Cognitive Load Theory (CLT)





Dylan Wiliam @dylanwiliam



I've come to the conclusion Sweller's Cognitive Load Theory is the single most important thing for teachers to know bit.ly/2kouLOq

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Training Activity 1:

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Training Activity 1:

hat is the name of the academic behind Cognitive Load The

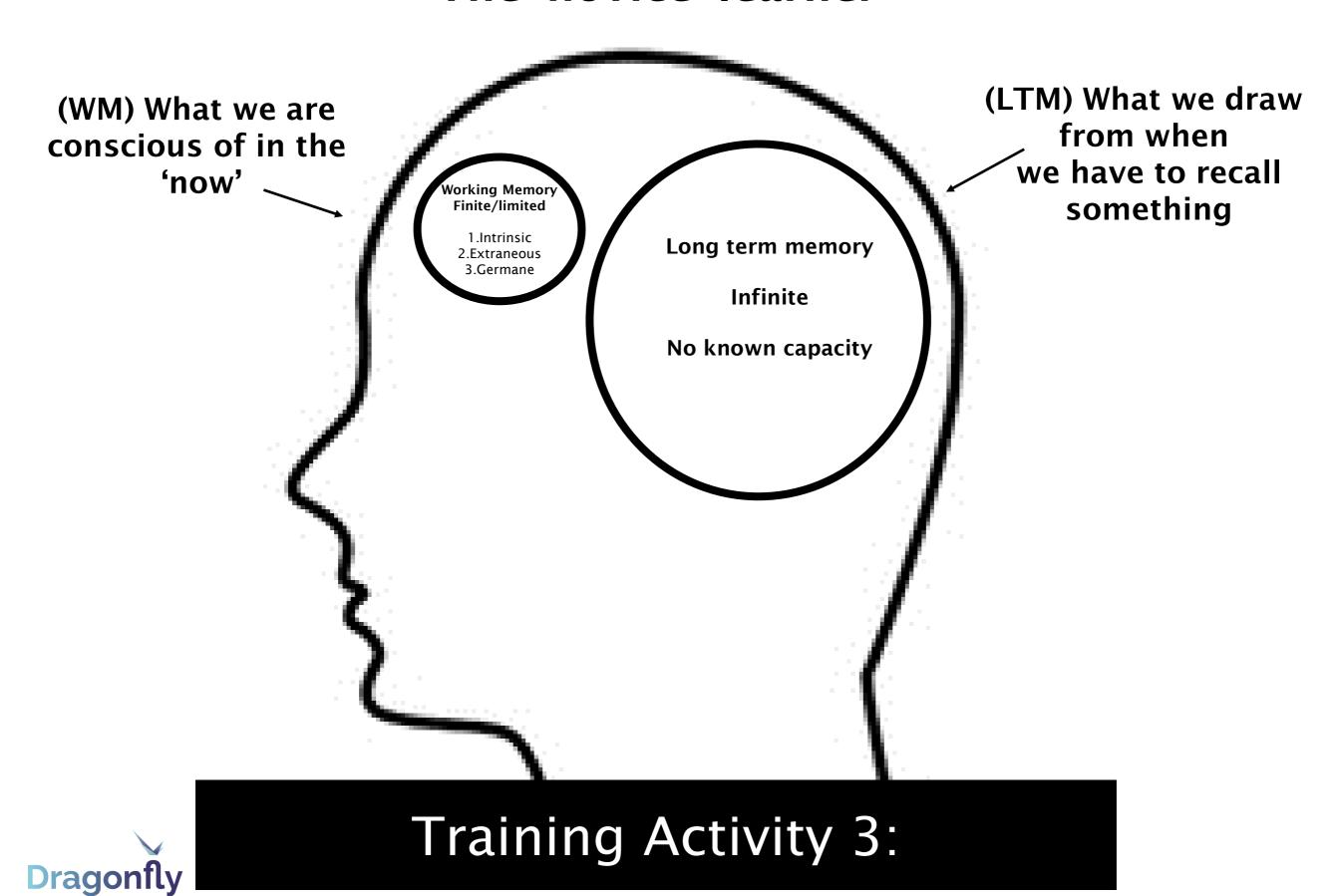
ademic who said CLT is the most important bit of research

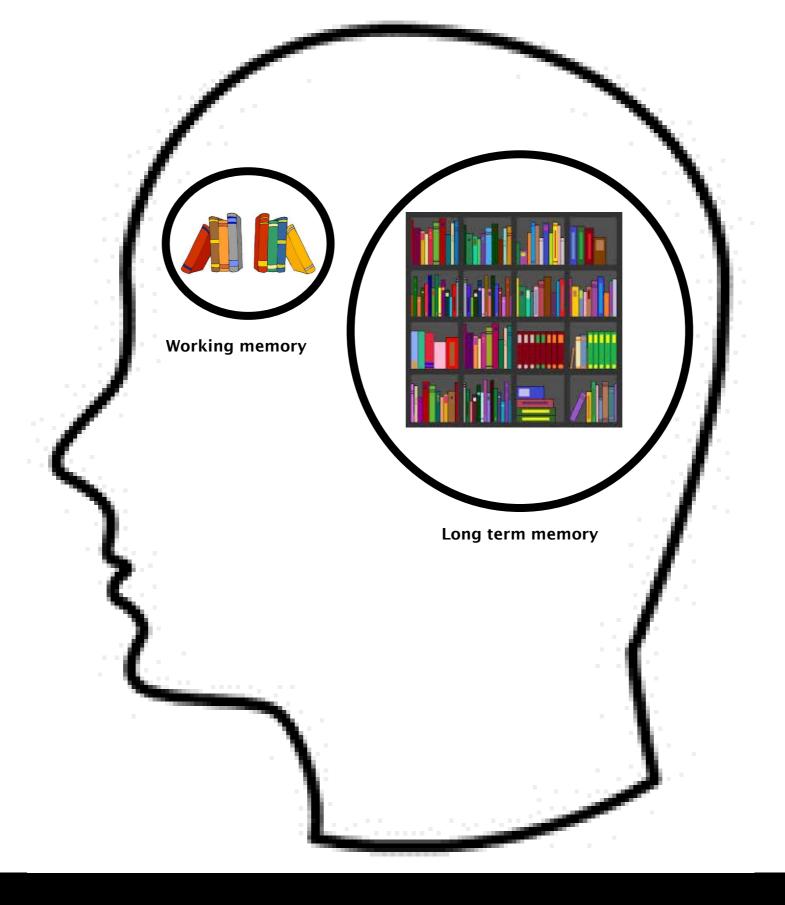
- ne 2 key issues for teachers when thinking about Cognitive
 - 4. What are the 3 types of cognitive load?
- most effective technique to get knowledge into the long t
 - 6. Create a definition for Cognitive Load Theory



Training Activity 2:

