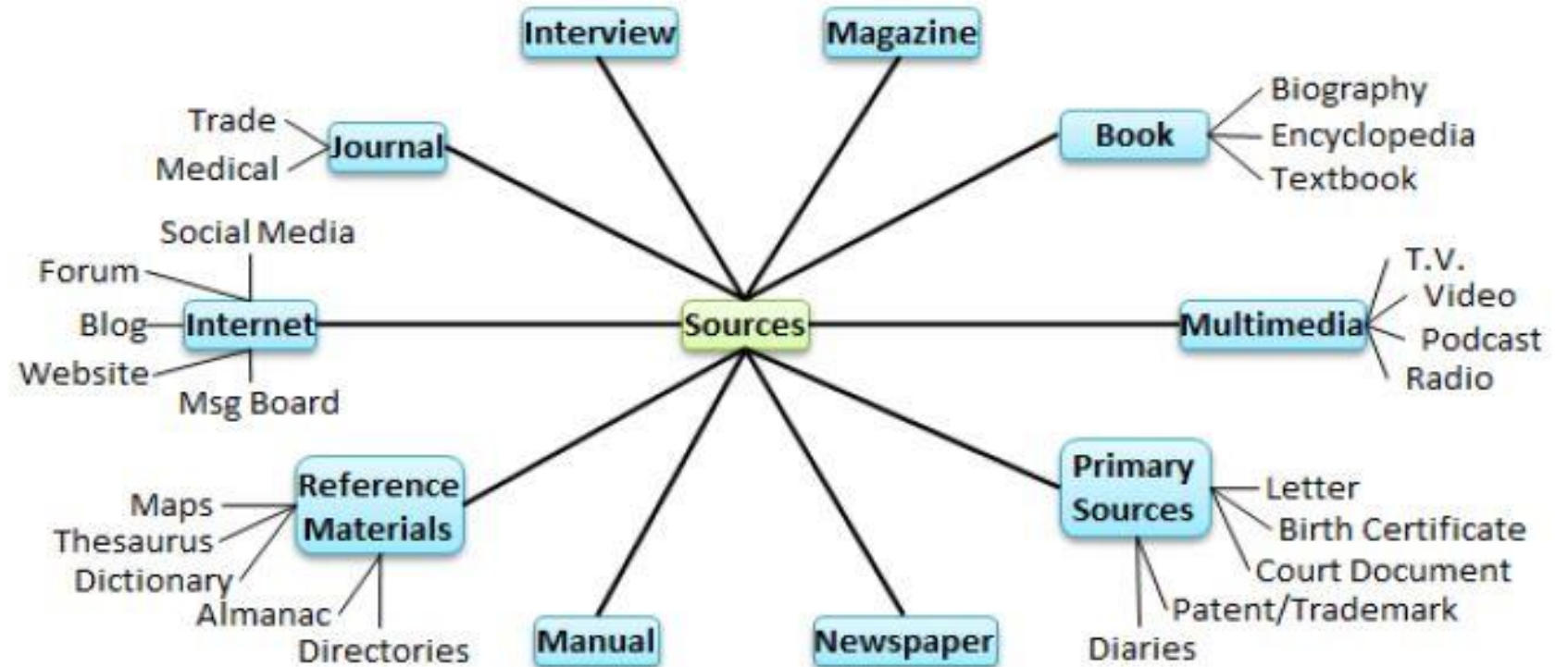
- The Process





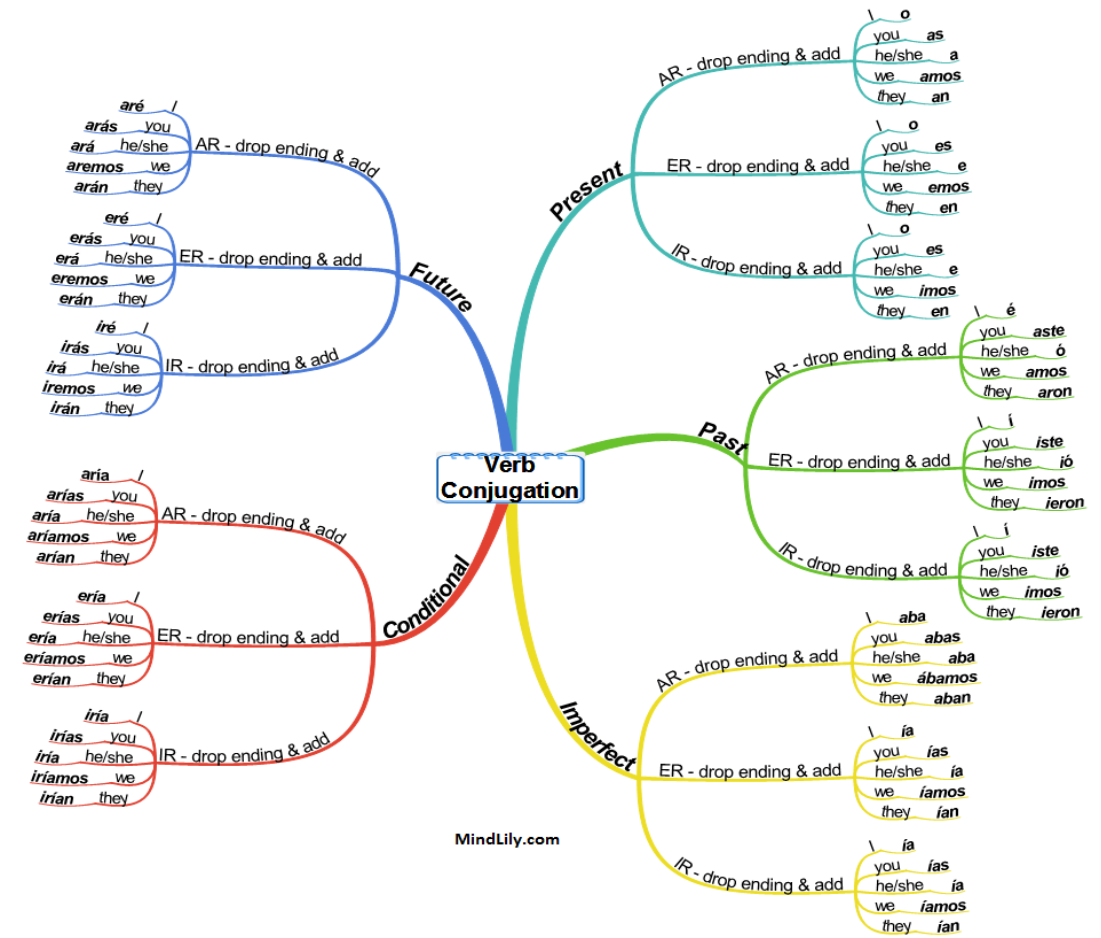
