



Year 9 - Half term 6

100% Book

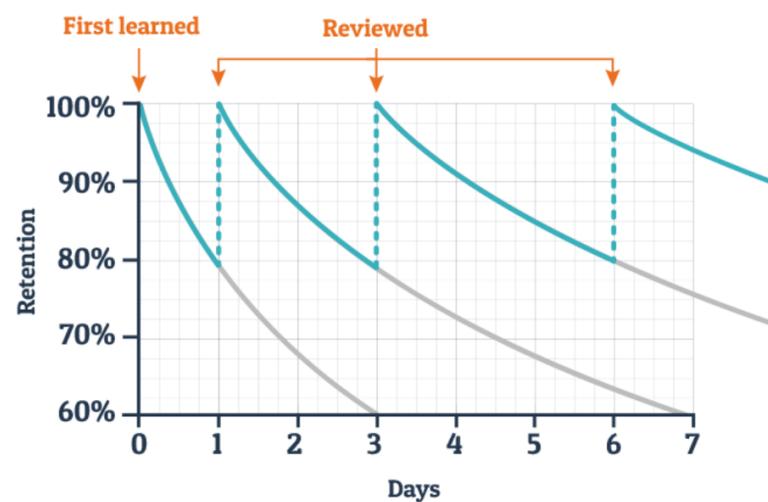
Name: _____

Form Tutor: _____

Your 100% book and knowledge organisers

Your knowledge organisers contain the threshold knowledge you must know for each topic, for each of your subjects. They aim to help you to recap, revisit and revise what you have learnt in lessons in order to remember this knowledge for the long-term. If we don't go back over the new information we learn in lessons we will simply forget it!

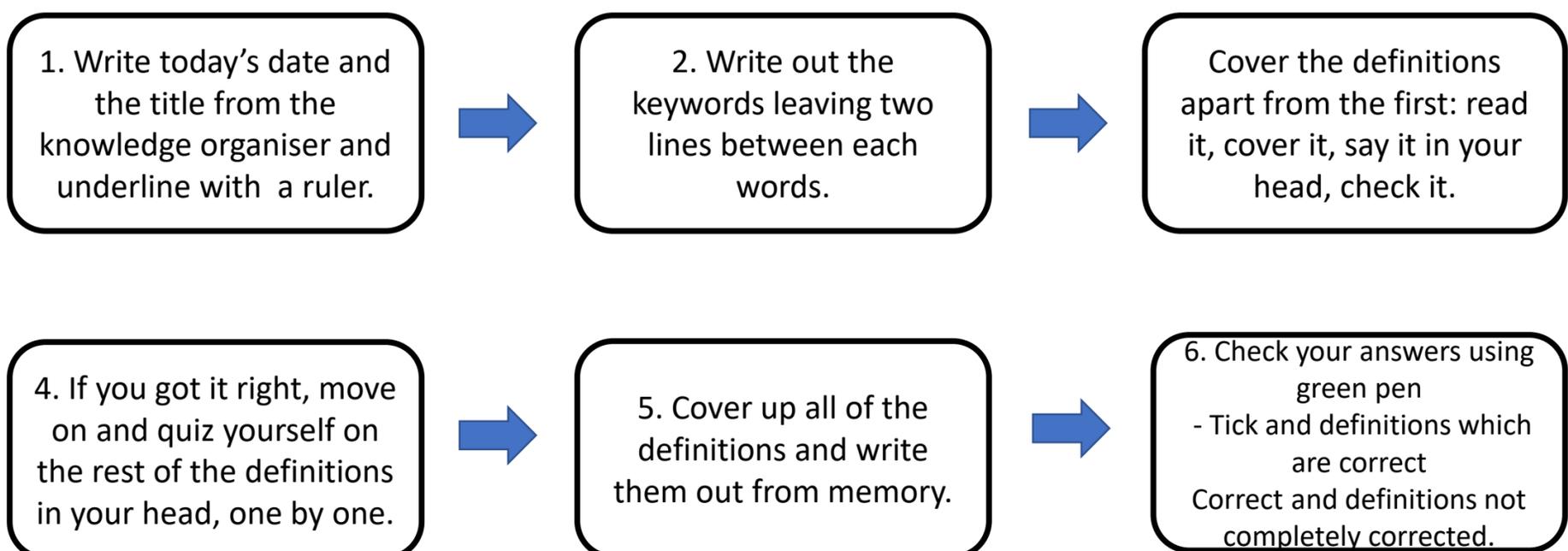
Typical Forgetting Curve for Newly Learned Information



- **You must** have this 100% book with you for every lesson – it is part of your equipment and will be checked each day by your form tutor.
- **You must** keep each of your 100% books once you have finished each half term for revision.

How do I use my 100% book? (Insert you tube link to a demo)

- Your teachers will set HW tasks from them including; spelling tests, ACE tasks, Cold and Hot questions and CMQs.
- You will use your book in lessons to research new knowledge and to test your knowledge of what you have learnt.
- You will use your book to self-quiz and test your knowledge of key terms as part of your HW and revision using the 'memory method' technique below. **You will remember 50% more when you test yourself.**



Another great self-quizzing strategy we recommend is:

- **The Leitner system:** Create Q&A flashcards with a question on one side, and an answer on the other (or key terminology on one side, and definitions on the other). Aim to test yourself several times a week, and revise each card depending on whether you got it right last time or not.



Unit Intent: In KS4, pupils will study Romeo and Juliet in preparation for their Literature Paper 1 exam. We will study the play as a whole and explore themes, characterisation, language, social context and writers intention.

♥♥ Romeo and Juliet

Here's how the lovers go down:



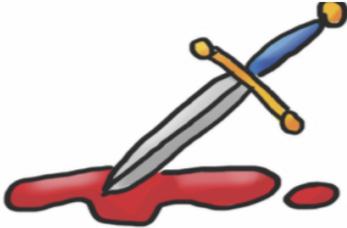
1 The Montagues and Capulets are two feuding families. We open with a street fight. The Prince threatens death if they don't stop.



2 Romeo loves Rosaline, but she doesn't love him. He crashes to Capulet ball and falls in love with Juliet.



3 Marriage
Romeo falls for Juliet and they arrange a secret wedding.



4 Tybalt challenges Romeo but Mercutio defends him-and dies. Romeo kills Tybalt and is banished.



5 Lord Capulet tells Juliet she must marry Paris- he is furious when she refuses.



6 Friar Lawrence helps Juliet to fake her own death so she doesn't have to marry Paris. But Romeo gets the wrong message.



7 Devastated kills Paris on his way to Juliet's body. He drinks poison. When she awakes to find him, Juliet stabs herself. Everyone is heartbroken.

Challenge: can you think of a quotation from each of these key moments?

Romeo and Juliet Themes

 LOVE	 HATE	 SEX	 YOUTH	 ART AND CULTURE	 TRANSIENCE	 MORTALITY
 GENDER	 FATE AND FREE WILL	 MARRIAGE	 FAMILY	 FOOLISHNESS AND FOLLY	 EXILE	

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Challenge: can you think of a specific moment each of these themes appear

Keyword Spellings and Definitions:

Remember to use your 'memory method' techniques to remember 100% of your key terms.

Oxymoron	Personification	Epilogue	Destiny	Shakespeare
Misadventure	Flawed	Monologue	Prologue	Apothecary
Alienation	Romance	Religion	Fortune	Feud
Sequences	Dignity	Soliloquy	Tragedy	Honour
Dramatic Irony	Foreshadow	Protagonist	Antagonist	Juxtaposition

Task:

1. Look, cover, spell.
2. Add the definition of each word in the box

Challenge: can you think of a specific moment each of these appear in the play?

Key Characters:

Romeo
Lord Montague
Lady Montague
Benvolio
Mercutio
Friar Lawrence
Juliet
Lord Capulet
Lady Capulet
The Nurse
Tybalt
Paris

Task: organise the characters into their correct family/allegiance.

Challenge: what is their relationship to each other?

Montague	Capulet

ROMEO AND JULIET - Context

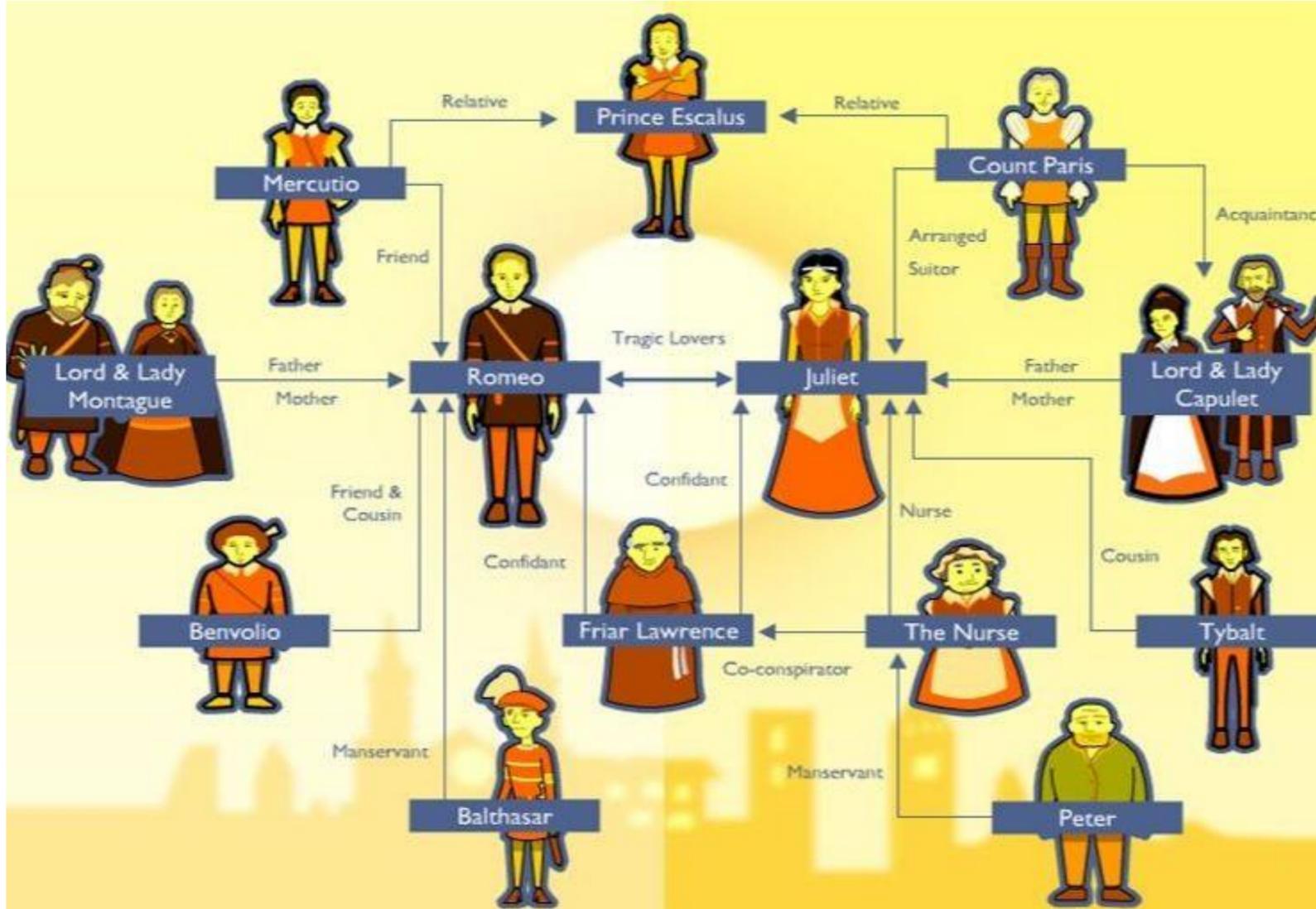
Duelling and the concept of honour: Maintaining the honour of your family name was hugely important at the time. If you were challenged to a duel and you refused, you would be deemed a coward, thus damaging your honour and the status of your family. Most Elizabethan gentlemen carried swords in public and many did fight in the streets.

Courtly Love and cures for lovesickness: common in medieval literature where a knight was consumed with passion for an unattainable noblewoman; Romeo fits this perfectly. Elizabethan doctors saw unrequited love or desire as a disease, a type of melancholy sometimes called lovesickness. They tried various cures and sometimes sent patients to church to confess to a priest. They believed that if lovesickness was left untreated, it could lead to madness.

Role of women in a patriarchal society: Elizabethan England was a society controlled by men. Women were seen as the weaker sex and were expected to be meek and mild, and most importantly, obedient to their fathers and their husbands.