The 'novice' learner







An analogy

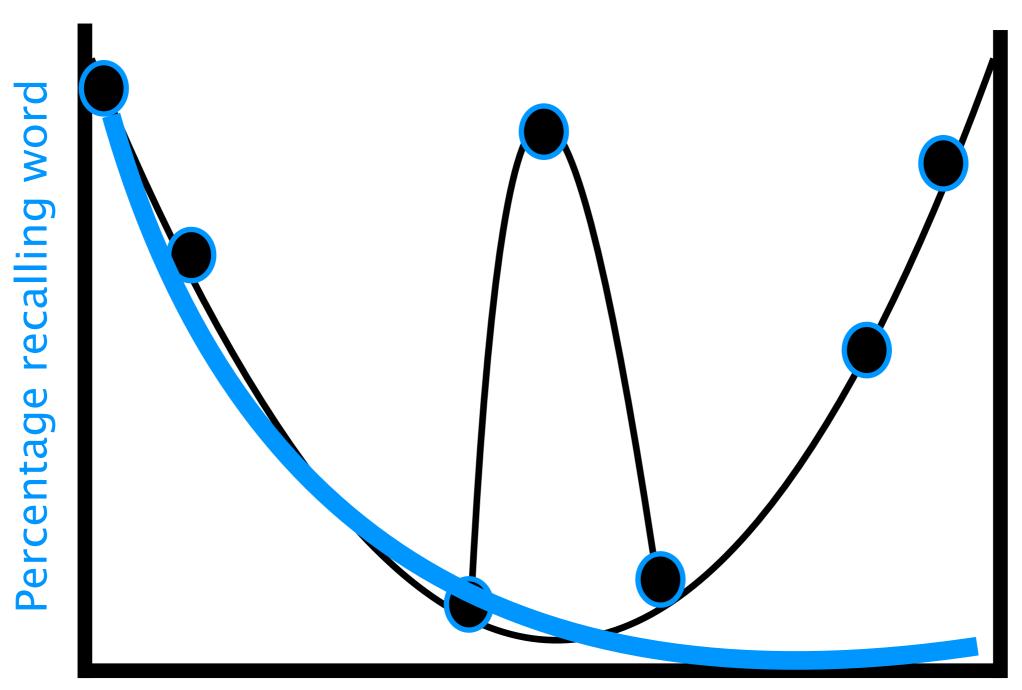
Workings of working memory revealed

by Oxford University



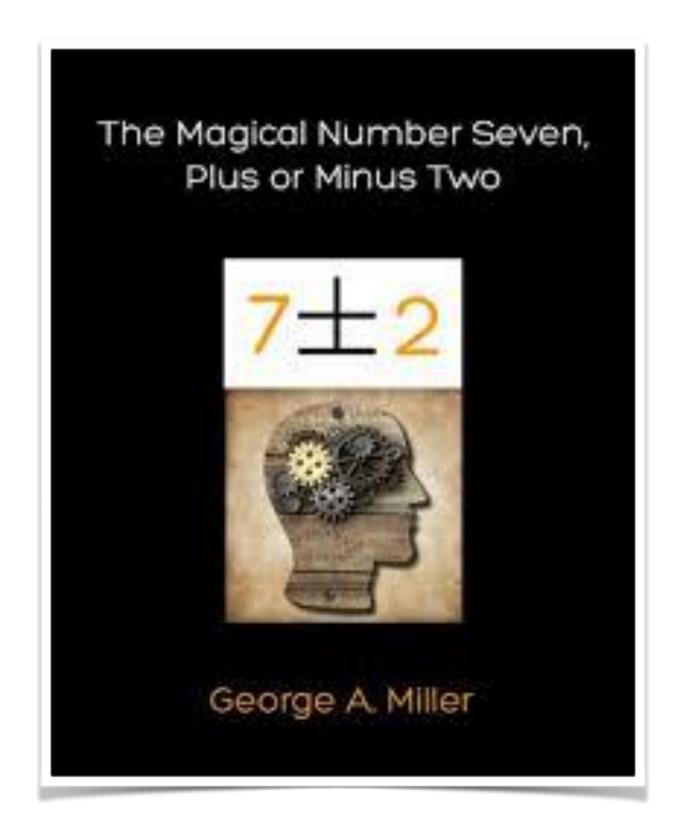


'Primacy and Recency' Effect



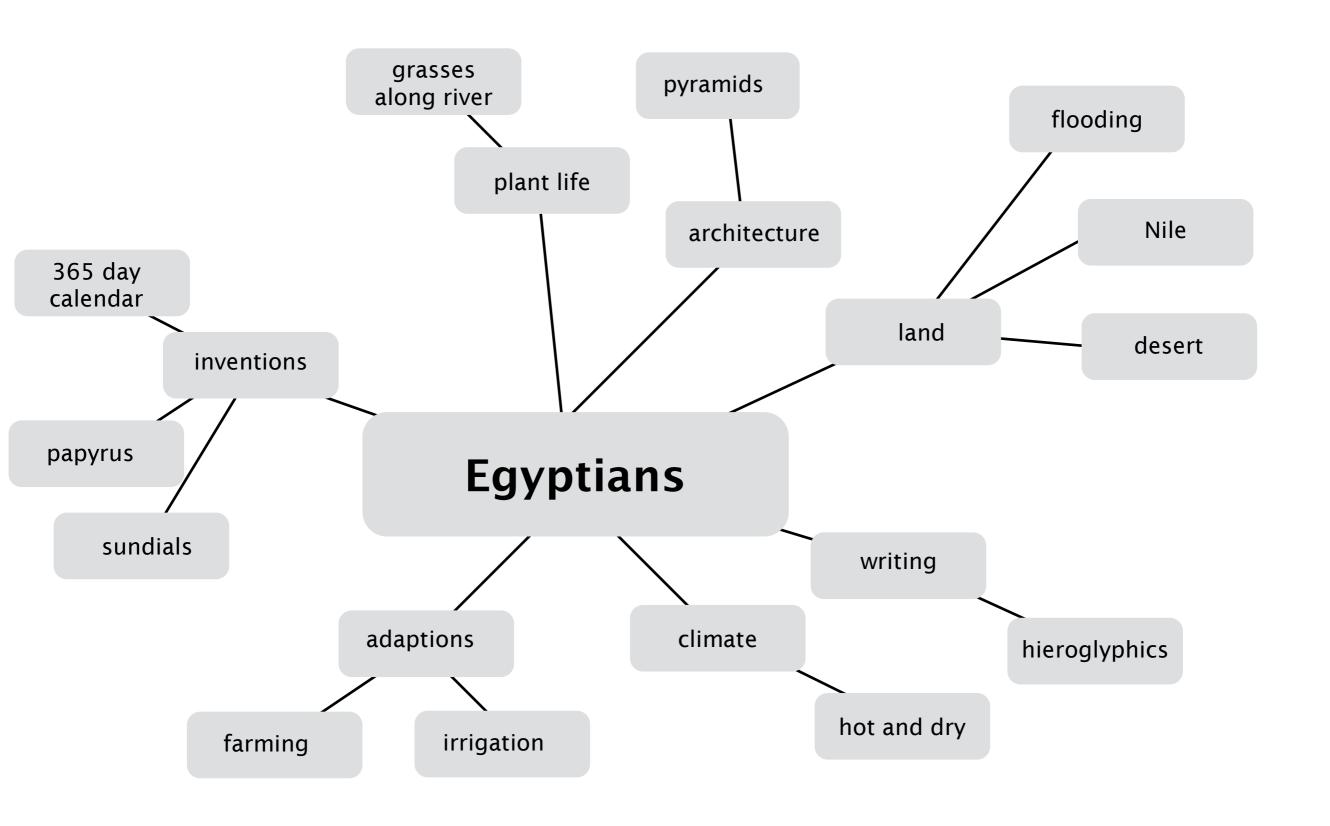
Position of word in list





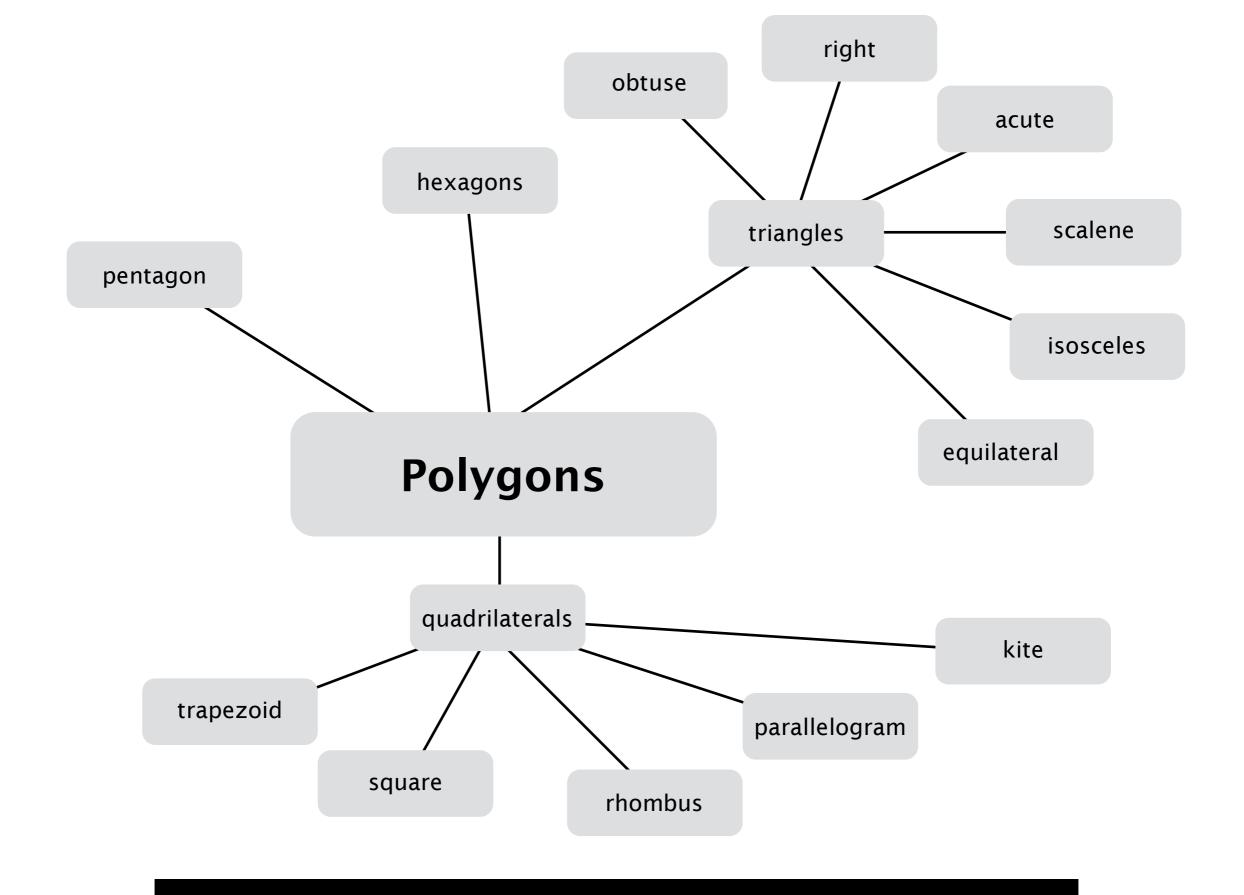








Knowledge Organisers (History)





Knowledge Organisers (Maths)

Multiplication and division vocabulary

Term	Definition	Example	
factor	a number that divides exactly	factors of 12 =	
Tactor	into another number	1, 2, 3, 4, 6, 12	
common	factors of two numbers that	common factors of 8 and	
factor	are the same	12 = 1, 2, 4	
prime	a number with only 2 factors:	2 2 5 7 44 42 47 40	
number	1 and itself	2, 3, 5, 7, 11, 13, 17, 19	
composite	a number with more than	12	
number	two factors	(it has 6 factors)	
prime factor	a factor that is prime	prime factors of 12 =	
prime ractor	a factor that is prime	2, 3	
multiple	a number in another	multiples of 9 =	
multiple	number's times table	9, 18, 27, 36	
common	multiples of two numbers	common multiples of 4	
multiple	that are the same	and 6 = 12, 24	
square	the result when a number	25 (5 ² = 5x5)	
numbers	has been multiplied by itself	49 (7 ² = 7x7)	
cube	the result when a number has	8 (23 = 2x2x2)	
numbers	been multiplied by itself 3 times	27 (33 = 3x3x3)	

Fractions, decimals & percentages

1/100	0.01	1%	÷100
1/20	0.05	5%	÷ 20
1/10	0.1	10%	÷10
1/5	0.2	20%	÷5
1/4	0.25	25%	÷4
1/2	0.5	50%	÷2
3/4	0.75	75%	÷ 4, x3
1	1	100%	÷1

Angles

full turn	360°
half turn	180°
right angle	90°
acute angle	< 90°
obtuse angle	> 90°
reflex angle	>180°
angles on a straight line	180°
angles inside a triangle	180°
angles inside a quadrilateral	360°

Shape vocabulary

perimeter = measure around the edge (circumference = perimeter of a circle)

horizontal line

parallel lines

vertical line

perpendicular lines (at right angles)



Roman numerals

1	ı	100	С
5	V	500	D
10	Х	1000	M
50	L		

YEAR 6 MATHS KNOWLEDGE ORGANISER

2D shapes

Name	No. of sides
quadrilateral	4
pentagon	5
hexagon	6
heptagon	7
octagon	8
nonagon	9
decagon	10

polygon = shape with straight sides regular = all sides/angles the same irregular = sides/angles not same

Types of triangle







alene equilateral isosceles

Types of quadrilateral



AREA

is the amount of space inside a 2D shape usually measured in cm² or m².