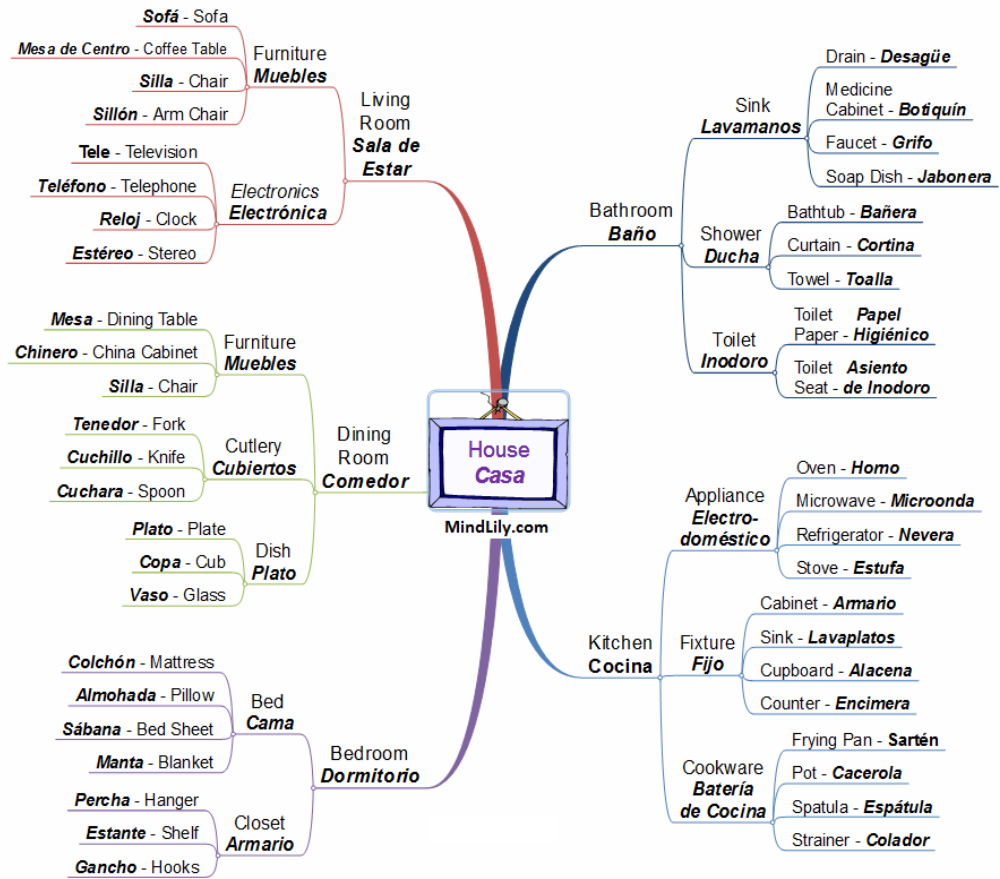
Mind Maps for Research