Arranged marriages: Marriages amongst the wealthy were arranged by parents in order to match or improve social standing. However, in practice, parents did try to choose someone their child liked and was happy to marry. Secret marriages such as that between the young Romeo and Juliet would have been both illegal and shocking.

The Italian setting of the play: The play is set in Italy, which was known for its warring states. It is also a Catholic country; religion was extremely important and marriage vows were seen as sacred – once made, they could not be broken.



Hot and Cold Questions: Can you get 100%?

True or false?

1. Romeo is the leader of the street fight in the beginning
2. Rosaline does not love Romeo
3. Juliet wants to marry Paris
4. Mercutio defends Romeo's honour to Tybalt
5. Romeo kills Mercutio
6. Friar Lawrence helps Juliet fake her own death
7. Juliet tells the Nurse about her plan
8. Romeo gets the wrong information about the plan
9. Juliet drinks poison
10. Both Romeo and Juliet die, ending the feud.

Extend:

1. Who starts the street fight in the beginning?
2. What does The Prince threaten if the fighting doesn't stop?
3. How does the relationship between Lord Capulet and Juliet change?
4. Why does Tybalt want to fight Romeo?
5. Who helps Romeo and Juliet to arrange their secret wedding?
6. Why does Juliet insist on marriage?
7. What metaphors does Romeo use to woo Juliet? Why is this important?
8. Who delivers that wrong bad news to Romeo?
9. Who does Romeo go to in order to buy poison?
10. Who is guarding Juliet's body when Romeo arrives?
11. Who explains to everyone how both Romeo and Juliet are dead at the end?

Who's line is it anyway?

1. Peace? I hate the word, as I hate sin, all Montague's and thee.
2. She is the hopeful lady of my earth...
3. My lips, two blushing pilgrims...
4. My only lovesprung from my only hate
5. A rose by any other name would smell as sweet

1. They jest at scars that never felt the wound
2. Oh come dishonourable vile submission
3. She doth teach the torches to burn bright
4. Out you baggage!
5. I am fortunes fool!



STC3

Keyword Spellings and Definitions



Remember to use your 'memory method' techniques to remember 100% of your key terms

Compare - look at features of each set of data and discuss similarities and differences

Mode - the most common/frequent data

Mean - the average calculated by adding up the overall total and dividing it by how many pieces of data there are

Range - the difference between the highest and lowest piece of data

Median - the middle piece of data (when in order)

Stem and leaf - diagram for organising data using the first significant figure as then stem

Correlation - a measurement of how strongly connected 2 sets of data are

Outliers - extreme pieces of data

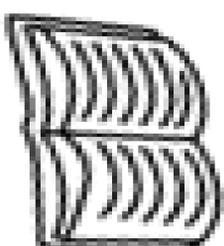
Central tendency - mode, median, mean

Variable - a quantity that may change

Bivariate data - data from 2 variables e.g maths test results an English test results

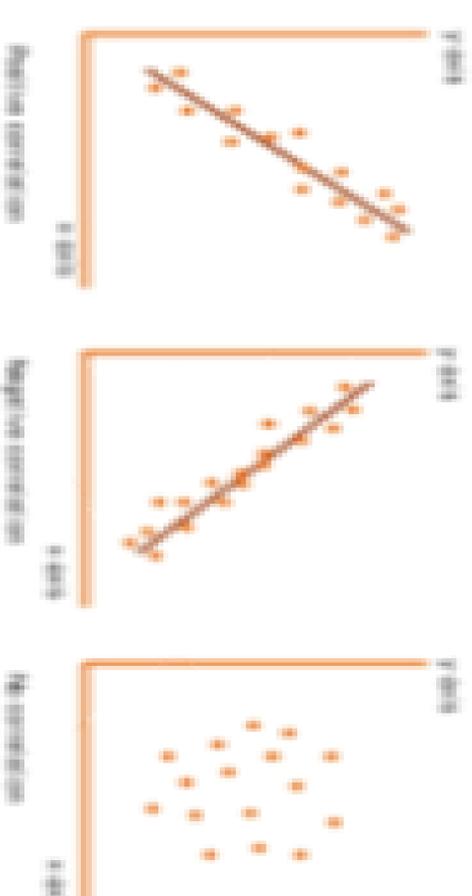
Line of best fit - a line that goes roughly through the middle of the all the scatter graph points

100%



Unit intent: Pupils should be able to compare and interpret data

Types of Correlation:



Bring correlation - the points lie close to the line of best fit
Weak correlation - the points are spread out from the line of best fit but still within the trend

LEARN

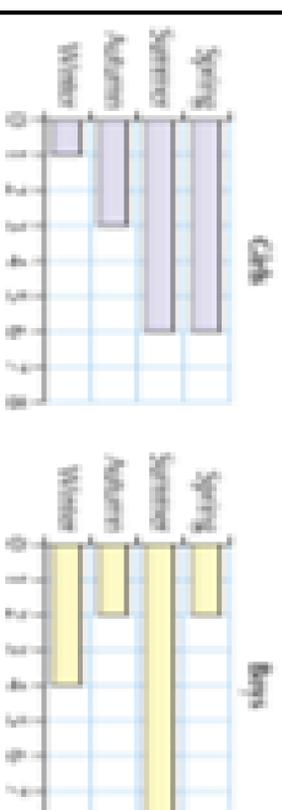
THIS!



C H A L L E N G E

A survey was taken in a class to find out girls' and boys' favourite seasons.

These charts show the results.



- How many chose summer as their favourite season?
- Which was the least favourite season among the girls?
- Ava said 'Three times as many girls as boys like spring best.' Is she correct? Explain how you know.

STC5

STC6

Maths Knowledge Organiser Year 9 Unit 19 - Interpreting data

Averages

Bar charts and pie charts

stem and leaf

scatter graphs

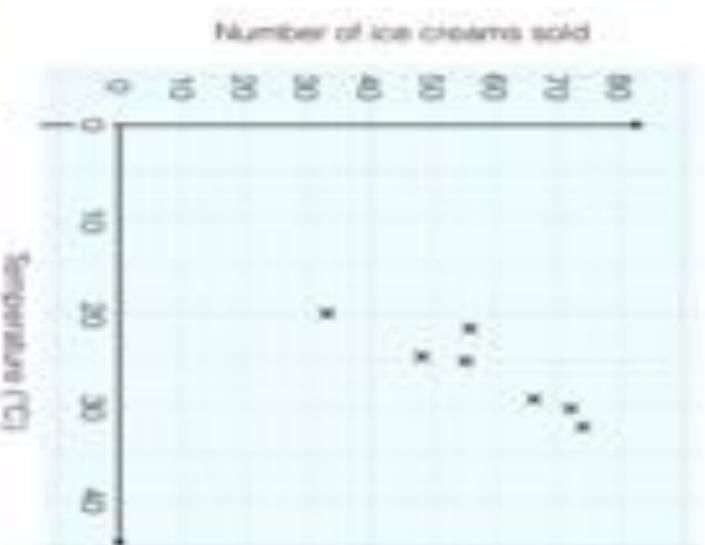
Skills check

Are you 100% ready to answer these questions based on your learning so far? And Can you get 100% right?

STC2

STC3

STC6



Nell owns an ice cream van. This scatter diagram shows information on the temperature and number of ice creams he sold each afternoon from 1st August to 7th August.

- Why are there seven crosses on the diagram?
- On 6th August, it was 21 °C in the afternoon and he sold 40 ice creams. Plot this information on the graph.
- Describe the correlation between the temperature and number of ice creams sold.
- Draw a line of best fit on the scatter graph.
- On 9th August, it was 29 °C. Estimate the number of ice creams Nell sold that afternoon.
- On 28th September, it was 10 °C. Does it make sense to use your line of best fit to estimate how many ice creams Nell sold that day?

STC3

STC5

This back-to-back stem-and-leaf diagram shows the marks for a group of boys and girls in a history test.

History test topic
Read the boys' marks from right to left.

Boys		Girls	
9	6	5	3
9	4	6	2
9	4	6	2
5	4	4	2
		5	1

Key Boys: 2 represents 42 marks
Girls: 3 represents 35 marks

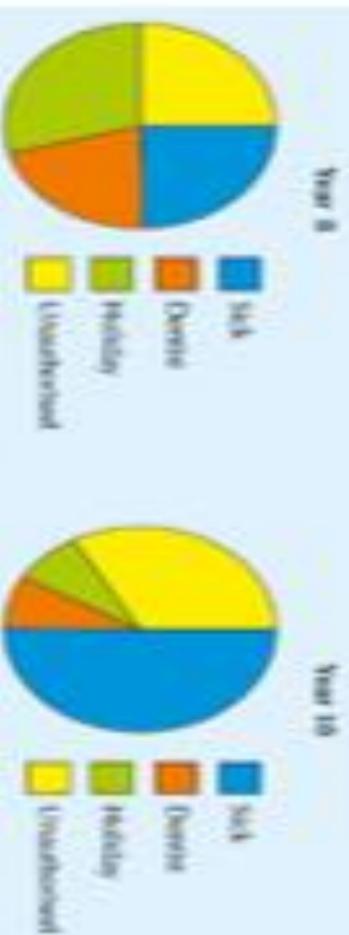
- Write down the range of marks for the boys.
- Write down the range of marks for the girls.
- Work out the median mark for the boys.
- Work out the median mark for the girls.
- What overall conclusion can you draw from this data?

STC4

ACE question

A teacher is comparing the reasons for the absence of pupils who have had time off school.

The charts show the reasons for absence of two different year groups.



One hundred pupils in Year 8 and 40 pupils in Year 10 had time off school.

The teacher says 'The charts show that more pupils in Year 10 than in Year 8 were absent because they were sick.'

Use ACE to analyse his answer.

A

C

E

Remember to use your 'memory method' techniques to remember 100% of your key terms

Transformation - changing a shape by performing a reflection, translation, rotation or enlargement

Reflection - flip a shape over a mirror line

Mirror line - this is the line where a shape has been reflected

Rotation - turn a shape

Centre - the point from which a rotation or enlargement has been done

Enlargement - change the size of a shape

scale factor - this is how many times bigger or smaller the shape has become

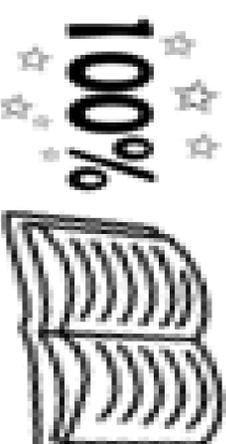
Fractional - a fraction scale factor will make a shape smaller

Translation - to move a shape but not change it's size or orientation

Vector - this is a way of writing an instruction for a translation

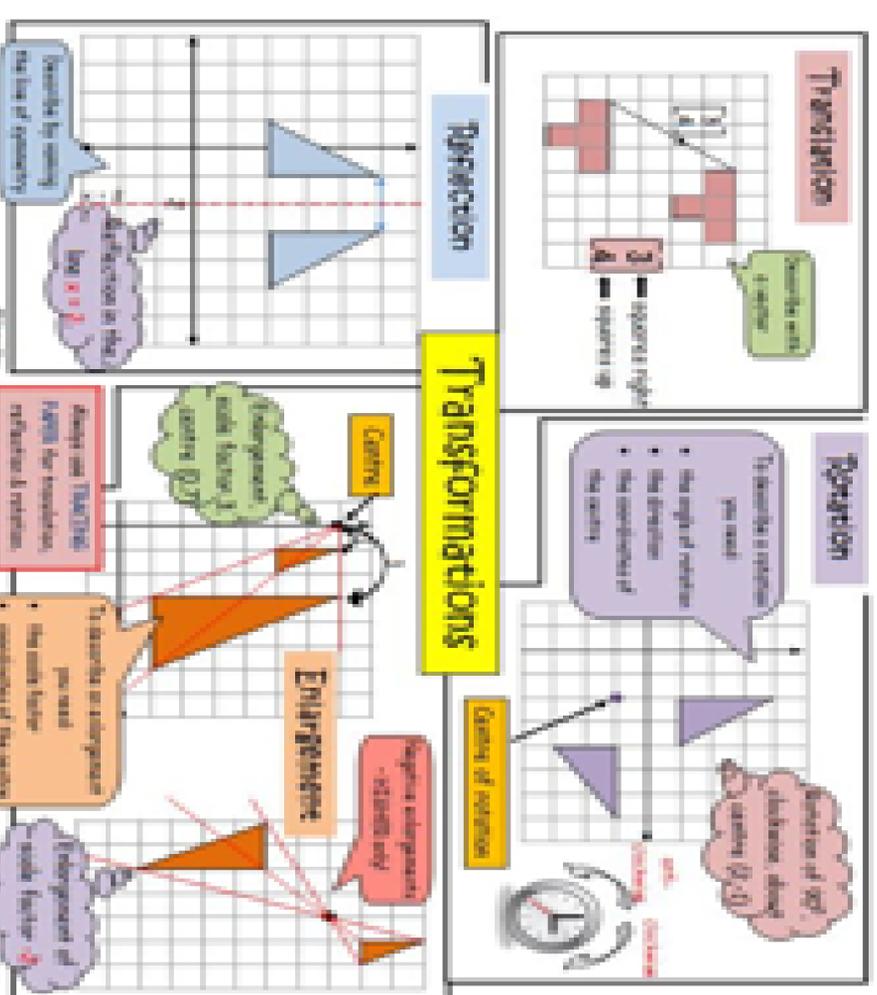
Combined transformation - more than one transformation