Area of a triangle = (base x height) ÷ 2 Area of a parallelogram = base x height

(Heinht = nernendicular heinht)

Measurement conversions

Month	Days			
January	31			
February	28 (29 in leap year)			
March	31			
April	30			
May	31			
June	30			
July	31			
August	31			
September	30			
October	31			
November	30			
December	31			
1 year = 365 days (≈ 52 weeks)				

Leap year = 366 days

1 centimetre	10mm	
1 metre	100cm	
1 kilometre	1,000 m	
1 mile	1.6 km	
1 kilometre	0.625 (5/8) mile	
1 kilogram	1,000 grams	
1 litre	1,000 millilitres	

Co-ordinates

Read co-ordinates along the x axis (horizontal) first, then the y axis (vertical). E.g. (3,-4) = go right 3, down 4.

3D shapes	square-based pyramid	triangular- based pyramid	triangular prism
faces (the flat sides)	5	4	5
edges	8	6	9
vertices (the points where the edges meet)	5	4	6

Volume = the amount of space a 3D shape takes up, usually measured in cm³ or m³



Volume of a cuboid = length x width x height

The mean

The mean is a type of average. To find the mean, add up all the numbers and divide by how many there are. E.g. the mean of 4, 5, 3, 4 is 4. (Because 4 + 5 + 3 + 4 = 16, and $16 \div 4 = 4$)

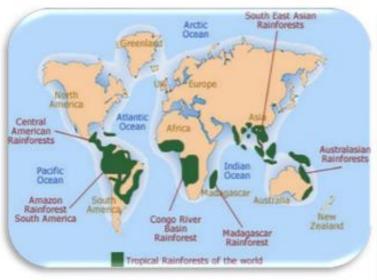


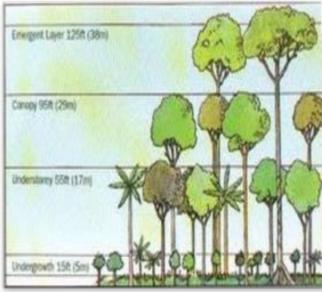
Rainforests Year 3

		Scientific and geographical vocabulary						
	Term	Definition						
1	Rainforest	A dense forest, normally found in tropical areas with high rainfall. They generate much of the world's oxygen.						
2	Country	A nation with its own government e.g. UK, USA, Germany, Denmark, Brazil, China.						
3	Continent	The world's main continuous pieces of land (Africa, Asia, Australasia, Europe, North America, South America, Antarctica).						
4	Ecosystem	A community of plants and animals that depend on each other to survive.						
5	Deforestation	The action of clearing a wide area of trees.						
6	Habitat	The natural home or environment of an animal, plant or organism.						
7	Interdependent	When two or more people or things rely on each other.						

	Causes of Deforestation
1	To clear space for farming: growing crops (e.g. soya beans & palm oil) and space cattle to generate cheap beef.
2	Chopping down trees for wood.
3	To build roads to mine for metals, gold & diamonds.
4	To dig for oil.
5	To flood areas to make dams & generate electricity.

	Impact of Deforestation
1	An area the size of 20 football pitches is destroyed every 60 seconds.
2	½ of the tropical rainforests we had are gone.
3	28,000 species of animals are expected to become extinct in the next 25 years.
4	Local people's homes are destroyed.
5	Levels of carbon dioxide in the air are increasing and oxygen is decreasing.





	Location, Layers and features		
1	Equator	Imaginary line through the middle of the Earth that receives the most sunlight.	
2	Tropic of Cancer Tropic of Capricorn	Imaginary lines north and south of the equator. Most rainforests can be found between these two lines.	
3	Emergent Layer	Giant tress that enjoy the most sun but high winds & cold.	
4	Canopy	Dense layer of trees overlapping each other. Home to most animals in rainforests.	
5	Understory	Relatively dark, open area below the canopy.	
6	Undergrowth	Also known as the forest floor, mainly consisting of fallen leaves, fruit etc. that decomposes as food for trees.	
7	Flora & Fauna	Flora = Plants; Fauna = Animals.	
8	Nocturnal	Animal that comes out at night. Sleeps during the day.	
9	Camouflage	Blending in to hide in the natural environment.	
10	Mimicry	Copying the look, sound or behaviour of something.	

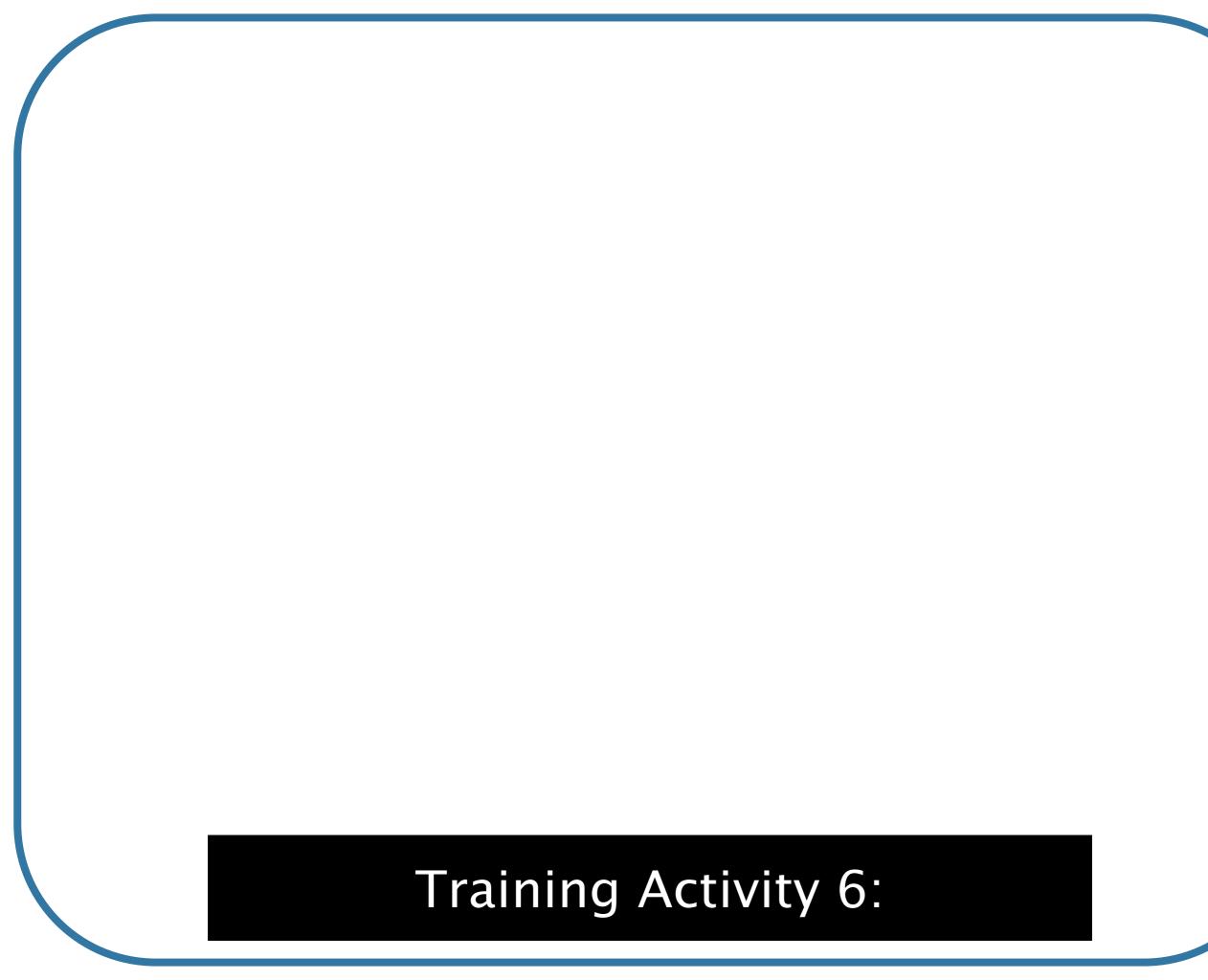
	Interesting facts	
1	Rainforests cover approximately 6% of the Earth's surface by contain more than ½ of the world's plants. About 90% of organisms are found in the canopy.	
2	About 30 million species of plants and animals live in tropical rainforests.	
3	There are two types of rainforests – Tropical and Temperate . Tropical rainforests are generally warmer than temperate ones.	
4	Many things we have in our homes come from rainforests including: chocolate, sugar, rubber, bamboo and many medicines.	