- Preview
- Read
- Mind Map
- Review
- Preview





Mind Mapping - Learning a Language





Argument Mapping

How Argument Mapping differs from other kinds of mapping.

Different kinds of map are defined by the relationships they depict:

- What goes in the boxes; and
- What the connecting lines indicate

Argument maps show only evidential relationships between claims.

In Argument Maps, the lines mean something very specific:

a reason to believe or a reason not to believe something else

Argument Maps are driven by the question, “**why should I believe that?**”.



Argument Maps & Critical Thinking

Critical thinkers make good judgements by being able to analyse and evaluate arguments well

They can grasp the “gist” of an issue and weigh up the pros and cons, answering questions like:

- What am I being asked to accept?
- Should I accept it or not?
- Why? What are the arguments and how strong are they?

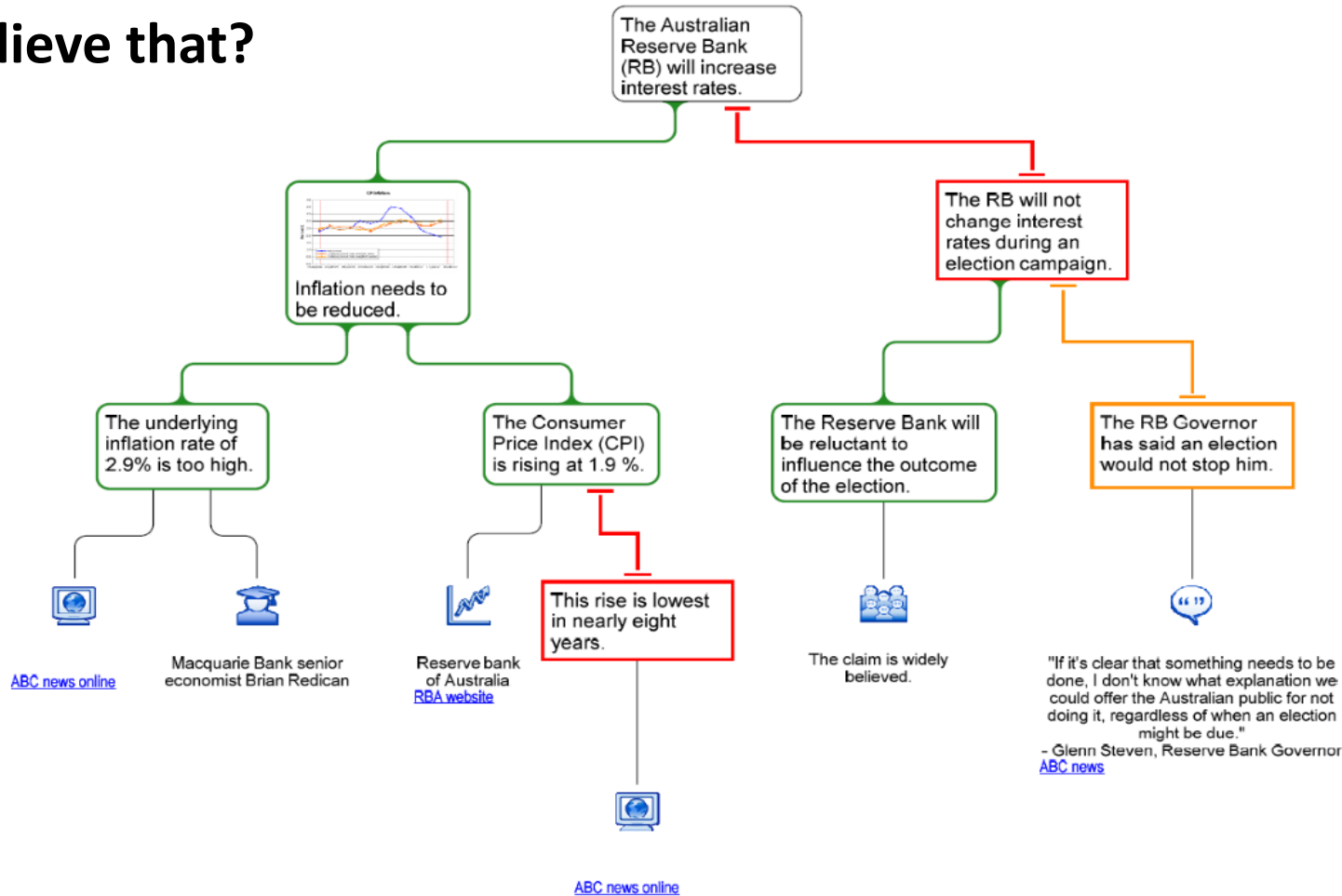
Argument Maps support critical thinking by enabling analyse of the exact structure of an argument, showing only elements that are relevant to making your judgements