Describe - state all the features of the transformation, including which transformation has occurred



100%

Unit intent: Pupils should be able to draw and describe transformations



LEARN

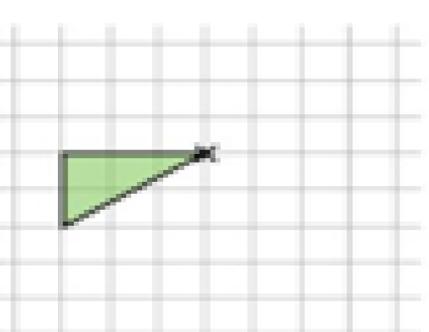
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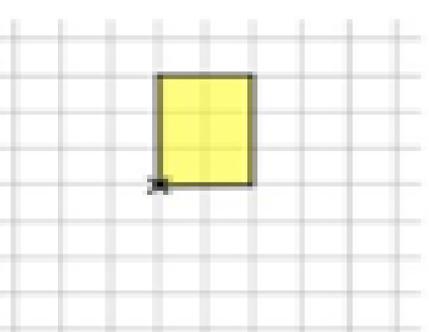
Rotate each of these shapes about the given points as described:

STC5

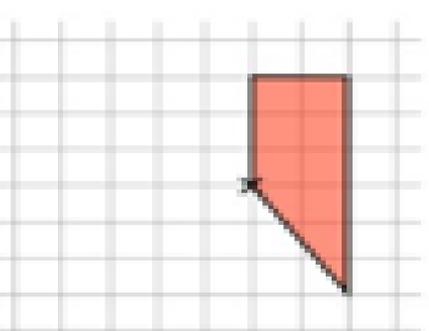
CHALLENGE



90° anticlockwise



90° clockwise



180°

Maths Knowledge Organiser Year 9 Unit 20 - Transformations

Rotate

Reflect

Translate

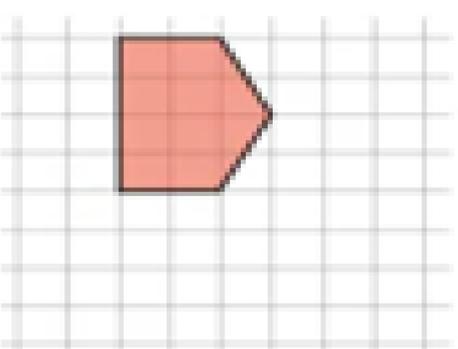
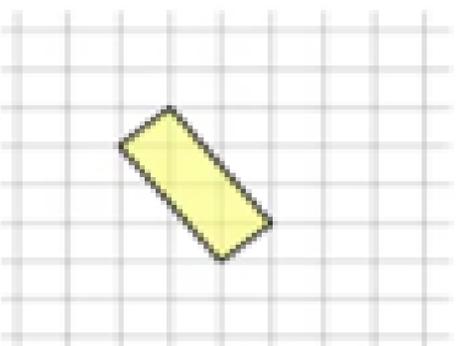
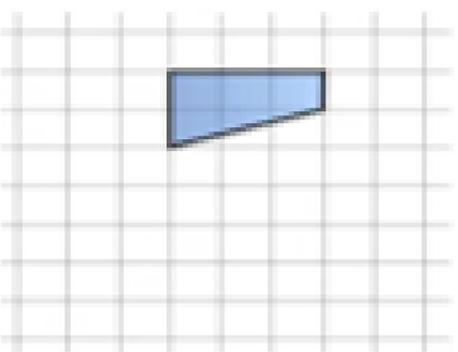
Enlarge

Skills check

Are you 100% ready to answer these questions based on your learning so far? And Can you get 100% right?

STC5

Translate each of these shapes by the given vectors:



$$\begin{pmatrix} 3 \\ 0 \end{pmatrix}$$

$$\begin{pmatrix} 0 \\ 3 \end{pmatrix}$$

$$\begin{pmatrix} 2 \\ 3 \end{pmatrix}$$

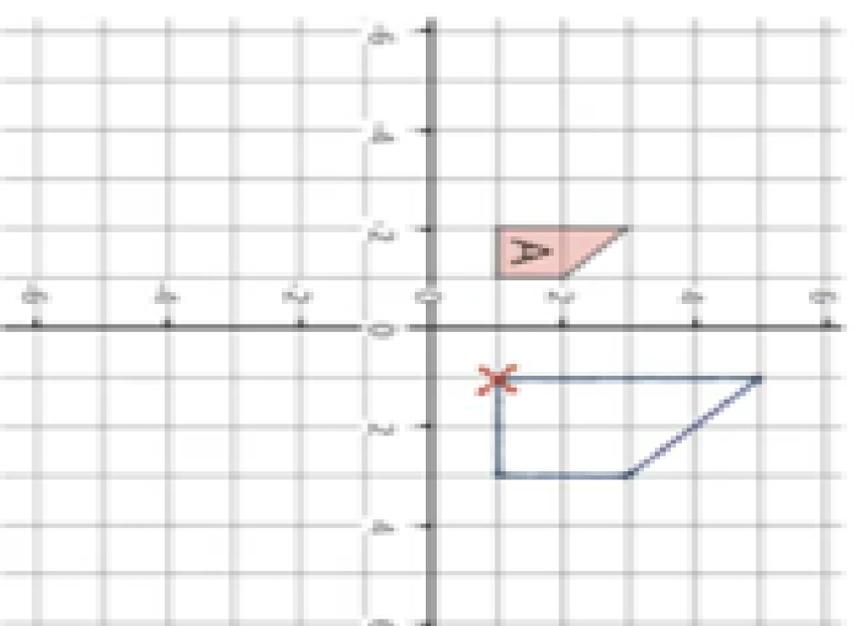
STC4

ACE question

Enrico thinks he has enlarged trapezium A by scale factor 2 using the centre of enlargement (1, 1).

Enrico is wrong.

What is his mistake?



Use ACE to analyse his answer

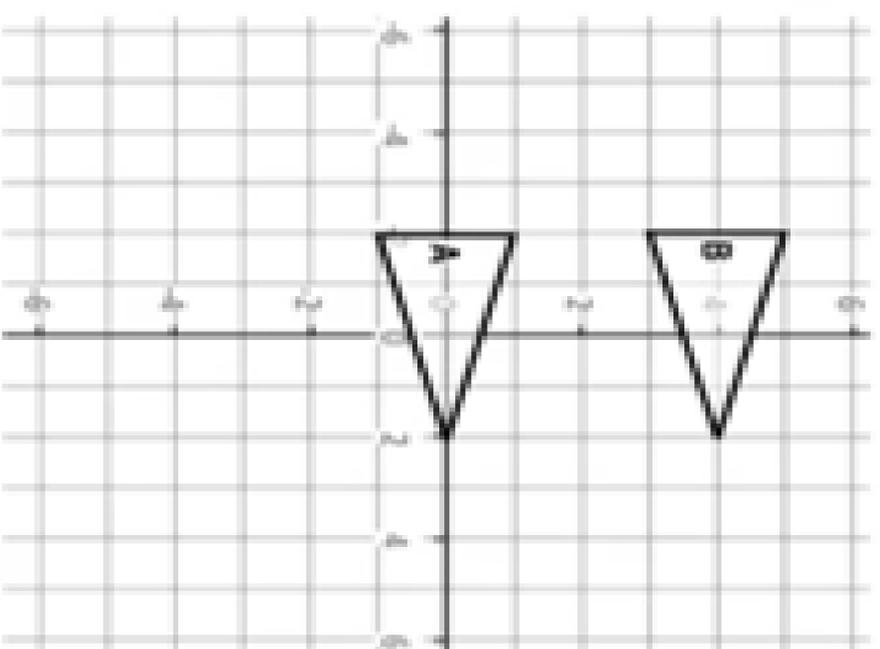
STC5

A

STC6

C

- a) Write down the equation of the mirror line that reflects shape A onto shape B.
- b) Reflect shape A in the line $x = -2$.



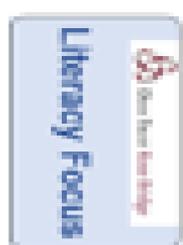
E



Unit intent: Pupils should be able to identify congruent and similar shapes and use knowledge to solve problems

STC3

Keyword Spellings and Definitions



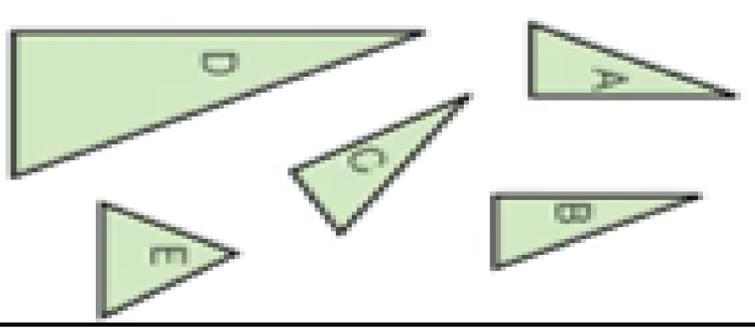
Remember to use your 'memory method' techniques to remember 100% of your key terms

Two objects are **congruent** if they have the same shape and size. Two congruent shapes will have the same dimensions and the same interior angles. Rotation, reflection and translation do not affect congruence.

Objects A, B and C are congruent. D is not congruent to the other objects because it is larger, and E is not congruent to the other objects because it is a different shape.

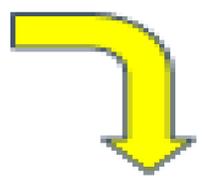
Two objects are **similar** if they have the same shape - but they don't have to be the same size. This means that shapes which are enlargements of each other are similar. (Remember if X is an enlargement of Y with scale factor 2, then Y is an enlargement of X with scale factor 0.5.) It also means that two similar shapes will have the same interior angles.

Objects A, B, C and D are therefore similar. Remember, objects that are the same size can be considered enlargements of scale factor 1.



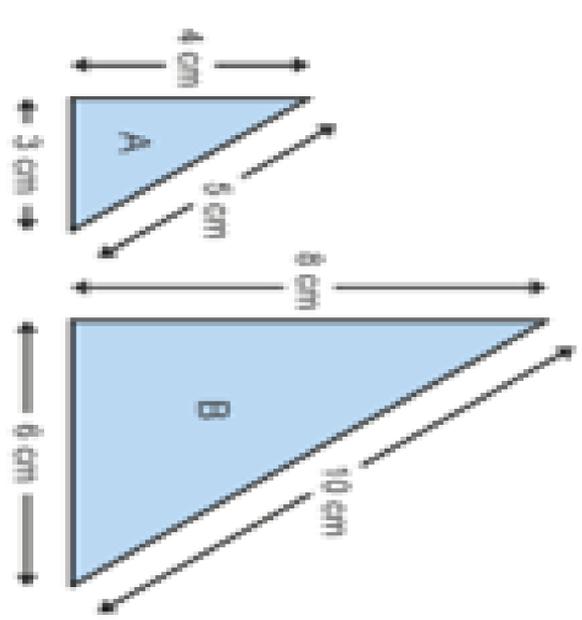
LEARN

THIS!



Similar triangles

Two triangles are similar if the angles are the same size or the corresponding sides are in the same ratio. Either of these conditions will prove two triangles are similar.



Triangle B is an enlargement of triangle A by a **scale factor** of 2. Each length in triangle B is twice as long as in triangle A. The two triangles are similar.

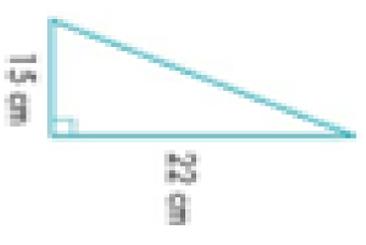
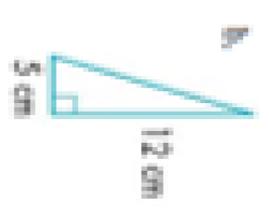
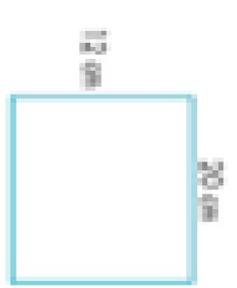
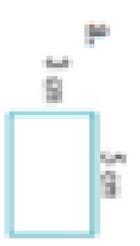
Congruent - exactly the same shape

Similar - same shape but one is exactly so many times bigger than the other

Scale factor - the amount of times one shape is larger than the other

CHALLENGE

Are these pairs similar? If so, give the scale factor. If not, give a reason.