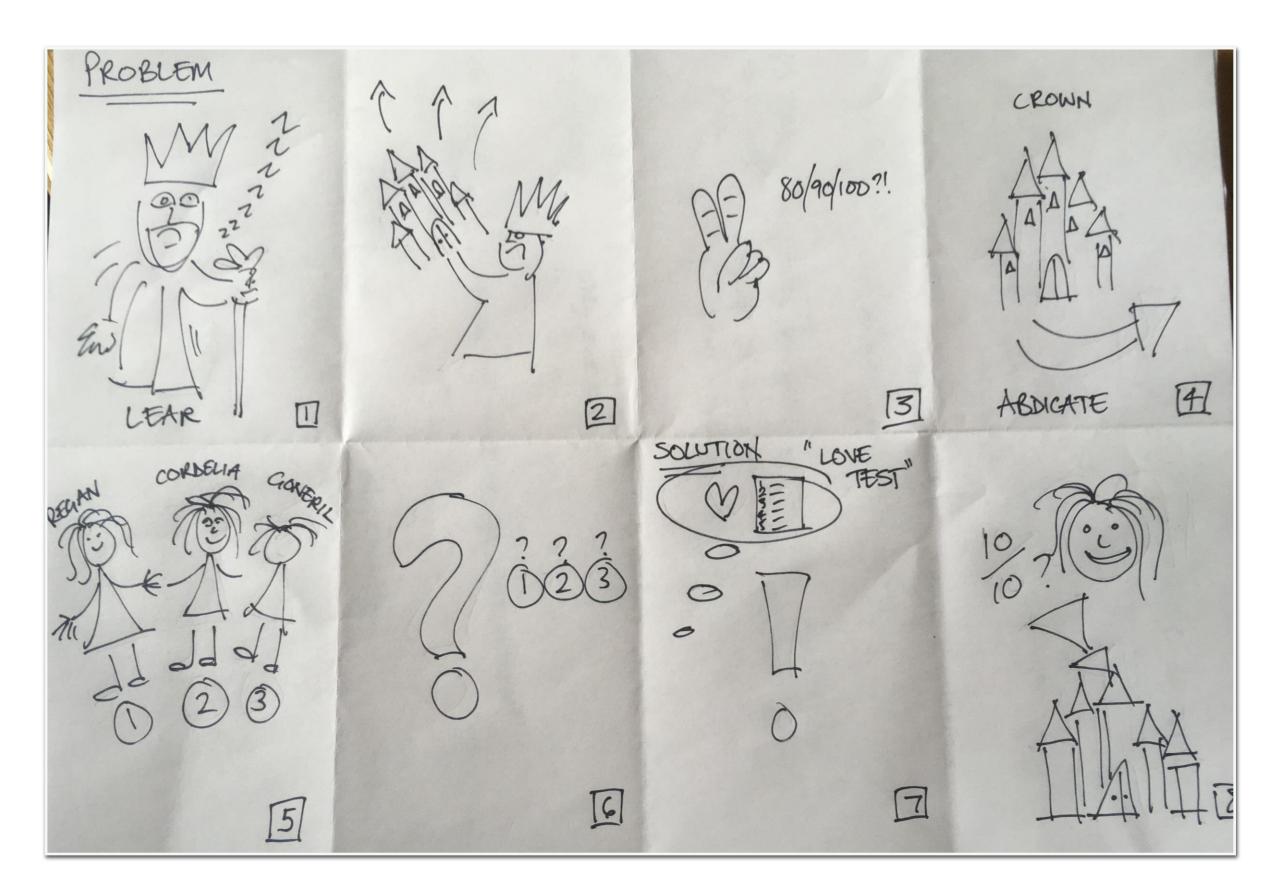
1. Information is organised in such a way as pupils are 'clued' into relationships/patterns/themes/topics/seq uences in readiness for what is to come

2. 'Less is more'

3. Focus on tier 3 vocabulary









King Lear is an elderly monarch, tired of carrying the burden of his kingdom and his royal responsibilities, and desiring a more peaceful life in his old age. He decides to abdicate and to give his crown away and divide the realm between his three daughters; Regan, Cordelia and Goneril.

In order to ascertain who will be given which areas of land, Lear conceives a "love-test" for which each daughter must convince their father that they love him the most out of his three children.



Disco

'Opps up side-your-head

Flamenco

ballet

pogo

macarena



Disco



Flamenco



pogo



'Opps up side-your-head



ballet



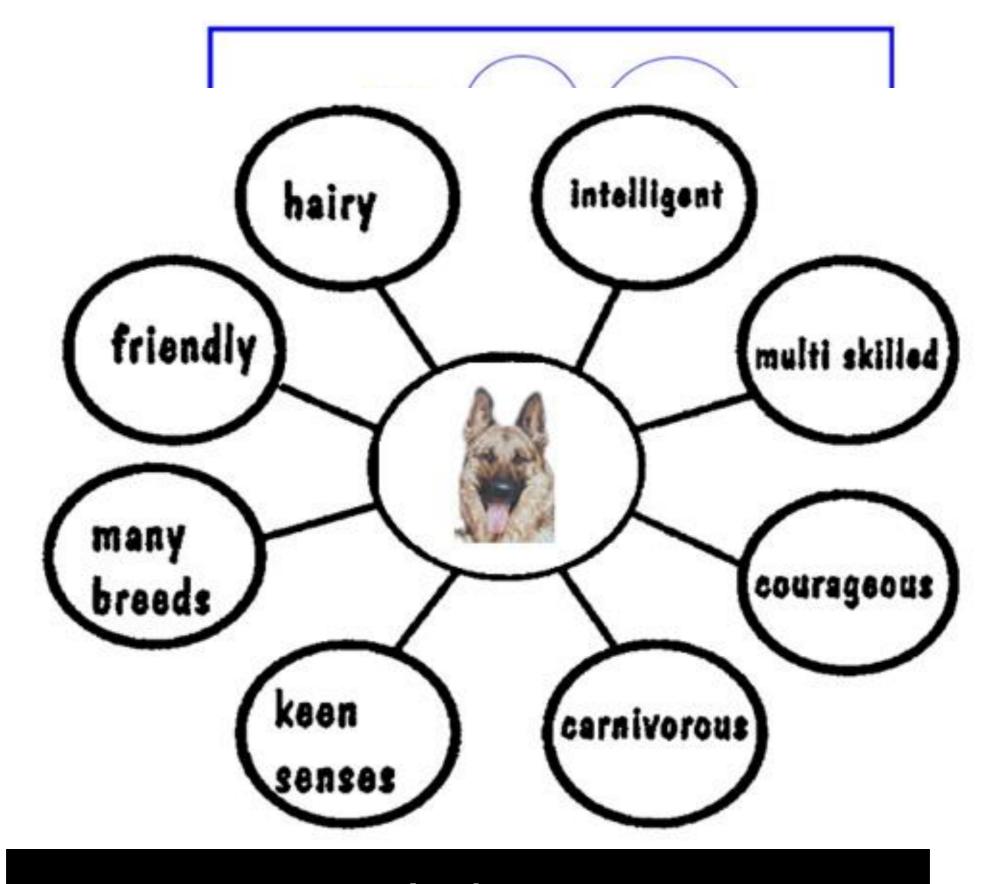
macarena





Knowledge	Process
000	
(recall/description)	(order/sequence/method/chronology)
Cause/effect	Similarity/difference
	0200
(Input/output) Classification	(compare/contrast) Visualisation
	word/concept image
(themes/groupings/sorting)	(analogy/metaphor/simile/showing same thing but in a different way)