A good Argument Map encourages clearer thinking, articulates the reasoning clearly, making it easier to consider the case systematically



Argument mapping

Why should I believe that?



The contention under consideration

Reasons for and against

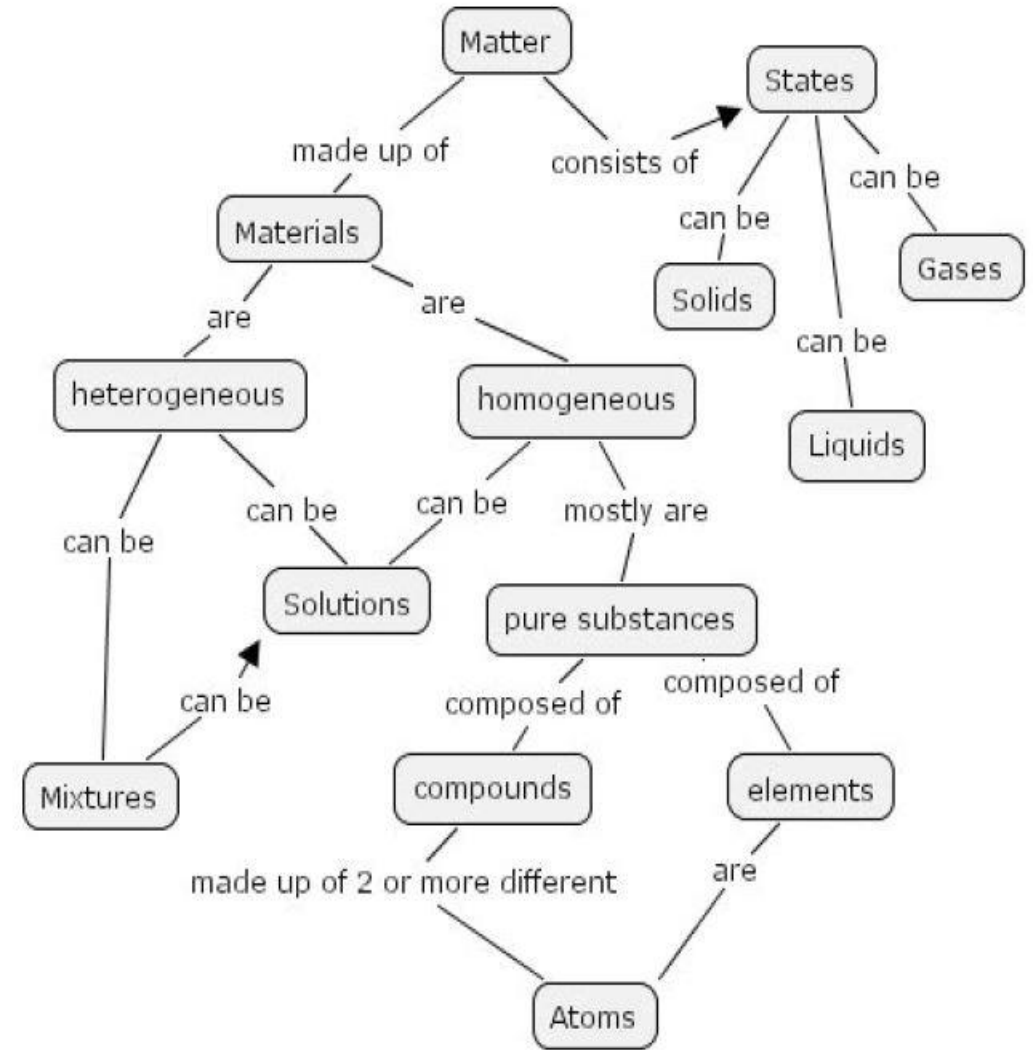
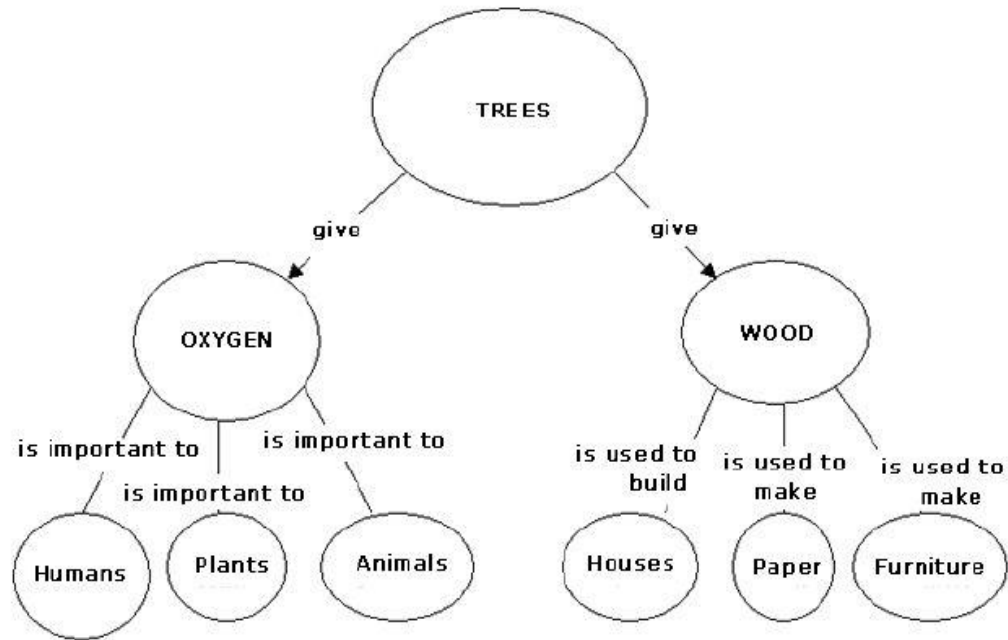
Evidence to support or oppose claims above