STC5

STC6

Maths Knowledge Organiser Year 9 Unit 21 - Similarity

Congruent shapes

Lengths of similar shapes

Similar triangles

Similar area and volume

Skills check

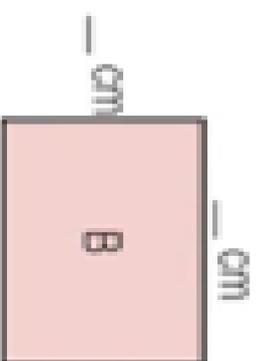
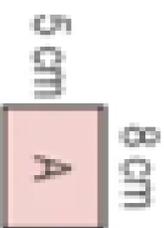
Are you 100% ready to answer these questions based on your learning so far? And Can you get 100% right?

STC3

Here are two rectangles, A and B.

Rectangle B is an enlargement of rectangle A of scale factor 2.

STC5



STC6

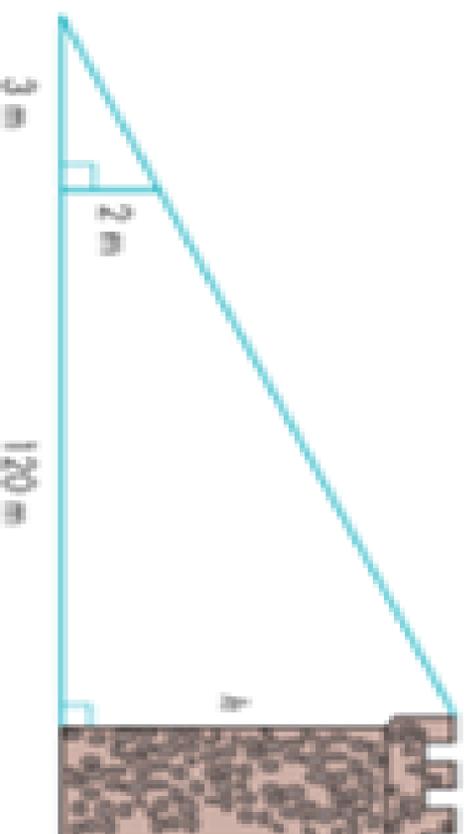
- Fill in the missing dimensions for rectangle B.
- Work out the perimeter of rectangle A and the perimeter of rectangle B. What do you notice?
- Work out the area of rectangle A and the area of rectangle B. What do you notice?

STC1

STC2

STC6

This diagram shows a method of working out the height of a tower.



A rock, 3 m high, is placed upright in the ground 120 m from the base of a tower.

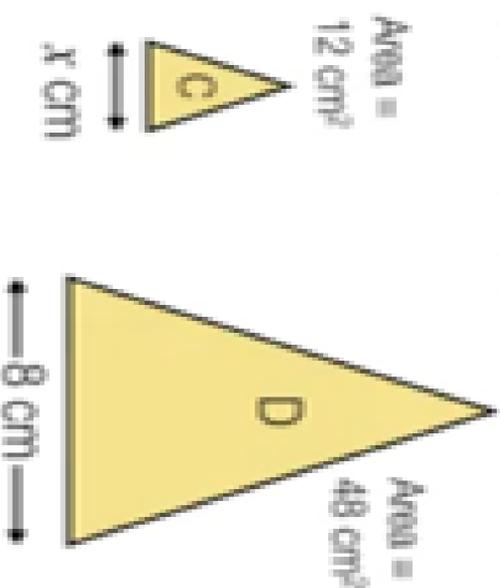
The top of the tower and the top of the rock are in line with a point on the ground 1 m from the base of the rock. How high is the tower?

STC4

ACE question

Here are two similar triangles.

The area of C is 12 cm^2 and the area of D is 48 cm^2 .



Andrew says that x is 2 cm because the scale factor is 4.

Working out:

$$12 \times 4 = 48$$

$$2 \times 4 = 8$$

Use ACE to analyse his answer

A

C

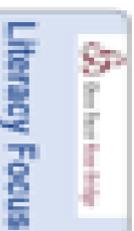
E



Unit intent: Pupils should be able to construct accurate drawings using a compass, protractor and ruler

STC3

Keyword Spellings and Definitions



Remember to use your 'memory method' techniques to remember 100% of your key terms

Construct - draw using compass, protractor and ruler

Bisect - cut in half

Perpendicular - forms a right angle

Loci - a set of all points whose location satisfies or is determined by one or more specified conditions

Use a ruler and compasses to accurately construct a triangle whose sides are 9 cm, 10 cm and 14 cm. Do not rub out your construction lines.

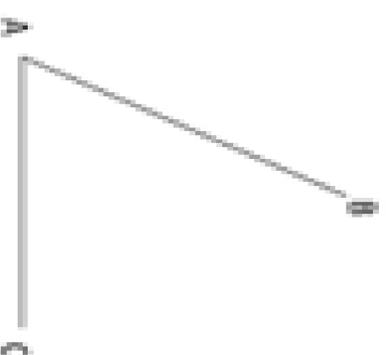
STC5

PERPENDICULAR BISECTOR

1. Place compass at A, set over halfway and draw 2 arcs.
2. Place compass at B, with same distance set and draw 2 arcs to intersect first two.
3. Draw the perpendicular bisector through the points of intersection.

ANGLE BISECTOR

1. Place compass at A, and draw an arc crossing AB and AC.
2. Place compass at intersection and (with the same distance set) draw 2 arcs that intersect.
3. Draw the angle bisector from A through the point of intersection.



LEARN

THIS!



PERPENDICULAR TO A POINT ON A LINE

LINE

1. Place compass at P and with distance PA set, draw arc at C.
2. With compass at A and distance set greater than AP, draw arc above line AB.
3. Repeat with compass at C and same distance set.
4. Draw line through intersection of arcs to P. This line is perpendicular to P.



PERPENDICULAR TO A LINE FROM A POINT NOT ON THE LINE

A POINT NOT ON THE LINE

1. With centre P, draw an arc of a circle that intersects AB at 2 points.
2. With centre C and compass set over X distance CD draw arc below AB.
3. With centre D and same distance set, draw an arc to intersect the previous one.
4. The line through P and the intersecting arcs is perpendicular to AB.



C H A L L E N G E

Maths Knowledge Organiser Year 9 Unit 22 - Construction

Construct triangles

Bisect a line

Bisect an angle

Loci

Skills check

Are you 100% ready to answer these questions based on your learning so far? And Can you get 100% right?

STC3

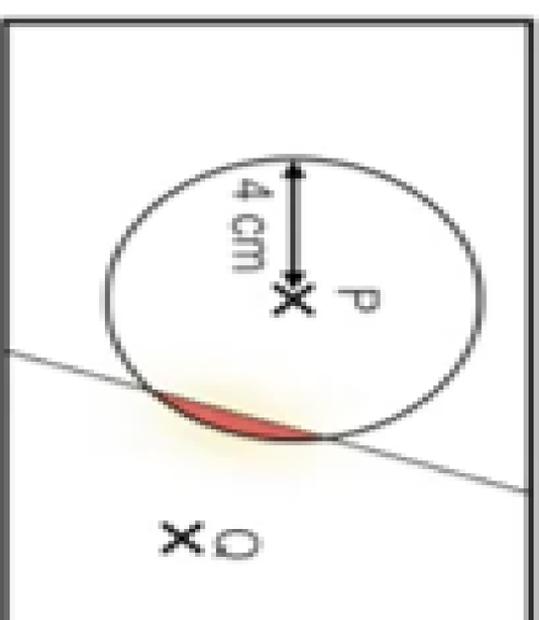
STC5

Construct the perpendicular bisector of this line using only a straight edge and compass.

STC4

ACE question

Jane is asked to shade in the region that shows the locus of all points that are closer to P than Q and less than 4cm from P.



Use ACE to analyse her answer

STC2

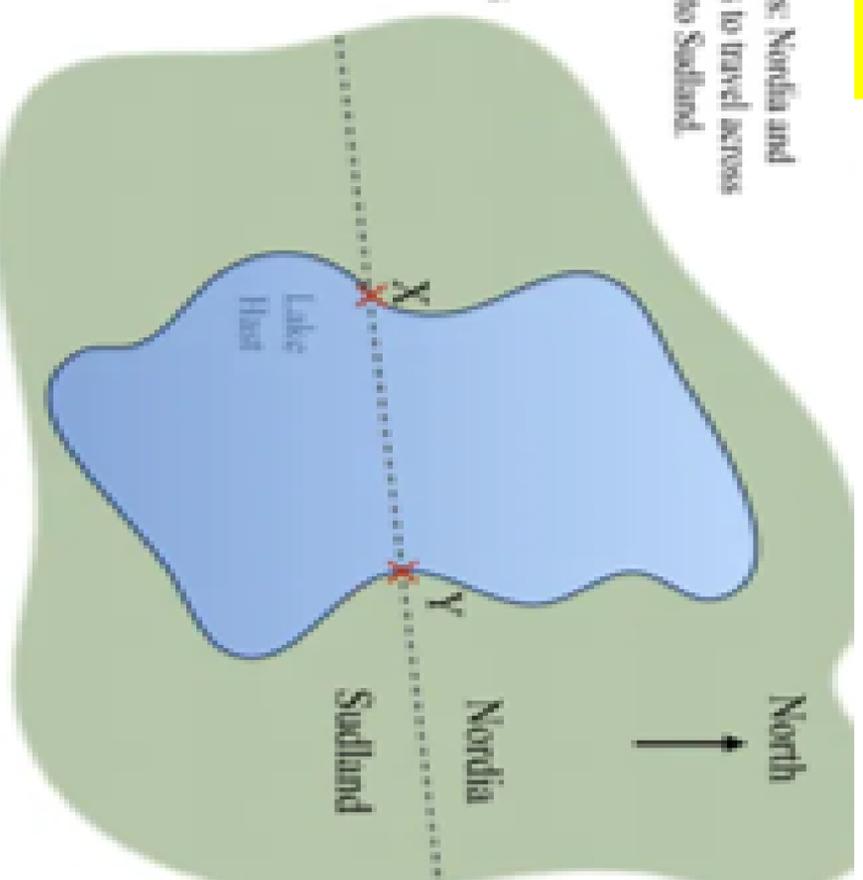
STC3

STC6

Lake Hasi spans two countries: Nordia and Sudland. A secret agent needs to travel across the lake by boat from Nordia to Sudland.

There are border detection posts at the points marked X and Y. The secret agent wants to travel a route so that the boat is always equidistant from X and Y.

Construct the boat's route using a ruler and compass. Do not rub out your construction lines.



A

C

E



Unit intent: To understand the structure, function and processes associated with specialised cells in both animals and plants.

Edexcel GCSE Biology Key Concepts Part 1

Eukaryotes complex organisms
contains all the parts of animal cells plus extras

cytoplasm	site of chemical reactions in the cell	gel like substance containing enzymes to catalyse the reactions
nucleus	contains genetic material	controls the activities of the cell and codes for proteins
cell membrane	semi permeable	controls the movement of substances in and out of the cell
ribosome	site of protein synthesis	mRNA is translated to an amino acid chain
mitochondrion	site of respiration	where energy is released for the cell to function

animal cell

Prokaryotes simpler organisms
Bacterial cells are much smaller than plant and animal cells

cell membrane	site of chemical reactions in the cell	gel like substance containing enzymes to catalyse the reactions
bacterial DNA	not in nucleus floats in the cytoplasm	controls the function of the cell. Can be found as chromosomal DNA and plasmid DNA (small rings).
cell wall	NOT made of cellulose	supports and strengthens the cell
cytoplasm	semi permeable	controls the movement of substances in and out of the cell
flagella	whip like tail	allows the bacterial cell to move
ribosome	site of protein synthesis	mRNA is translated to an amino acid chain

plant cell

Specialised cells

egg	<i>fertilised by a sperm</i>		nutrients in the cytoplasm, haploid nucleus and changes in the cell membrane after fertilisation
sperm	<i>fertilise an egg</i>		streamlined with a long tail acrossome containing enzymes large number of mitochondria, haploid nucleus
Ciliated epithelial cell	<i>push and move mucus</i>		Thin layer of moving hairs on the surface of the cells called cilia.