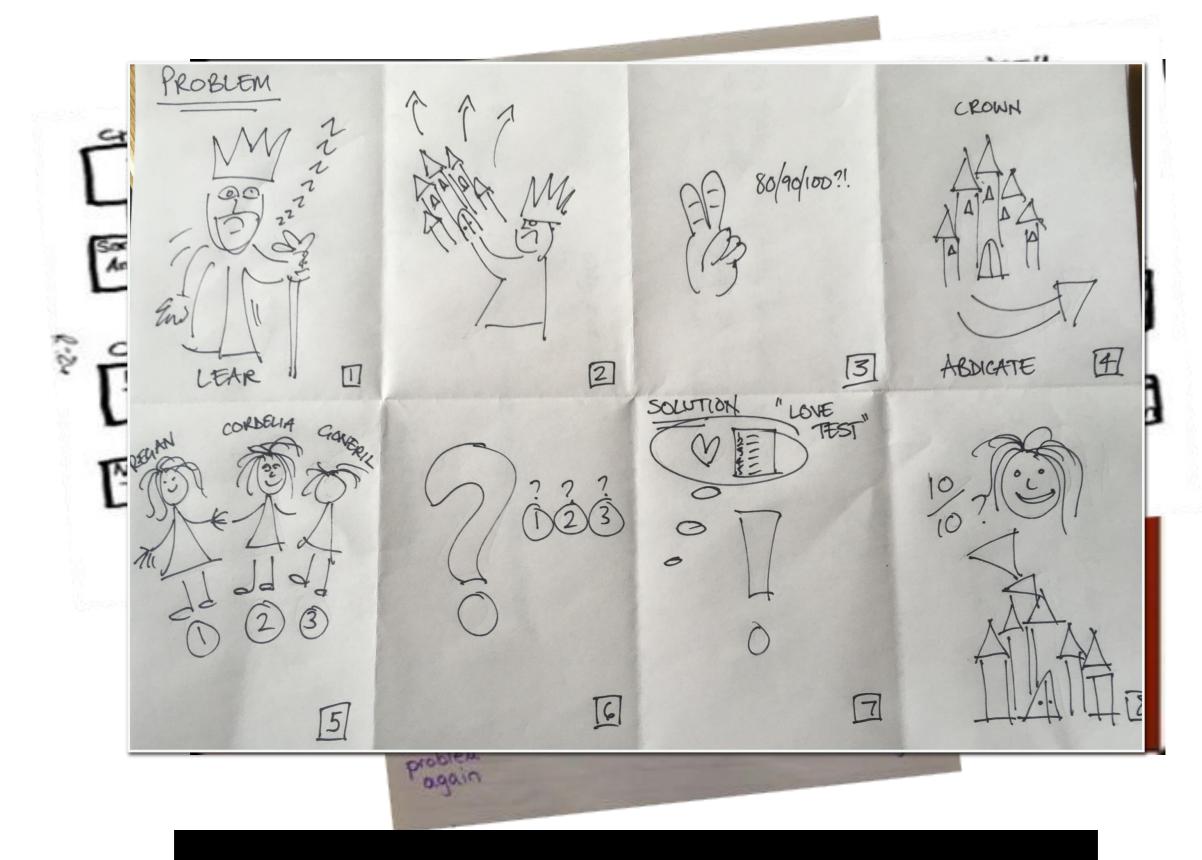




Knowledge Map

Knowledge	Process
000	
(recall/description)	(order/sequence/method/chronology)
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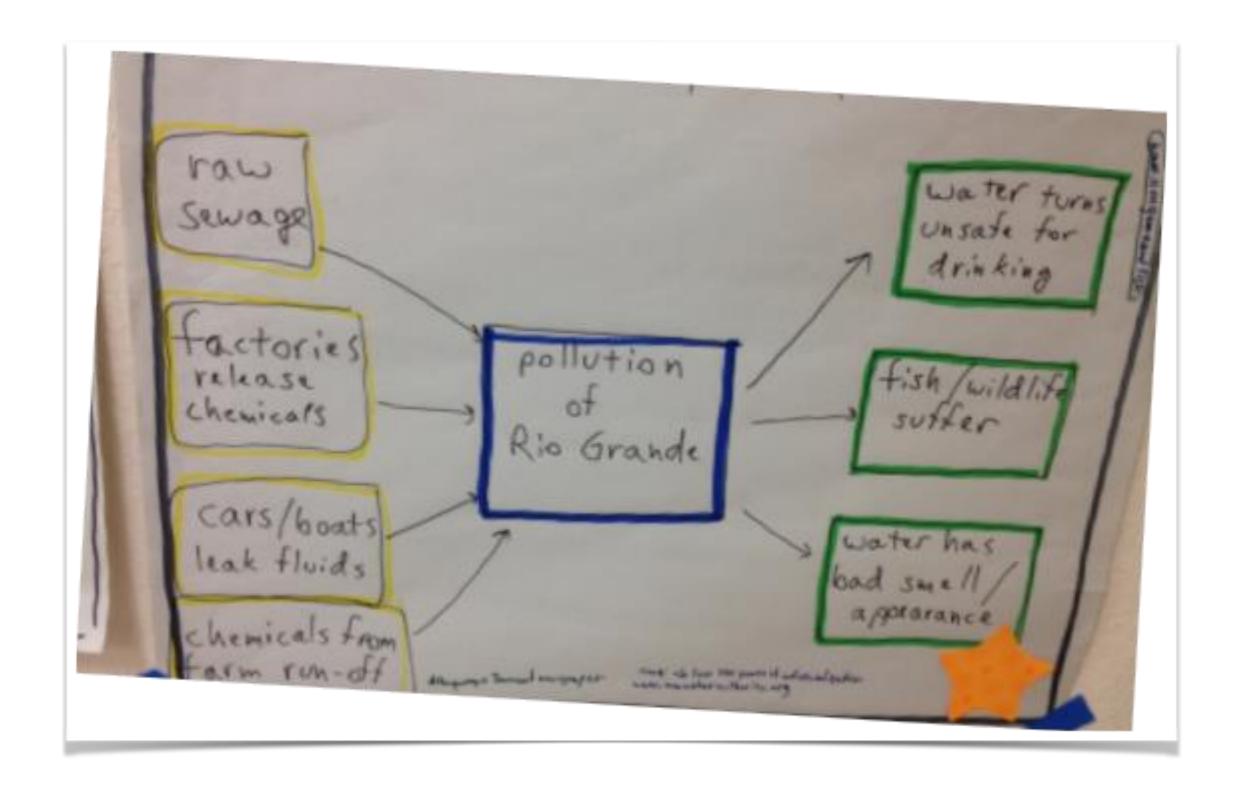




Process Map

Knowledge	Process
000	
(recall/description)	(order/sequence/method/chronology)
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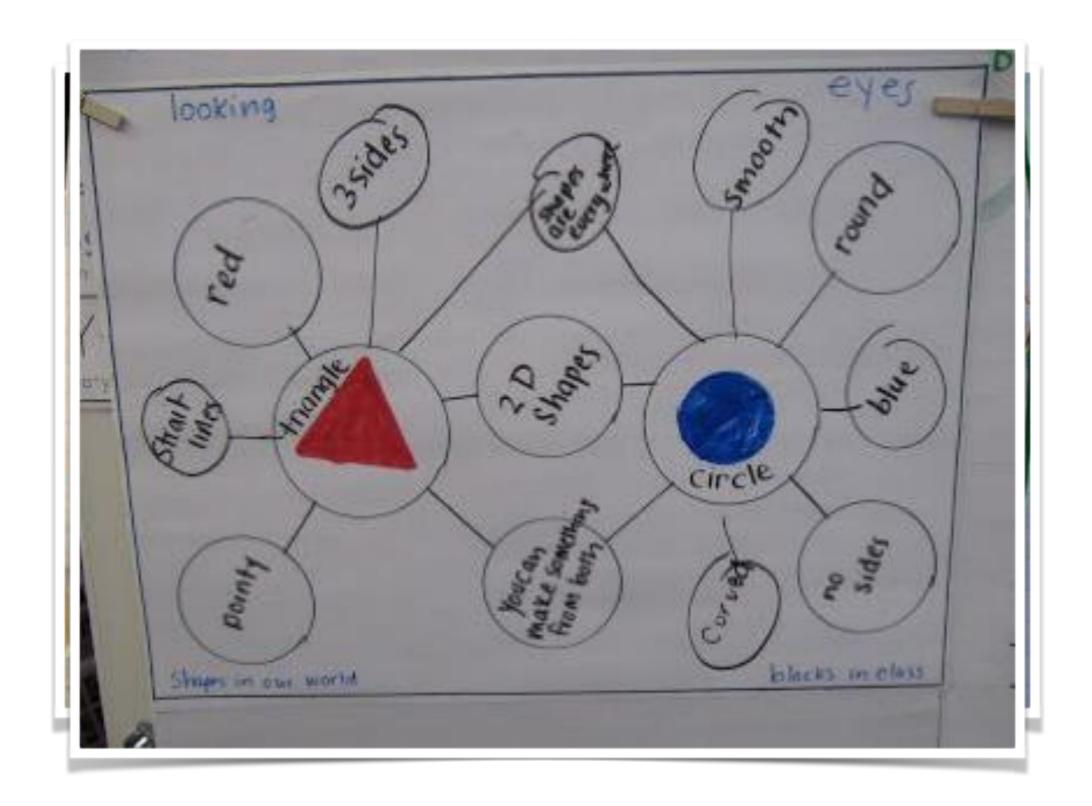






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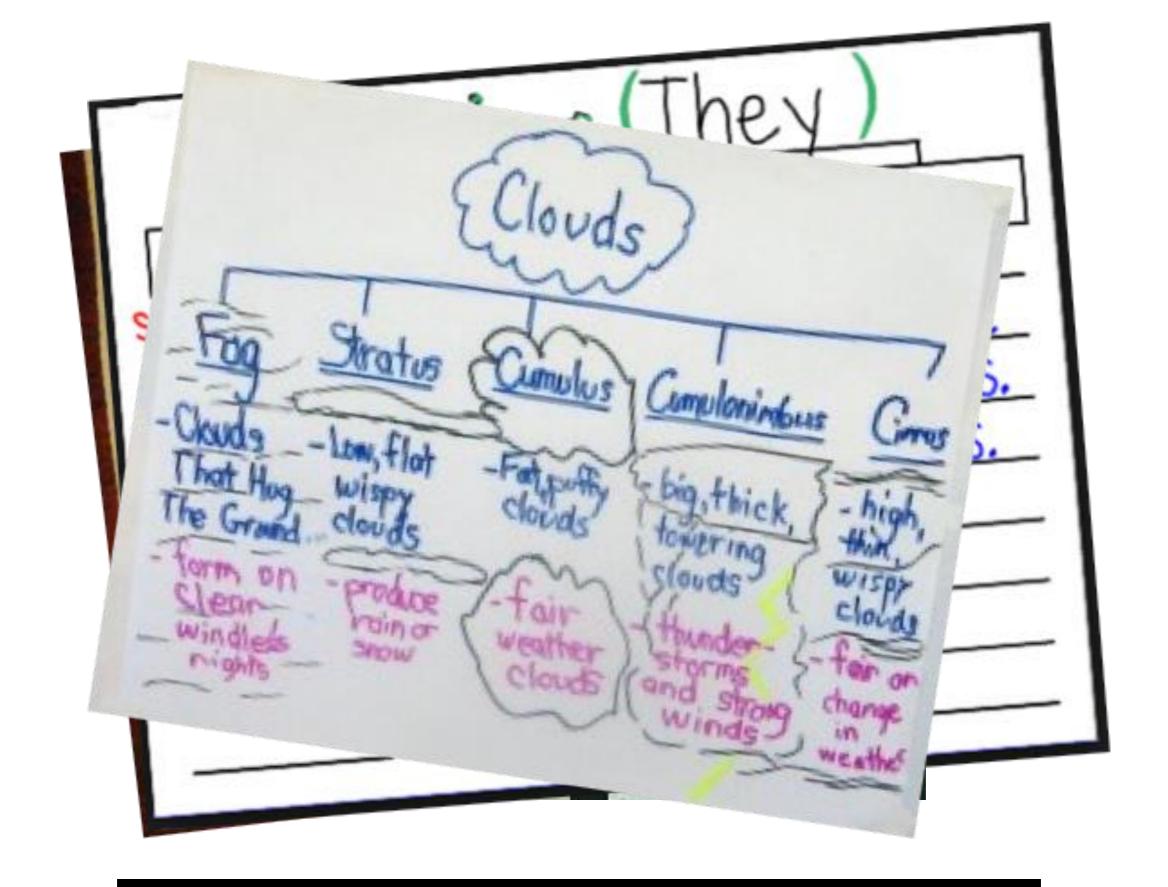






Knowledge	Process
000	
(recall/description)	(order/sequence/method/chronology)
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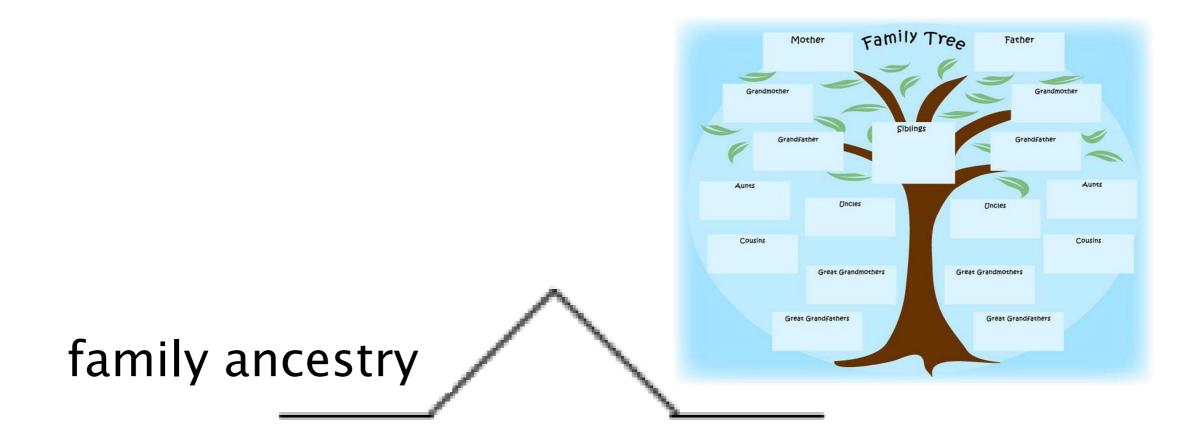