References



Concept mapping

Provide meaning as to how ideas connect
The lines as to how they relate





To summarise:

- Mind Maps support planning and note-taking
- Mind Maps are a useful revision tool
- Mind Maps improve memory
- Mind maps improve recall
- Mind Maps improve the power of association for remembering
- Mind Maps encourage connections and radiant thinking
- Mind Maps require practice

Contact: sarah.myhill@buckingham.ac.uk for more info



Further Resources

A new book available on Amazon written by a medical student from University of Hull: Mind Maps for Medical Students by Olivia Smith

Look inside: <http://www.amazon.co.uk/Medical-Students-Olivia-Antoinette-Smith/dp/1482250314>

Mnemonics and Study Tips for Medical Students, Second Edition: Two Zebras Borrowed My Car (Hodder Arnold Publication) Paperback – 30 May 2008 by Khalid Khan:

http://www.amazon.co.uk/Mnemonics-Medical-Students-Second-Edition/dp/0340957476/ref=pd_sim_b_1?ie=UTF8&refRID=1XJKJ5EWM2WXMFKH32QT



Further Resources

- Overall, to introduce the idea of systems thinking, basically create a story or flow around the information to learn. Then within that overall approach:
- For diseases: create a template flowchart in which to capture the name of the disease, its pathogenesis, symptoms, diagnostic tests, diagnostic differentials, treatment, prognosis;
- For systems (eg endocrine, cardiovascular): create a circular (eg endocrine) or linear (alimentary) flowchart capturing the major elements on the main axis and the contributory elements either side.



References

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References:- Argument Mapping

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