Microscopy

magnification M = $\frac{\text{size of image I}}{\text{real size of the object A}}$

Estimates can be useful when you only have a sample of what you are counting e.g. the number of red blood cells in a blood sample

Many of the structures found in cells were not able to be seen before the development of electron microscopes e.g. ribosomes

PREFIXES

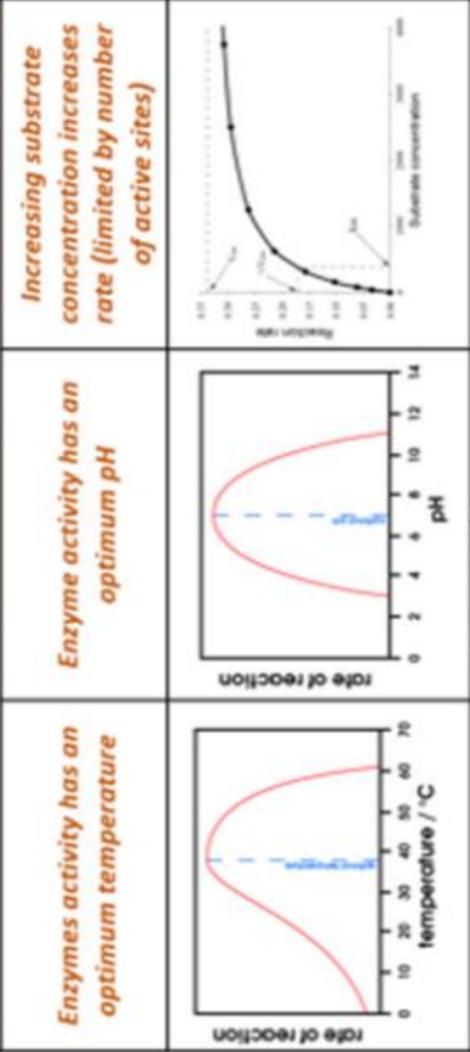
Prefix	Multiple	Standard form
centi (cm)	1 cm = 0.01 m	$\times 10^{-2}$
milli (mm)	1 mm = 0.001 m	$\times 10^{-3}$
micro (μm)	1 μm = 0.000 001 m	$\times 10^{-6}$
nano (nm)	1nm = 0.000 000 001 m	$\times 10^{-9}$
pico (pm)	1pm = 0.000 000 000 001m	$\times 10^{-12}$

decreasing size and scale

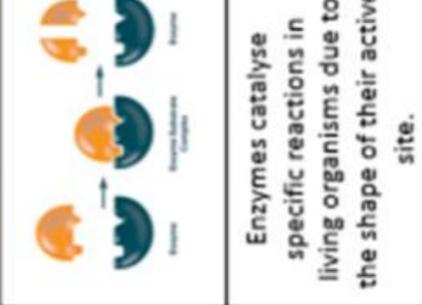
Feature	Light (optical) microscope	Electron microscope
Radiation used	Light rays	Electron beams
Max magnification	~ 1500 times	~ 2 000 000 times
Resolution	200nm	0.2nm
Size of microscope	Small and portable	Very large and not portable
Cost	~£100 for a school one	Several £100,000 to £1 million plus

Enzymes catalyse (increase the rate of) specific reactions in living organisms.

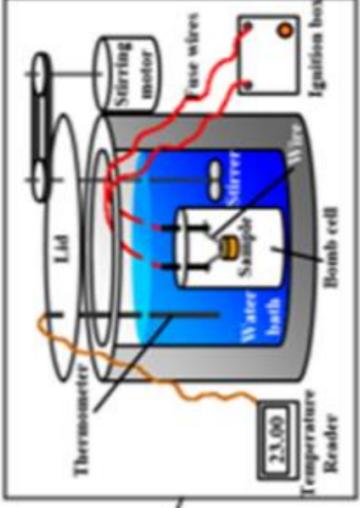
The activity of enzymes is affected by changes in temperature, pH and substrate concentration



The 'lock and key theory' is a simplified model to explain enzyme action



The energy in food can be calculated by how much it heats up water when it burns in a calorimeter.



Calculate percentage gain/loss of mass in osmosis.

Enzymes

Edexcel GCSE Biology Key Concepts Part 2

Digestive enzymes speed up the conversion of large insoluble molecules (food) into small soluble molecules that can be absorbed into the bloodstream.

Large changes in temperature or pH can stop the enzyme from working (denature).

Temperature too high

pH too high or too low

Enzyme changes shape (denatures) the substrate no longer fits the active site.

Osmosis

The greater the difference in concentrations the faster the rate of diffusion.

$$\% \text{ change in mass} = \frac{(\text{final mass} - \text{initial mass})}{\text{initial mass}} \times 100$$

Transport in cells

Diffusion No energy required	Movement of particles in a solution or gas from a higher to a lower concentration	E.g. O ₂ and CO ₂ in gas exchange, urea in kidneys. Factors that affect the rate are concentration, temperature and surface area.
Osmosis No energy required	Movement of water from a dilute solution to a more concentrated solution	E.g. Plants absorb water from the soil by osmosis through their root hair cells. Plants use water for several vital processes including photosynthesis and transporting minerals.
Active transport ENERGY required	Movement of particles from a dilute solution to a more concentrated solution	E.g. movement of mineral ions into roots of plants and the movement of glucose into the small intestines.

The products of digestion are used to build new carbohydrates, lipids and proteins. Some glucose is used for respiration.

Carbohydrases (e.g. amylase)	Made in salivary glands, pancreas, small intestine	Break down carbohydrates to simple sugar (e.g. amylase breaks down starch to glucose).
Proteases	Made in stomach, pancreas	Break down protein to amino acids.
Lipases	Made in pancreas (works in small intestine)	Break down lipids (fats) to glycerol and fatty acids.

Keywords: Remember to use your ‘memory method’ techniques to remember 100% of your key terms.

<p>Eukaryote— any cell or organism that possesses a clearly defined nucleus. The eukaryotic cell has a nuclear membrane that surrounds the nucleus, in which the well-defined chromosomes (bodies containing the hereditary material) are located.</p>	<p>Prokaryote— a microscopic single-celled organism which has neither a distinct nucleus with a membrane nor other specialized organelles, including the bacteria and cyanobacteria.</p>	<p>Epithelial— <i>Epithelial</i> tissues are thin tissues that cover all the exposed surfaces of the body. They form the external skin, the inner lining of the mouth and digestive tract</p>	<p>Chloroplast— found only in algal and plant cells, is a cell organelle that produces energy through photosynthesis. ... It has a high concentration of chlorophyll, which captures light energy, and this giving plants and algae a green colour.</p>	<p>Vacuole— a space or vesicle within the cytoplasm of a cell, enclosed by a membrane and typically containing fluid</p>
<p>Mitochondria— an organelle found in large numbers in most cells, in which respiration and energy production occur. It has a double membrane, the inner part being folded inwards to form layers</p>	<p>Enzyme— a substance produced by a living organism which acts as a catalyst (speed up a chemical reaction in the body) to bring about a specific biochemical reaction.</p>	<p>Diffusion— is the movement of a substance from an area of high concentration to an area of low concentration. <i>Diffusion</i> happens in liquids and gases because their particles move randomly from place to place.</p>	<p>Osmosis— a process by which molecules of a solvent tend to pass through a semipermeable membrane from a less concentrated solution into a more concentrated one.</p>	<p>Chlorophyll— a green pigment, present in all green plants and in cyanobacteria, which is responsible for the absorption of light to provide energy for photosynthesis.</p>
<p>Magnification— <i>Magnification</i> is the process of enlarging the apparent size, not physical size, of something.</p>	<p>Glycerol— a clear, thick liquid found in fats and oils, which is used in making many things, including explosives and medicines</p>	<p>Denatured— to change the characteristics of a substance, (usually an enzyme) for example by the action of heat or an acid.</p>	<p>Substrate— <i>A substrate</i> is also a substance which an enzyme acts on to produce a chemical reaction.</p>	<p>Specialised— to be adapted to a special function or environment.</p>

Cold and Hot Questions:



Homework

Are you 100% ready to answer these questions based on your learning so far?

And Can you get 100% right?

Cold Questions:

1. What is the function of the nucleus?
2. Give an example of a eukaryotic cell.
3. Give an example of a prokaryotic cell.
4. What is the function of the mitochondria?
5. What do the ribosomes do?
6. Give an example of a specialised cell and describe how it is adapted for its' role.
7. What is the function of the ciliated epithelial cell?
8. What is an enzyme?
9. How can the function of an enzyme be influenced?
10. What enzyme breaks down carbohydrates?

Hot Questions:

1. Suggest why our knowledge about the sub-cellular structures in cells has improved over time?
2. How can plasmolysis of a cell be brought about?

Careers corner

Earn yourself 50 class-chart points by re-searching a career linked to your current science topic. Examples include:

**Phlebotomist, General practitioner (GP),
Bacteriologist**

You can use <https://www.startprofile.com> to find out about lots of different science related careers.



Useful websites:

Pearson Active Learn:

Password: rosebridge1

<https://www.pearsonactivelearn.com/app/Home>

BBC Bitesize: Edexcel

<https://www.bbc.co.uk/bitesize/examspecs/zqkww6f>

Seneca Learning:

<https://www.senecalearning.com/>



Unit intent: To understand that substances can exist in different states, how they move between states and how we can use this to separate mixtures.

EDEXCEL TOPIC 2: STATES OF MATTER AND MIXTURES 1

States of matter

Melting and freezing happen at melting point, boiling and condensing happen at boiling point.

Solid, liquid, gas

s	l	g
solid	liquid	gas

The amount of energy needed for a state change depends on the strength of forces between particles in the substance.

Gas particles have higher levels of energy than liquids and solids.

Gas particles move more than the other states of matter, with solids moving the least due to their tightly packed arrangement. Solid particles can only vibrate around their fixed positions.

Method of separating substances

Pure substances melt and boil at specific temperatures. Heating graphs can be used to distinguish pure substances from impure.

Pure substances

A pure substance is a single element or compound, not mixed with any other substance.

Chromatography

Position solvent reaches

Mixture separated

Mixture

Solvent

Fractional distillation

The hydrocarbons in crude oil can be split into fractions.

Each fraction contains molecules with a similar number of carbon atoms in them. The process used to do this is called fractional distillation.

Crude oil is heated and hydrocarbons boil and condense at certain temperatures.

This is due to the different lengths of hydrocarbon chains.

Simple distillation

Used to separate a mixture of liquids

During distillation, the mixture gets heated causing one liquid at a time to evaporate and then condense in the Liebig condenser.

Each of the liquids in the mixture will have a different boiling point.

This enables the liquids to be separated. Distillation can also be used to analyse purity of a substance as pure substances have a sharp boiling point.

The oils are heated in a furnace.

We depend on many of these fuels; petrol, diesel and kerosene.

Many useful materials are made by the petrochemical industry; solvents, lubricants and polymers.

Distillation

Used to separate a mixture of liquids

Each of the liquids in the mixture will have a different boiling point.

This enables the liquids to be separated. Distillation can also be used to analyse purity of a substance as pure substances have a sharp boiling point.

Using fractions

Fractions can be processed to produce fuels and feedstock for petrochemical industry

Chromatography

Can be used to separate mixtures and help identify substances.

Involves a mobile phase (e.g. water or ethanol) and a stationary phase (e.g. chromatography paper).

R_f Values

The ratio of the distance moved by a compound to the distance moved by solvent.

R_f = distance moved by substance / distance moved by solvent

This depends on the solvent used. A pure substance will produce a single spot in all solvents whereas an impure substance will produce multiple spots.

Pure substances

The compounds in a mixture separate into different spots.

Keywords: Remember to use your 'memory method' techniques to remember 100% of your key terms.

<p>Filtration— the process in which solid particles in a liquid or gaseous fluid are removed by the use of a filter medium that permits the fluid to pass through but retains the solid particles.</p>	<p>Crystallisation—is the process in which crystals are formed either from something that has been melted or from a solution.</p>	<p>Distillation— the action of purifying a liquid by a process of heating and cooling.</p>	<p>Fractional distillation— separation of a liquid mixture into fractions differing in boiling point (and hence chemical composition) by means of distillation, typically using a fractionating column.</p>	<p>Potable—safe to drink; drinkable.</p>
<p>Freezing— change from the liquid to the solid state by loss of heat.</p>	<p>Evaporation—the process of turning from liquid into vapour.</p>	<p>Condensation— the conversion of a vapour or gas to a liquid.</p>	<p>Pure— not mixed with anything else .</p>	<p>Impure—not pure; mixed with something else.</p>
<p>Melting— To be changed from a solid to a liquid state especially by the application of heat.</p>	<p>Desalination - the process of removing salt from sea water .</p>	<p>Chromatography—is a process for separating different components (in a liquid or gas) from a mixture.</p>	<p>Boiling— the action of bringing a liquid to the temperature at which it bubbles and turns to vapour.</p>	<p>Mixture—forms when two or more substances are combined and each of the substances keep its own chemical makeup. This must be done without chemical bonds being formed or broken between the different substances.</p>

Cold and Hot Questions:



Homework

Are you 100% ready to answer these questions based on your learning so far?