Classification Map

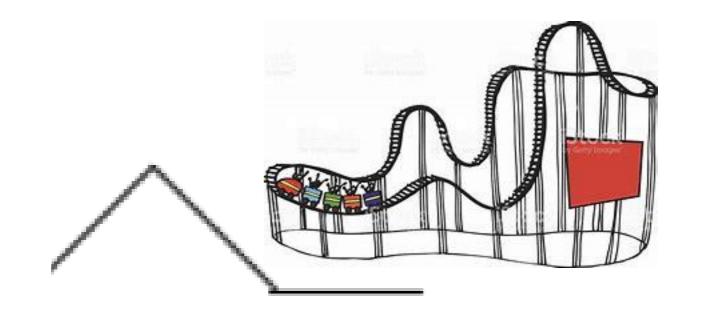
Knowledge	Process
000	
(recall/description)	(order/sequence/method/chronology)
Cause/effect	Similarity/difference
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(Input/output) Classification	(compare/contrast) Visualisation
	word/concept image
(themes/groupings/sorting)	(analogy/metaphor/simile/showing same thing but in a different way)



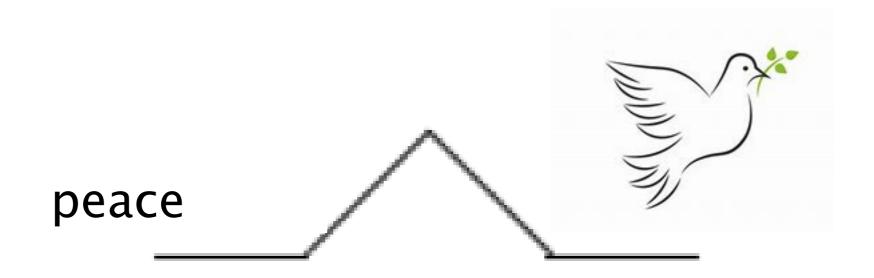




fluctuating emotions

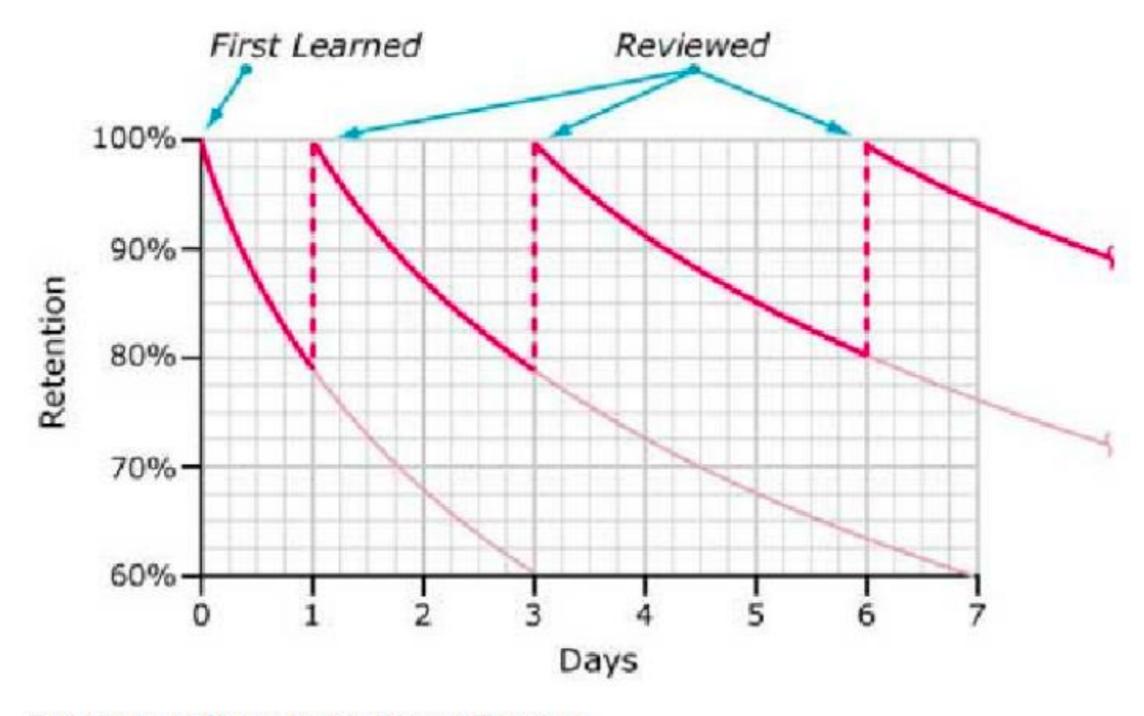












Forgetting curve of human brain by Hermann Ebbinghaus



Improving long term memory: Retrieval practice (DNA Quiz)

"Repeatedly retrieving content, which amounted to only two or three extra retrievals in this experiment, produced about a 150 % improvement in long-term retention."

Don't just quiz or test students on the knowledge or skills you have imparted once. Do it three times!

CLICK TO TWEET -

Source: Karpicke, J. D. and Grimaldi, P. J. (2012), 'Retrieval-based learning: A perspective for enhancing meaningful learning', Educational Psychology Review, 24, (3), 401–418.

is of learning, and incorporating retrieval into educational act



Training Activity 8:

Α	N	N .
В	0	
C	P	
D	Q	Q
E	R	
F	S	
G	Т	
Н	U	J
l	V	/
J	W	V
K	X	
L	Y	
M	Z	7



Α	Apple	N	Nectarine
В	Banana	0	Orange
С	Carrot	P	Prune
D	Damson	Q	Quince
E	Eggplant	R	Raisin
F	Fig	S	Spinach
G	Grape	Т	Tangerine
Н	Honeydew melon	U	Ugli fruit
ı	Iceberg lettuce	V	Vanilla
J	Juniper berry	W	Watercress
K	Kiwi	X	Xylocarp
L	Lemon	Y	Yam
M	Mango	Z	Zucchini



Α	N	N .
В	0	
C	P	
D	Q	Q
E	R	
F	S	
G	Т	
Н	U	J
l	V	/
J	W	V
K	X	
L	Y	
M	Z	7









Retrieval Practice

- 1. In which year did Ancient Greece's 'Golden Age' begin?
 - 2500 BCE
 - 480 BCE
 - o 480 CE
 - 1480 CE
- 2. How many citizens had to vote for someone to be sent into exile?
 - 0 6
 - o 60
 - o 600
 - o 6000
- Name one Greek philosopher:
- 4. Where were the first recorded Olympic games held?

Athens

Crete

Olympia

5. Name one Greek City State:





Improving long term memory: Retrieval practice (spaced retrieval)

Topic: Harry Potter and the Philosopher's Stone

Where was Voldemort hiding?	Name 3 shops in Diagon Alley	Name the 4 houses at Hogwarts	What are the names of the three main characters?
How did Harry feel after he defeated 'he who should not be named'?	What is the pub called?	What is the name of Harry's owl?	Name the author
Last lesson	Last week	Several weeks	Further back



Topic: PSHE

What are the 10 rules for happier living?	What charitable acts could you get involved in?	Write down what makes a good friend
Can you be happy all the time?	Name some techniques for calming your nerves	What does it mean to be an active listener?
Last lesson	Last week	Several weeks ago



Which Tudor Monarch had the most wives?

A: Elizabeth I

B: Edward VI

C: Mary I

D: Henry VIII

7. Multiple choice

Which Tudor Monarch had a view on marriage that was unhelpful to England?

A: Elizabeth I

B: Edward VI

C: Mary I

D: Henry VIII

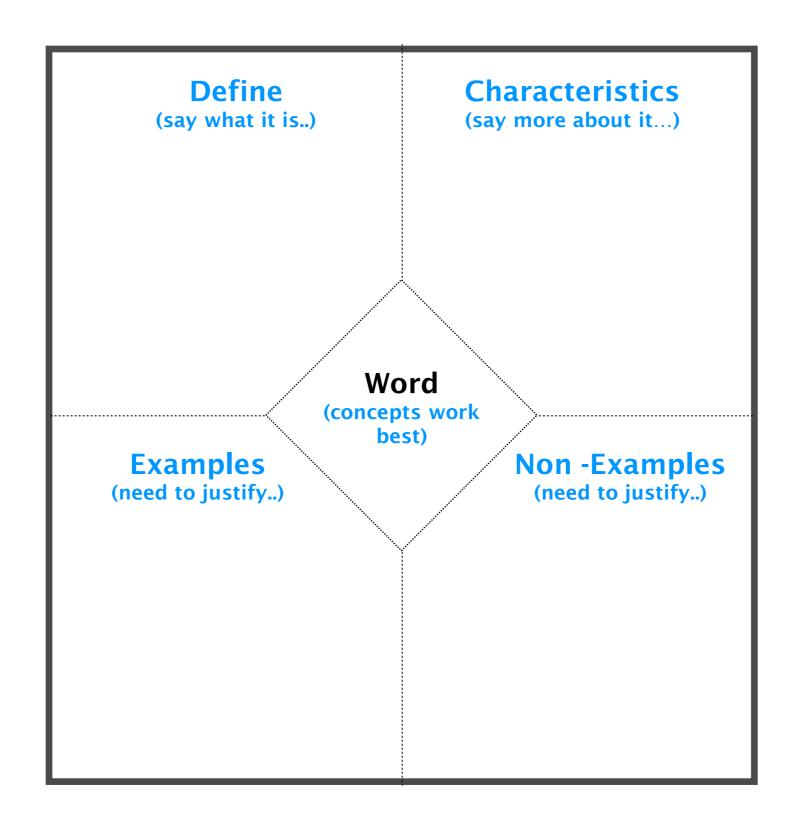
7. Multiple choice





English	adjective
Maths	2 D shape
Science	mammals
History	Tudor Monarch
Geography	volcanoes







Define

(say what it is..)

usually expresses a complete thought with a subject and verb

Characteristics (say more about it...)

they come in a variety of types such as simple, compound and complex

sentence

Examples (need to justify..)

Simple sentence-

The dog (subject) chewed (verb) a bone.

Non -Examples (need to justify..)

The chewy bone

(because there is no verb)



Define

(say what it is..)

an activity that involves physical exercise

Characteristics (say more about it...)

- often involves equipment
- usually uses a scoring system
- carries a set of rules

sport

Examples (need to justify..)

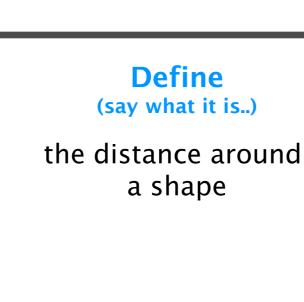
football because...

- equipment is required (e.g. goals and a ball)
- scoring system is used e.g. ball has to go into opponents goal
- full set of rules to play by

Non -Examples (need to justify..)

talent show because...
physical
exercise/exertion is not
a pre-requisite





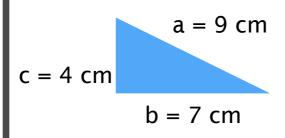
Characteristics (say more about it...)

calculate the perimeter using common units such as mm, cm and km p = a + b + c

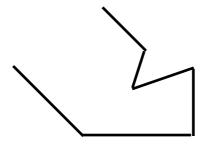
perimeter

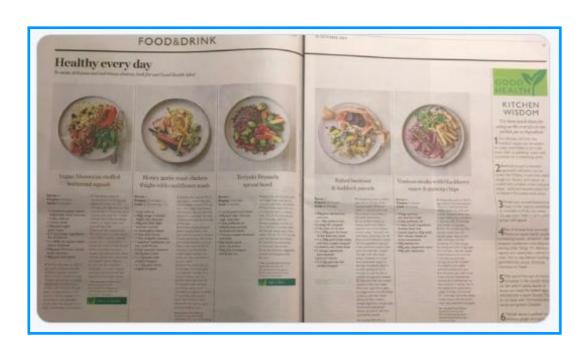
Examples (need to justify..)

Non -Examples (need to justify..)



not a closed shape so can't find perimeter









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KITCHEN WISDOM

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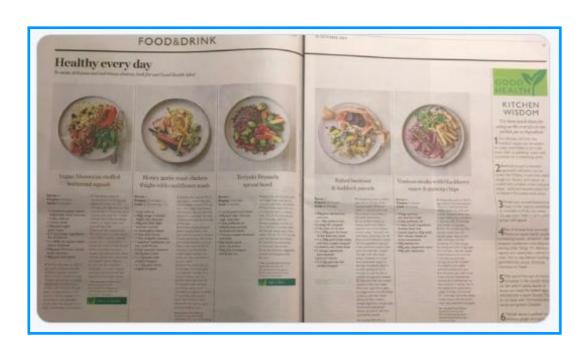
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WHAT TO DO IN THE GARDEN THIS WEEK



ROSE CARE

es in the compost heap ead, bin or burn them to ent the spread of disease.



TAKE CUTTINGS

To get new plants for free, take hardwood cuttings of shrubs and climbers now then leave to root over winter.



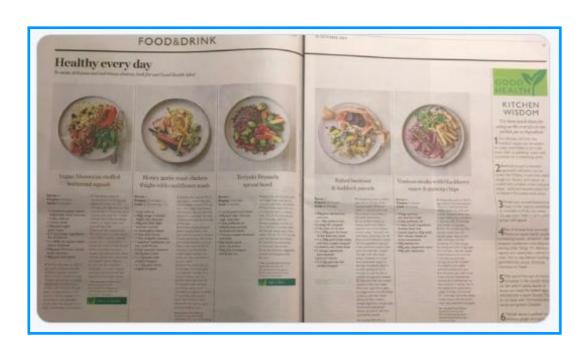
WASH AND BRUSH UP

Use water and mild disinfectant to wash inside your greenhouse in order to banish pests and diseases and let in more light.



CLEAN THE MOW

Before finally putting your mower away for the winter sure to clear it of wet grass may be stuck underness







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redient

we

ırants Lyle's and Flor n's orchard fruit

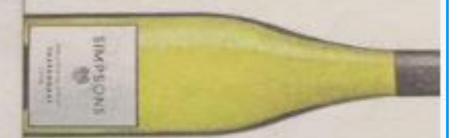
raw. It's a late-season plum, so it's y timed to go alongside game such as and grouse.

days, there are often just two types in and Victoria seems to be our variety It's a bit of an all-rounder, which ere's always going to be a better t variety for cooking or for eating raw. g it is good for, though, is umeboshi. tink of these as Japanese unripe at actually the fruit, ume, is more dated to the apricot. All the same, we yickle Victoria plums to make ours. itish climate is ideal to give our air balance of sweetness and acidity. that acidity, especially if you're ook with them, because then it eally noticeable that their flavour ced. I work with Australian chefs antly tell me that all the fruit is ustralia. But it's not. It's just sweet.

OAT CUISINE

Thursday 10 October is World Porridge Day. Why not mark it with a nutritious breakfast? Check out Perfect Porridge 3 Ways on waitrose. com. Alternatively, head to Carrbridge in the Scottish Highlands, where this weekend competitors will be vying for the Golden Spurtle in the 26th annual World Porridge Making Championships - see galdenspurtle.com for details.

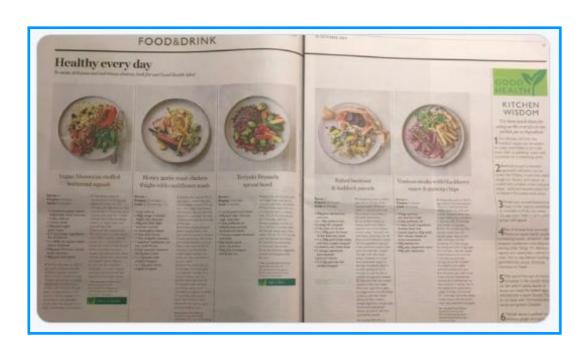
In the not too distant past, Bacchus could be soulless grape, but in Winbirri Vineyards BacE15.99/75cl (selected stores), we have a crisp English proud of. Very fresh and appealing, with a light gooseberries and a clean, lemony taste.



2 FINE ENGLISH CHARDONNA'
Simpsons have always said they'd only may
wines, but the 2018 harvest was so abunthere were grapes left over for an experiment
experiment Simpsons Estate Chardonnay, £13.9
stores), is, Very rich, very round, quite tropical,
layered — a fine English Chardonnay.



3 What a pernickety grape Pinot Noir is – I and even in Burgundy, its traditional home massive variations in quality. And yet in Sharphai





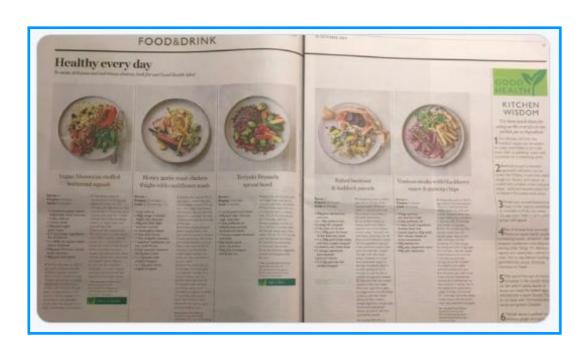


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	STEAK	FRITES
26.1	Our Black Angus steaks are aged for 25 c	days for fantastic flavour, taste and texture. © Camplimentary garic butter maiobic on request.
	THE PARTY NAME OF THE PARTY NA	SAUCES 2.25 EACH
.95	SOZ SIRLOIN 19.95 100Z RTB-E best served: medium rare - medium inst served: no	dun - medium self — pappercom
	SOZ HEART OF RUMP 15.95 70Z FILLET	
.95	No. of the Control of	potato frites for 1,00 — beel shipping Merlot grovy ⊕
	Upgrade to sweet	passes miles in the
	BURGERS	EXPRESS MENU 9.95
-	Served with your choice of fittes or house soled	
.95	Upgrade to sweet parato fintes for 1.00	Any of these meals are available for just 9.95
	CHARGRILLED CHICKEN BURGER @ 12.95 With reacted and papers; body gem letters and plant	Monday-Friday 12-4pm
95	senate in a chargefied (moche but with a chare of days); or arround mayormage	The state of the s
100	SPICY CHICKPEA BURGER ⊕ 11.63	(ROQUES
91	chickpea, papper and sweetcom burger with	Served with frites or frauer saled
	sesame seed cromb, boby gem lettuce, plum remate and tomate loperade in a soft soundsoph from	MONSIEUR CAMEMBERT & PANCETTA
95	BLACK ANGUS BURGER ⊕ 12.95	ATTEMOT OF THE PARTY OF THE PAR
95	dee beef burger with buby gare lettuce and plum terrato in a chargeflest brooks bun with Olion responsate	smoked hom and a feed CHICKEN CLUB
	NEW regar option available (BIB)	burbout box shoring
	- ADD TOPPINGS TO ANY BURGER 1.25	MUSHROOM () Annulo Décharrel
15	- fined from reason sees (2000) - gratinal harbourni (200	boby spirach, goods charse BBQ PULLED BEEF and a charde of truffe oil windho assystrative
	- smosherf avacado (300) - sweet cure 50con (345)	
	Fortobello municom ⊗⊗⊗ — Comembert ⊘⊗ red groat diume; ⊗⊗⊗ — 260 puled benf ⊗⊗	BAGUETTES
	1000	Survey with free or house safed
1250	CROQUES	VEGETABLE & HALLOUMS ⊙
**	Classic gralled Emmedal cheese sandwich on soundough with	unled peppers, courpites, subergines and hyllowing
	(sachume) souce. Served with your choice of frittes or house salus	STEAK
	Upgrade to sweet potate frites for 1.00	sliced Black Angus rump steel with red anion shutney.
15	MONSTEUR 10.65	CHARGRILLED CHICKEN
	amotest hom	The Robert County States and Additional Company of the County of the Cou
	MADAME anoked ham with a fried free-range egg	
95:	PORTOBELLO MUSHROOM ① 18.65	BURGER
	with baby spirach, goat's shares and a drizzle of triffle of	
	BBQ PULLED BEEF 12.45	BLACK ANGUS BURGER (8)
	CHICKEN CLUB 12-71	6 day beef burger with buby gem lertuce and plum tomate
15	with crispy pancetts, body spinoch and sundried	in a charge lied Enache buri with Dijon mayonnaise
	turnato bechavial	LICHTED DITES
	CAMEMBERT & PANCETTA 12.61 with shador & nature chatney	LIGHTER STIES
5		OMELETTE SUMMER SALAD
	SIDES	with one Appara of your harriage and sundred
I	SWEET POTATO FRITES⊕ 4.50	choice Served with fines Authority or nothing
	HALLOUMI FRITES 4.7	proutons, frieder lettuce,
	DAUPHINOISE POTATOES ⊕⊕ 1.2	- setsort OVA
	HERITAGE TOMATO & SHALLOT SALAD SSS 1.2	smoked salmon (d) — chargined chicken (€ 2.50)
	FRITES® 1.5	9 — mushmoms (⊘S) — goot's thesse () 1.50
	HOUSE SALAD®®® 3-2	
	GREEN BEANS ②⊕ 3.2	5
	AND THE PROPERTY AND PROPERTY AND PARTY AND PA	