And Can you get 100% right?

Cold Questions:

1. What is a pure substance?
2. What does the amount of energy required to change state depend on?
3. What happens at the boiling point?
4. Which has more energy: solid, liquid or gas?
5. Why do we use distillation?
6. What is fractional distillation?
7. What is chromatography?
8. How do you calculate the Rf value?
9. What is filtration?
10. What is crystallisation?

Hot Questions:

1. Describe how to make potable water.
2. Explain the process of desalination.

Careers corner

Earn yourself 50 class-chart points by re-searching a career linked to your current science topic. Examples include:

**Hydrologist, Chemical engineer,
Taxidermist**

You can use <https://www.startprofile.com> to find out about lots of different science related careers.



DEAN TRUST ROSE BRIDGE
Curriculum to
Careers

Useful websites:

Pearson Active Learn:

Password: rosebridge1

<https://www.pearsonactivelearn.com/app/Home>

BBC Bitesize: Edexcel

<https://www.bbc.co.uk/bitesize/examspecs/zqkww6f>

Seneca Learning:

<https://www.senecalearning.com/>

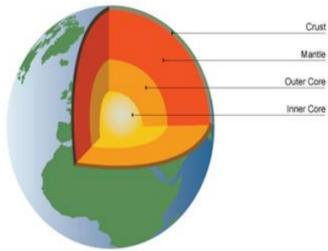


Unit Intent:

To understand how geographical processes interact to create distinctive physical landscapes. Pupils will begin to understand the impact such tectonic hazards can have on populations both positive and negative and how humans have tried to adapt and mitigate the negative effect volcanic eruptions can have on people, the economy and the environment.

Structure of the Earth

- There are 4 layers – inner core, outer core, mantle, crust
- Crust is divided into plates
- 2 types of plate – oceanic (thinner and denser) and continental (thicker and less dense)
- Plates move on convection currents in the mantle
- Places where plates meet are plate boundaries / plate margins



What is a Hazard ?

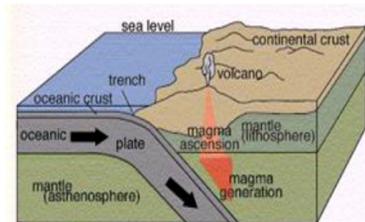
Natural hazards are extreme natural events that can cause loss of life, extreme damage to property and disrupt human activities.

Some natural hazards, such as flooding, can happen anywhere in the world. Other natural hazards, such as tornadoes, can only happen in specific areas. And some hazards need climatic or tectonic conditions to occur, for example tropical storms or volcanic eruptions.

Plate boundaries

Destructive boundary :

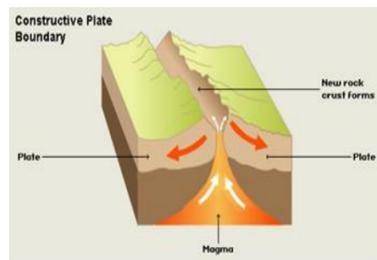
- Oceanic crust and continental crust move together
- Oceanic crust is forced down because it is denser than continental crust
- oceanic crust is destroyed at a subduction zone
- earthquakes and volcanoes can occur as the pressure increases.



Magma is generated at subduction zones where dense oceanic plates are pushed under lighter continental plates.

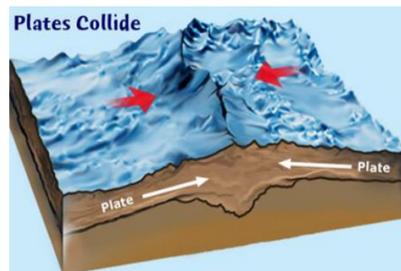
Constructive boundary :

- Convection currents in the upper mantle cause two plates to move away from each other
- magma rises to the surface
- Volcanoes and new crust are formed
- E.g. the Mid Atlantic Ridge



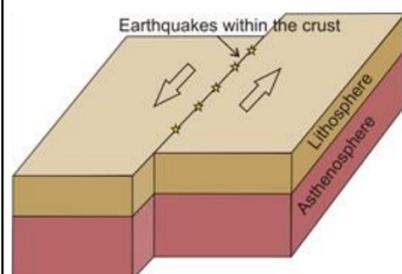
Collision boundary :

- Two continental plates move together
- neither can be destroyed so the crust is pushed upwards
- pressure increases causing fold mountains and earthquakes
- e.g. Himalayas, Asia



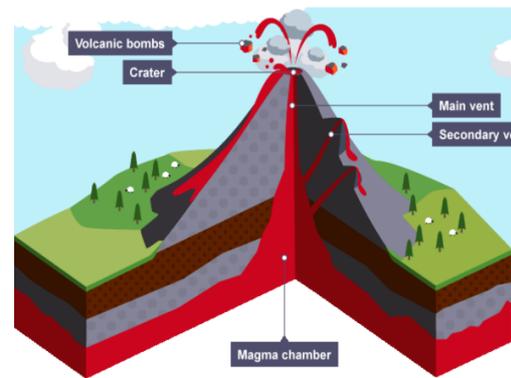
Conservative boundary :

- Plates slide past each other in the same or opposite direction
- Sometimes the lock and pressure builds up until it is released
- Earthquakes occur here
- e.g. the San Andreas Fault.



What is a Volcano

A volcano is an opening in the earth's crust where magma escapes to form lava.

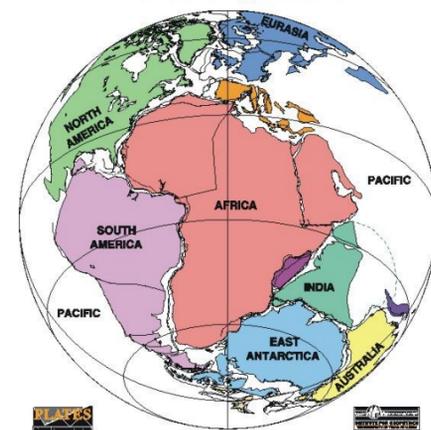


Types:

1. Shield
2. Composite Cone
3. Supervolcano

What is a supercontinent?

PANGAEA



Pangea, is a supercontinent that incorporated almost all the landmasses on Earth. The supercontinent began to break apart about 200 million years ago, during the Early Jurassic period (201 million to 174 million years ago), eventually forming the modern continents and the Atlantic and Indian oceans. German meteorologist Alfred Wegener as a part of his theory of continental drift.

Why live near a Volcano?

1. Tourism – Local communities can earn a living from visitors travelling to see volcanoes.
2. Geothermal Energy – This is a renewable resource of energy and can power a large area. This is sustainable to the environment. It can also contribute to tourism e.g. Heated natural pools in Iceland.
3. Fertile Land – The land surrounding a volcano is extremely fertile. This means farmers will get good quality bumper crops. This will increase their income.
4. Precious metals – Metals such as zinc, silver, copper and gold can be mined in close proximity to a volcano.

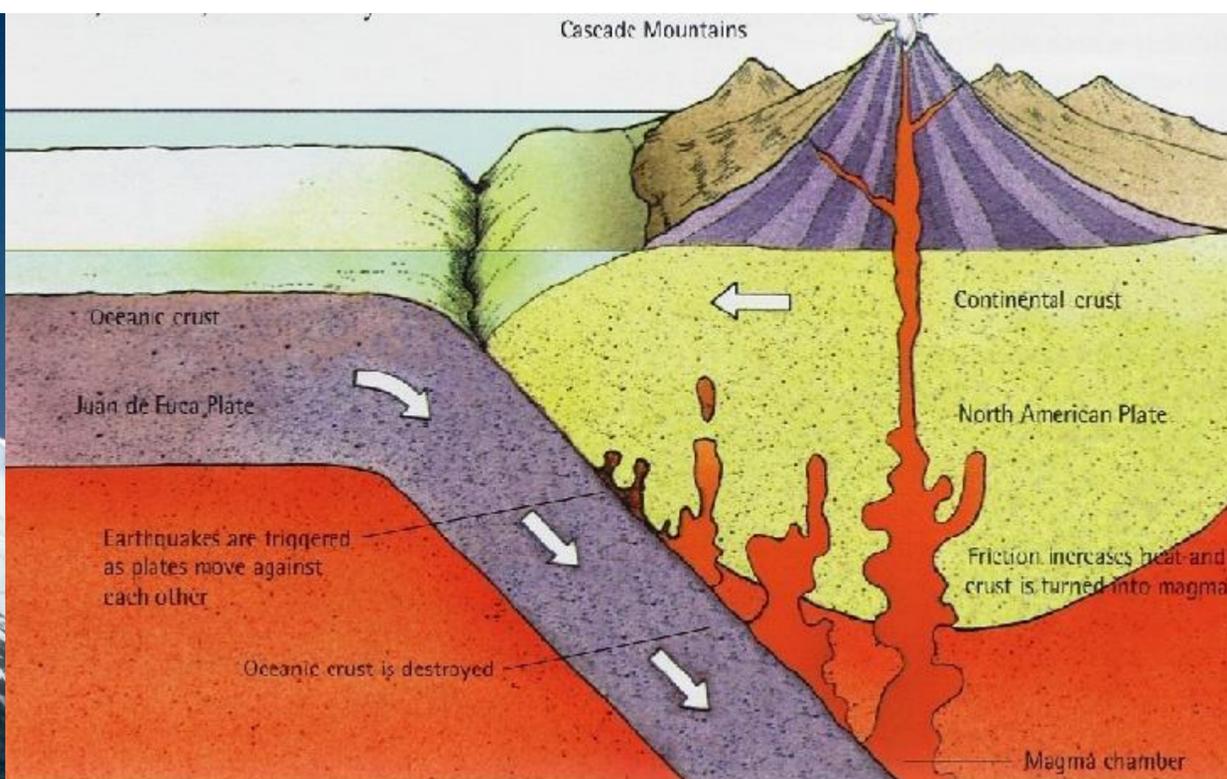
Named example: Mt St Helens

Causes

1. In March 1980 there were signs of an impending eruption as first earthquakes occurred and then steam filled with ash exploded onto the summit of the mountain.
2. Residents were told to leave and visitors were not allowed within 8km of the crater.
3. The eruption happened at 8:32am on the 18th of May, an earthquake measuring 5.1 on the Richter scale caused a landslide on the NE side of the mountain.
4. 57 people died, it would have been more if it had been another day but as it was Sunday no-one was working at the logging camps.

Effects

1. **Primary effects:** were 61 deaths most caused by gas from the blast waves, electricity supplies were cut and telephone lines were cut, and several logging camps were destroyed.
2. **Secondary effects:** Ash which fell into the rivers and lakes raised the water temperature while mud choked channels. Combined effect was the death of all fish and the loss of 250km of salmon and trout rivers. Flood water washed away several roads and railway bridges and falling ash hindered car engines in three states. 12% of the total crops were ruined by settling dust.
3. **Immediate responses:** Helicopters searched for survivors but soon realised no-one within the 25km radius blast zone could have survived.
4. **Long term responses:** Buildings and bridges were needed to be rebuilt and drainage systems were checked for blockages as a result of debris. The northern forest had to be replanted. Roads also had to be rebuilt. Animals and nature are returning to the areas as the ash in the explosion is good for soil.



Keyword Spellings and Definitions:

Remember to use your 'memory method' techniques to remember 100% of your key terms.

Tectonic – The structure of the earths crust made up of 14 giant slabs.	Continent – a continuous expanse of land. There are 7 continents on earth.	Plate Boundary: The point at which two or more plates meet. This is where tectonic hazards occur.
Destructive- Where two plates of different densities collide. The oceanic crust subducts under the continental crust as it is denser,	Conservative – Plates move alongside each other in the same or different directions causing friction at the boundary.	Collision- Where two plates if the same density move towards each other and collide.
Pangea – The supercontinent theory whereby all continental landmasses were attached.	Shield – A gently sloping volcano that spans a wide distance. The viscosity (thickness) of the lava is low and runny (like honey).	Composite Cone – a cone shaped volcano wit explosive eruptions. Viscosity is high (thick like treacle) so the lava doesn't travel very far.
Super Volcano – a continental volcano that has many vents. If it erupted it could wipe out continents.	Convention currents – a current in a liquid (mantle) that is created due to convection (heat) this movement makes the crust move)	Magma – molten rock under the earths surface (in the mantle) Lava – molten rock on the earths surface
Pyroclastic flow – a mixture of ash and gaseous material that erupts from a volcano. Can travel up to 700mph and kills anything in its path. It is more dangerous that lava due to its speed.	Oceanic Crust – A thinner more dense tectonic plate. Located under oceans and seas. (mars bar)	Continental Crust – a thicker less dense tectonic plate. Laced on land, (milky way)

<p><u>Accept the statement</u> “ LIC’s will always suffer worse after a natural disaster”</p>	<p><u>Challenge the statement</u> “ Primary effects are always worse after a natural disaster than secondary effects.</p>	<p><u>Extend this answer</u> “ Explain why preparation is so important in reducing the impacts from tectonic hazards “</p>
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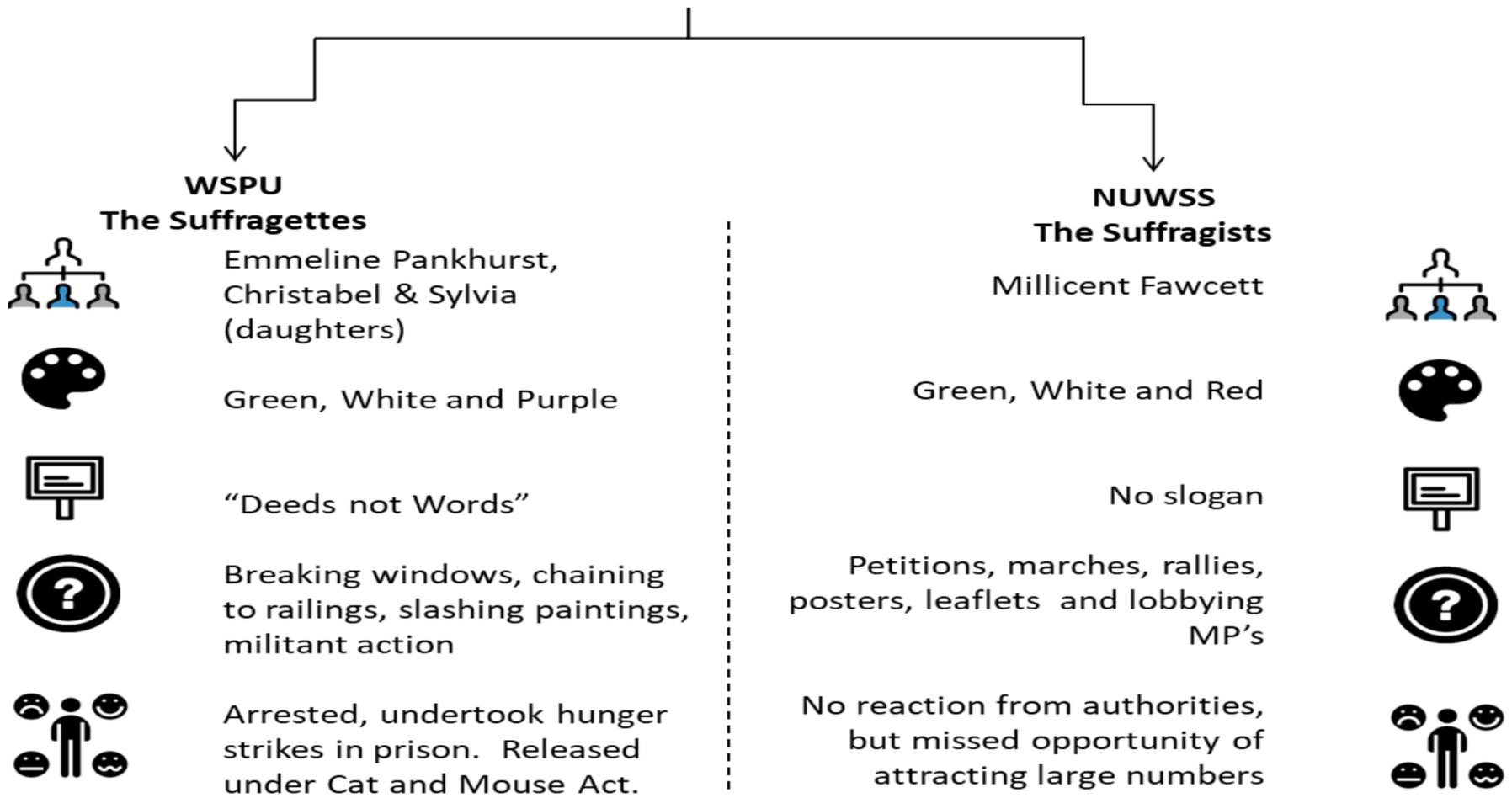
Can you get 100% right?

<u>Hot Questions</u>	<u>Cold Questions</u>
<ol style="list-style-type: none"> Compare all four layers of the earth, including temperature, consistency, thickness of layers Compare all four plate boundaries, explain what hazard what would occur at each. To what extent are primary impacts worse than secondary impacts during tectonic hazards ? Use named examples to help justify your answer. To what extent is preparation the most useful method of reducing the effects of tectonic hazards. Discuss the SEE impacts of the Mt St Helens eruption. Which benefit of living near tectonically active regions do you think is most beneficial to the local populations? 	<ol style="list-style-type: none"> Define the term hazard List 5 natural hazards Name the four layers of the earth. Describe what the core is like Name the four types of plate boundaries. What are volcanoes ? Name 3 social impacts of the Mt St Helens eruption. What is the difference between a primary and secondary effect ? Why would someone want to live near a volcano? Explain what the three P’s are in reducing effects from hazards.



Unit Intent: In this unit you will learn about the fight for women's suffrage (the vote) and the work female political movements did in order for women to achieve this privilege. The unit will end with women being granted voting rights.

Women's Suffrage Movements



Emily Davison

Emily Davison was born in London on 11 October 1872. She studied at Oxford University, although women were not allowed to get a degree at this time.

In 1906, she joined the Suffragettes and began working with them full time. She was arrested for rioting in the streets, to burning post boxes for which she spent time in jail.

In 1909, she was given a months hard labour after throwing rocks at member of parliament David Lloyd George. She attempted to starve herself, and had to be force-fed.

By 1911, Davison was becoming more militant. On 4 June 1913, she ran out in front of the king's horse as it was taking part in the Epsom Derby. Her purpose was unclear, but she was trampled on and died on 8 June.



Women gaining the vote

During the war, women served the country and did men's work in many ways. When they were given the vote in 1918, most people believed that they deserved it because of their hard work during the war. In the war, people began to argue that all men should get the vote. They were all fighting together in the trenches so should have the same rights. When the vote was given to women it was only given to women who were householders over the age of 30 (6 million women). Women over 21 did not get the vote until 1928. Yet the 1918, Representation of the People Act gave the vote to all men over the age of 21 so the men and women were not equal, but it was a start to female equality.

Useful Websites:

<https://www.bbc.co.uk/bitesize/guides/zxdxj6f/revision/1>

<https://revisionworld.com/gcse-revision/history/british-history/britain-1906-1918/votes-women>

Keyword Spellings and Definitions:

Remember to use your 'memory method' techniques to remember 100% of your key terms.

election —a formal process of voting	suffrage —having the right to vote in political elections	Suffragettes —a groups fighting for women's right to vote through militant methods	Suffragists —a groups fighting for women's right to vote through peaceful methods	militant —using violent or threatening methods to get what you want
arson —setting fire to property or belongings	political —relating to government or politics	manifesto —an outline of your political thoughts	vote —a choice to have a say in political elections	women —a adult female

ACE Questions – Are you 100% ready to answer these questions based on your learning so far?

Accept	Challenge	Extend
<p>'Smashing windows and being arrested got people's attention'</p> <p>How could you accept this statement?</p>	<p>'The Suffragette movement was too violent and put many people off'</p> <p>How could you challenge this statement?</p>	<p>'It was unfair that only women over 30 and homeowners were given the vote in 1918'</p> <p>How could you extend this statement?</p>

Can you get 100% right?

Cold Questions:

1. Who was the leader of Suffragettes?
2. What colours did the Suffragettes wear?
3. Who was the leader of the Suffragists?
4. What actions did the Suffragettes take to try and win the vote?
5. What actions did the Suffragists take to try and win the vote?
6. What happened to Emily Davison when she refused to eat?
7. When was Emily Davison killed?
8. At what event was Emily Davison killed?
9. Roughly how many women were over 30 and homeowners in 1918?
10. How old did men have to be to vote in 1918?

Hot Questions:

1. Why do you think the Suffragettes had the slogan 'Deeds not words'? This means actions rather than saying something, Explain your answer.
2. Do you think that 'militant' actions was a good tactic for the Suffragettes to use?
3. How effective do you think hunger strikes were for the Suffragettes?
4. The death of Emily Davison helped to increase the campaign for women's suffrage? Do you accept or challenge this statement? Extend your answer.
5. 'Women over 30, or homeowners getting the vote in 1918 was a step in the right direction for women's rights'. How far would you agree with this statement?

Unit Intent: Pupils should be able to describe their daily routines using reflexive verbs. They should be able to make reference to three time frames and add detail to their descriptions using time phrases and sequencers.

Tengo una rutina diaria que es I have a daily routine that is	muy (very) bastante (quite) un poco (a little) demasiado (too)	divertida (fun) ocupada (busy) exigente (demanding)	aburrida (boring) perezosa (lazy)	
Usualmente normally	a eso de siete About 7	de la mañana Of the morning	Voy a almorzar I am going to lunch	Luego then
Por lo general Generally	a la una At 1:00	de la tarde Of the afternoon	Voy a cenar I am going to dinner (tea)	después after
Siempre Always	a las ocho At 8:00	de la noche Of the night	Voy a desayunar I am going to breakfast	finalmente finally
Nunca Never	a las diez y cinco At 10:05		Voy a descansar I am going to rest	
ayer Yesterday	a las seis y cuarto At 6:15		hice mis deberes I did my homework	
mañana tomorrow	a las nueve y diez At 9:10		hice mis deberes I did my homework	
	a las doce menos veinte At 11:40		Jugué en el ordenador I played on the computer	
	a las dos menos cuarto At 1:45		Jugué en el ordenador I played on the computer	
	a mediodía At midday		Me acosté I went to bed	
	a medianoche At midnight		Me lavé los dientes I washed (brushed) my teeth	
			Me desperté I woke up	
			Me levanté I got up	
			Me vestí I got dressed	
			Salí de casa I left my house	
			Ví la tele I watch the tv	
			Volví a casa I returned home	
			Me lavé los dientes I washed (brush) my teeth	
			me desperté I wake up	
			me levanto I get up	
			me visto I get dressed	
			salgo de casa I leave my house	
			veo la tele I watch the tv	
			vuelvo a casa I return home	

Year 9: Mi rutina diaria – Grammar and Tense Builder

Can you learn and use 100% of them?

TIME

Telling the time in Spanish is different to how we do so in English. Look at the Spanish times below and their literal translations.

A las cinco y veinte

At the 5 and 20 (at 20 past 5)

A las once menos cuarto

At the 11 less quarter (at quarter to 11)

A la una y media

At the 1 and half (at half past 1)



The tables on the left include all the vocabulary you will need for telling the time when describing your daily routine.

A la una	At the 1
A las dos	At the 2
A las tres	At the 3
A las cuatro	At the 4
A las cinco	At the 5
A las seis	At the 6
A las siete	At the 7
A las ocho	At the 8
A las nueve	At the 9
A las diez	At the 10
A las once	At the 11
A las doce	At the 12

Y	And (past)
menos	Less (to)
cinco	5
diez	10
cuarto	quarter
veinte	20
veinticinco	25
o	
media	half

Reflexive Verbs

You will have noticed that there are some words on your sentence builder that have got **'me'** in front of them e.g. **me lavo los dientes**.

These words are called reflexive verbs. Reflexive verbs are used to indicate an action that a person does for themselves often related to daily routines. For example: **me lavo** means I wash 'myself' **BUT** as English speakers we would rarely say 'myself' we would just say 'I wash or I get washed'.

When discussing other people we need to use a different pronoun as we know that **'me'** refers to **'I'**. The tables below show an example of an **AR** and **IR** reflexive verb.

Lavarse = to wash oneself		
Reflexive Pronoun	Verb	English
Me	lavo	I wash (myself)
Te	lavas	You wash (yourself)
Se	lava	He washes (himself) She washes (herself)
Nos	lavamos	We wash (ourselves)
Os	laváis	You (pl) wash (yourselves)
Se	lavan	They wash (themselves)

Vestirse = to dress oneself		
Reflexive Pronoun	Verb	English
Me	visto	I dress (myself)
Te	vistes	You dress (yourself)
Se	viste	He dresses (himself) She dresses (herself)
Nos	vestimos	We dress (ourselves)
Os	vestís	You (pl) dress (yourselves)
Se	visten	They dress (themselves)

Keyword challenge: In addition to learning the vocabulary on your sentence builder use your 'memory method' technique to remember 100% of the key terms below.