1.25

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Text	Do	Don't
Colour Pictures		
Amount		
Lines Remember		
kemember	think communication is key	think artistic talent is key

	Do	Don't
Text	see spacing between lines as key to easy reading	confuse larger bold text as easier to read
	use a grid (Tip: use a table to design everything - then delete table 'lines')	use comic sans!
	2 font types max - mix serif and sans serif	use more than 2 different font types
	left align (alignment completely transforms how easy it is to read)	use bullet points (empty of meaning - use numbered statements
	chunk / design natural hierarchies	instead)
Colour		
Coloui	use one colour extra only (after black)	colour in text boxes or put coloured text on top of coloured box)
	colour code (black plus one colour you choose)	use too many colours when colour coding
Distuuss		
Pictures	promote use of icons to illustrate concepts	put extra images in as filler!
	try to draw your own images/icons	
Amount	allow plenty of white space to remain	clutter the page with too much material that is not organised
	think "less is more"	coherently
		overfill page
Lines	use lines of maximum 0.5 thickness	use tables but leave all the lines in
	use deep margins and borders	put text right unto page edge
Demonstration		

think artistic talent is key

5. Knowledge Organisers think communication is ke

Ahmed is head of school. Moona is Head of Maths. Umair, Abdul and Rafa work for Moona. Khalid is the Head of Physics. Bazir, Rania and Rabah report to Khalid. Umair, Bazir, Ranir and Khalid are working together on the joint 'Preparing for University project'.

Q1. Who is the highest ranking person working on the Preparing for University project?

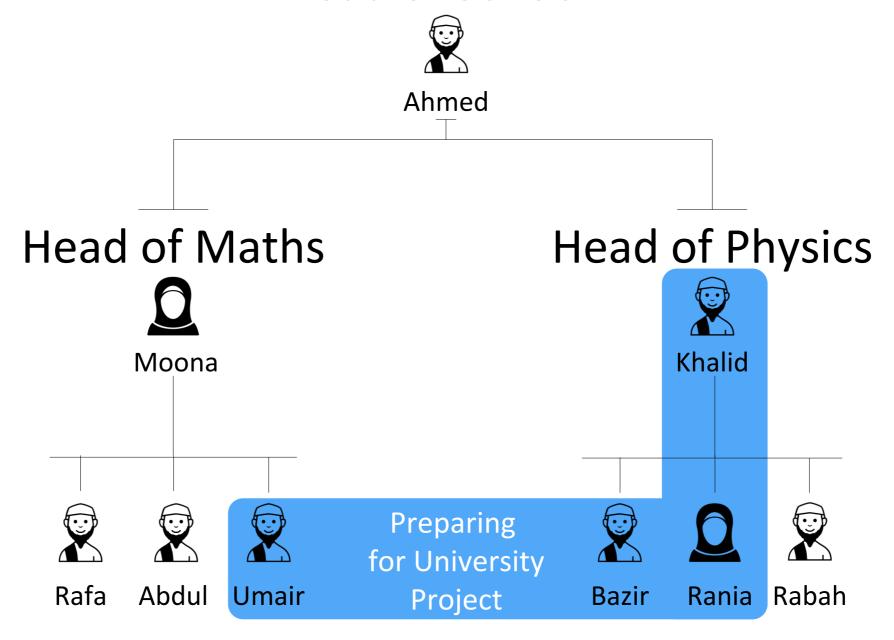
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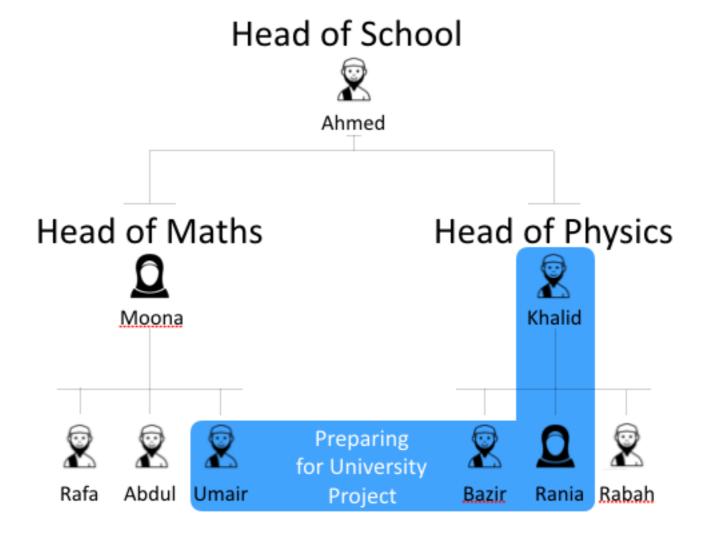
Q2. Which department has the most people on the Preparing for University project?

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Q3. Which people are not involved on the Preparing for University project?

Head of School



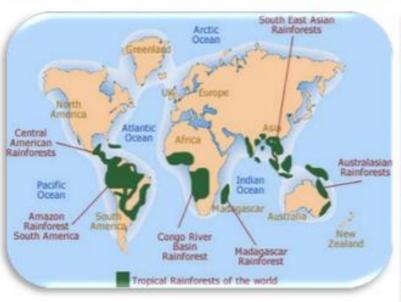


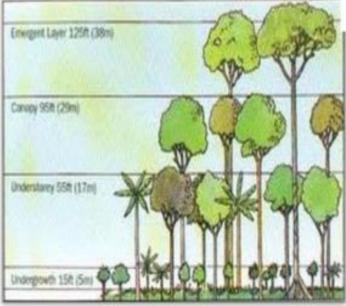
- Q1. Who is the highest ranking person working on the Preparing for University project?
- Q2. Which department has the most people on the Preparing for University project?
- Q3. Which people are not involved on the Preparing for University project?

	Scientific and geographical vocabulary		
	Term	Definition	
1	Rainforest	A dense forest, normally found in tropical areas with high rainfall. They generate much of the world's oxygen.	
2	Country	A nation with its own government e.g. UK, USA, Germany, Denmark, Brazil, China.	
3	Continent	The world's main continuous pieces of land (Africa, Asia, Australasia, Europe, North America, South America, Antarctica).	
4	Ecosystem	A community of plants and animals that depend on each other to survive.	
5	Deforestation	The action of clearing a wide area of trees.	
6	Habitat	The natural home or environment of an animal, plant or organism.	
7	Interdependent	When two or more people or things rely on each other.	

	Causes of Deforestation	
1	To clear space for farming: growing crops (e.g. soya beans & palm oil) and space cattle to generate cheap beef.	
2	Chopping down trees for wood.	
3	To build roads to mine for metals, gold & diamonds.	
4	To dig for oil.	
5	To flood areas to make dams & generate electricity.	

	Impact of Deforestation
1	An area the size of 20 football pitches is destroyed every 60 seconds.
2	% of the tropical rainforests we had are gone.
3	28,000 species of animals are expected to become extinct in the next 25 years.
4	Local people's homes are destroyed.
5	Levels of carbon dioxide in the air are increasing and oxygen is decreasing.





	Location, Layers and features		
1	Equator	Imaginary line through the middle of the Earth that receives the most sunlight.	
2	Tropic of Cancer Tropic of Capricorn	Imaginary lines north and south of the equator. Most rainforests can be found between these two lines.	
3	Emergent Layer	Giant tress that enjoy the most sun but high winds & cold.	
4	Canopy	Dense layer of trees overlapping each other. Home to most animals in rainforests.	
5	Understory	Relatively dark, open area below the canopy.	
6	Undergrowth	Also known as the forest floor, mainly consisting of fallen leaves, fruit etc. that decomposes as food for trees.	
7	Flora & Fauna	Flora = Plants; Fauna = Animals.	
8	Nocturnal	Animal that comes out at night. Sleeps during the day.	
9	Camouflage	Blending in to hide in the natural environment.	
10	Mimicry	Copying the look, sound or behaviour of something.	

	Interesting facts
1	Rainforests cover approximately 6% of the Earth's surface by contain more than ½ of the world's plants. About 90% of organisms are found in the canopy.
2	About 30 million species of plants and animals live in tropical rainforests.
3	There are two types of rainforests – Tropical and Temperate. Tropical rainforests are generally warmer than temperate ones.
4	Many things we have in our homes come from rainforests including: chocolate, sugar, rubber, bamboo and many

medicines.

Tropical Rainforests

"the lungs of the earth"

KEY TERMS



rainforest
South America
ecosystem
deforestation
habitat
interdependent

CAUSES OF DEFORESTATION



space for farming
trees for wood
build roads to mines
dig for oil
flood areas for dams
make electricity

IMPACT OF DEFORESTATION



20 acres every 20 sec

50% of rainforest 25,000 species > 25 yr

O2 decreasing
Increase in CO2

LOCATION/LAYERS/ FEATURES



Equatorial
Tropic of Cancer
Tropic of Capricorn
emergent layer
canopy
undergrowth
flora/fauna
nocturnal
camouflage

INTERESTING FACTS



6% of earth's surface
30 million
plants/animals
2 types
tropical/temperate
chocolate, sugar
rubber, bamboo

Tropical Rainforests

"the lungs of the earth"

Canopy Understory Undergrowth of plant and animals

Tropical Rainforests

"the lungs of the earth"