Una vez a la semana Once a week	A veces sometimes	el sábado pasado Last saturday	El lunes próximo Next monday	La semana que viene Next week
Dos veces a la semana Twice a week	Mañana por la mañana Tomorrow morning	el fin de semana pasado Last weekend	El sábado próximo Next saturday	Todos los días Every day

ACE Questioning - Are you 100% ready to answer these questions based on your learning so far?

Accept	Challenge	Extend
Usualmente a las ocho y media me vestí. Do you accept that the above statement makes sense grammatically?	Tengo una rutina diaria que es bastante aburrida. Challenge the statement above.	Los lunes a los dos vuelvo a casa. Extend the sentence above.

Cold Questions

Task 1: Translate to English.

1. A las once y media me levanto.

2. A las doce menos cuarto almuerzo pasta.

3. A la una y veinte veo la tele con mi madre.

4. Ayer a las cinco de la tarde volví a casa.

5. Ayer a las nueve de la mañana salí de casa.

Task 2: Complete with the missing letters.

- __escanso (I rest)
- _uelvo a _asa (I return home)
- _scucho musica (I listen to music)
- Me levant_ (I got up)
- Almorc_ (I lunched)
- Vo_ a despertarm_ (I am going to get up)
- Voy a _enar (I am going to dinner)

Hot Question: Write a detailed response to the following question '¿Cuál es tu rutina diaria?'

Unit Intent: During this unit you will improve your performing skills as a member of an ensemble with focus on how to rehearse effectively assigning job roles to members. You will discover what makes a successful ensemble performance through 'live lounge' listening activities developing your own stylistic interpretation on songs creating your own arrangements.



Ensemble skills

As you know, there are many different types of ensembles in many different genres. Working in ensembles requires a lot of **self discipline**, **organisation** and **preparation**. Playing in an ensemble allows you to develop **team work** skills coming together to achieve a common goal, it allows you to develop your **listening skills** learning to listen to **other parts** and **balance** your sound and improve your **intonation**, you learn to develop your **non-verbal communication** skills to create a successful performance and improve your **self confidence** and **motivation** to succeed.

Artist Interpretation

Cover songs are really popular and a really good way to show your artistic interpretation of a song differently from the original.

All of these songs are covers and each artists add their own personal interpretation/style to these songs. Some cover songs have become more popular than the original, for example, the song 'I Will Always Love You' became more popular when it was released by Whitney Houston but was originally sung by Dolly Parton.

Things you could change are;
Tempo
Pitch
Instrumentation
Dynamics
Voice
Genre
Structure

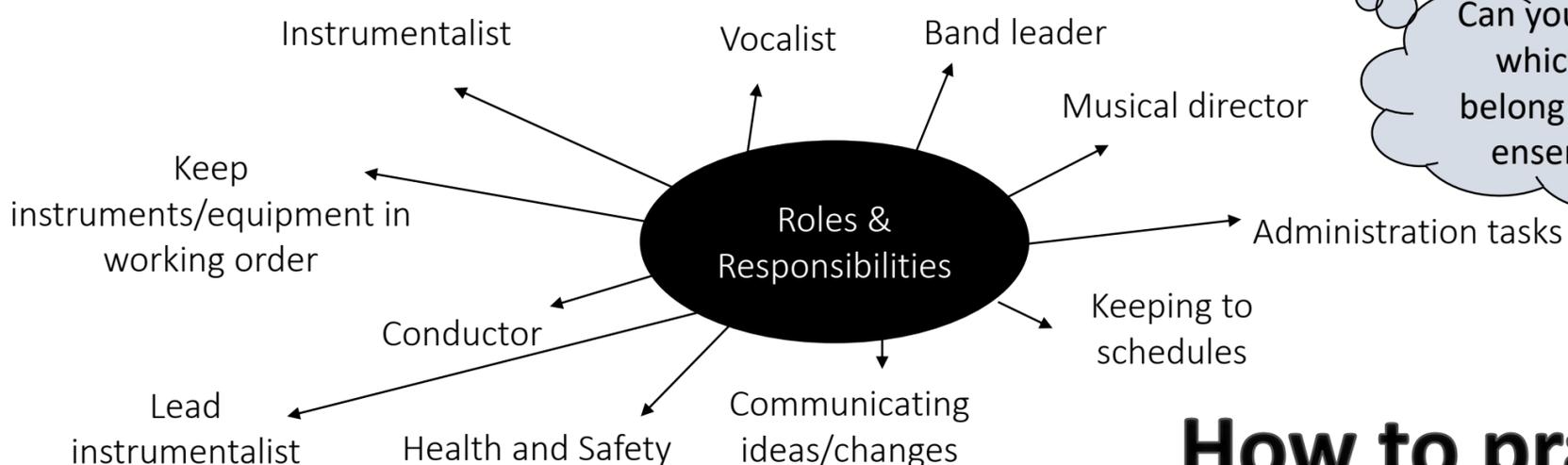
'Live Lounge' listening list.

1. Bruno Mars – 'All I Ask' cover
2. Arctic Monkeys – 'Hold On, We're Going Home' cover
3. Panic at the Disco – 'IDGAF' cover
4. 1975 – 'Sorry' cover
5. Clean Bandit – 'Royals' cover

Can you think of a song that you would like to cover and record it for our YouTube channel??

Roles & Responsibilities

When you are working with an ensemble, there are certain roles that will make the whole process more successful.



Can you identify which ones belong to which ensembles?

Which role/responsibility will you have for your ensemble?
What are your strengths and weaknesses?

Success Criteria for your performance:

- You must have all the instrumental parts for your cover song
- Clear plan and roles and responsibilities shared
- All parts need to be accurate and play at the same tempo as each other
- Your artistic interpretation will demonstrate a strong sense of dynamics, texture, harmony and a clear structure.

Summer showcase

How to practice

- Think of a piece of music in sections, breaking it down in to smaller chunks.
- Focus on one or more of these chunks during a practice session adding in the musical elements.
- Don't always start at the beginning, this will make you bored and not want to practice.

Remember to use your 'memory method' techniques to remember 100% of your key terms.



Ensemble - a group of musicians (more than 1) playing together.	Interpretation – a particular adaptation of a piece of music for performance
Rehearse - to practise something for a public performance	Reflection – serious and careful thought of what has gone well or what needs to be improved.
Genre – a style or category of music eg, classical genre.	Tempo – The speed of a piece of music and what all musicians have to follow when in an ensemble.
Intonation – the accuracy of pitch in playing an instrument or singing.	Structure – the layout of a piece of music, this important to know when you are learning new parts in an ensemble to make it easier to direct a rehearsal.
Harmony – where 2 or more pitches are added on top of each other.	Practice – is a noun, its an action rather than a thoughty Practise – is a verb, perform an activity or exercise repeatedly to improve.

ACE Questions

Are you 100% ready to answer these questions based on your learning so far?

<u>Accept the statement</u>	<u>Challenge the statement</u>	<u>Extend this answer</u>
<p>'Playing in an ensemble means the only role you will have is an instrumentalist'</p> <p>Are you able to justify your answers?</p>	<p>'The only important thing in ensemble rehearsals is to be accurate at your own part'</p> <p>Are you able to give examples of music to support your answer?</p>	<p>'The rehearsal process is the key to a successful performance'</p> <p>Give musical examples to support this statement.</p>

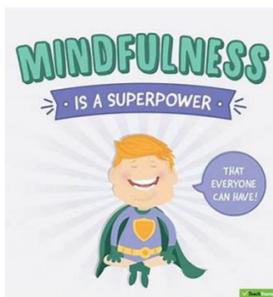
Can you get 100% right?

COLD Questions

1. What makes an ensemble?
2. List three different types of ensembles.
3. Identify what skills are needed to practice effectively.
4. Why is texture important in an ensemble performance?

HOT Questions

1. Explain what musical interpretation means.
2. Explain why a rehearsal plan is so effective.
3. Justify the reasons why everyone needs to have a role or responsibility in an ensemble.
4. Describe what non-verbal communication means.
5. Explain how music affects *your* well-being.



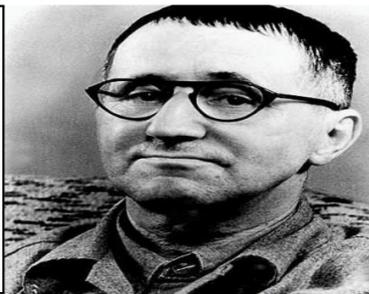
Being part of an ensemble not only improves your musical and personal skills it's well known for improving your well being. Research shows that making music can lower blood pressure, reduce stress, lessen anxiety and improve your mindfulness. When you're strumming a guitar, playing the piano or singing, you enter this mindful state without even knowing it because you have to be **100% focused** otherwise you will get it wrong.

Unit Intent: You will explore key Theatre Practitioners and their influence over the creation of Drama. You will study Brecht, Stanislavski and Artaud. You will cover a wide variety of genres and styles of Drama. You will then apply skills and knowledge to a final showcase.

What is a Theatre Practitioner?

A **theatre practitioner** is a person or theatre company that creates practical work or theories to do with performance and theatre. The list of theatre practitioners is constantly changing and evolving, as people are always creating new work and coming up with new thoughts and methodologies for theatre and performance.

Bertolt Brecht



Konstantin Stanislavski



Antonin Artaud



Eugen Berthold Friedrich "Bertolt" Brecht (1898 – 1956) was a German poet, playwright, and theatre director of the 20th century. His ideas are very influential. He wanted to make the audience think, and used a range of devices to remind them that they were watching theatre and not real life.

Konstantin Sergeievich Stanislavski (1863 – 1938) was a Russian theatre practitioner. He was widely recognised as an outstanding character actor and one of the leading theatre directors of his generation. His principal fame however rests on his 'system' of actor training which he used to create realistic performances.

Antoine Marie Joseph "Antonin" Artaud (1896 – 1948), was a French dramatist, poet, essayist, actor, and theatre director, widely recognized as one of the major figures of twentieth-century theatre. Artaud's troubled life exposed him to the pain and cruelty of human existence, and he believed theatre should explore this pain and cruelty as it is what unites us all as human beings.

Critical Distance
(verfremdungseffekt)

Brecht didn't want his audience to get 'lost' in the story and its emotions, as he wanted them to be thinking about what they were watching (remaining 'critical'). To make sure his audiences didn't get too involved, Brecht made sure to remind them they were watching something that wasn't real. All the techniques below contribute to this.

Realism

A style of theatre that aims to mimic real life. Characters, stories, costumes and set designs should all appear as if the audience is watching real life, not a performance. This is what Stanislavski was aiming for in his theatre.

Theatre of Cruelty

Artaud believed performance should be used to shock the audience; it should be an assault on the senses intended to liberate the human subconscious and reveal man to himself. Artaud saw the cruelty of life and wanted to show this in the theatre.

Research Link
<https://www.bbc.co.uk/bitesize/guides/zwmvd2p>

Research Link
<https://www.bbc.co.uk/bitesize/guides/zxn4mp3>

Research Link
https://en.wikipedia.org/wiki/Theatre_of_Cruelty

Keyword Spellings and Definitions:

Remember to use your 'memory method' techniques to remember 100% of your key terms.

Bertolt Brecht Key Vocabulary		Konstantin Stanislavski Key Vocabulary		Antonin Artaud Key Vocabulary	
Epic Theatre: Brecht's style of production—audiences being engaged with a drama and constantly reminded that they are watching a play.	Breaking the fourth wall: Talking directly to, or interacting, with the audience.	Naturalism: Acting as realistically as possible—as close to 'real life' as an actor can perform.	The fourth Wall: An imaginary fourth wall separating the actors from the audience.	Total Theatre: All elements of theatre brought together to increase the experience. Artaud's performance would utilise every element, from lighting to dance to give the biggest possible experience.	Theatre of Cruelty: Artaud believed performance should be used to shock the audience; it should be an assault on the senses. Artaud saw the cruelty of life and wanted to show this in the theatre.
Verfremdungseffekt: Also known as the 'V-Effect'. The act of alienating the audience	Multi-role: When performers play more than one role in the same performance. The audience would see the same performer play multiple characters, and so would be reminded that the performance is not real.	Motivation: Why a character does and says the things they do.	Objective: The reason for a character's actions.	Audience involvement: When performance is arranged to immerse the audience in the action, rather than let them sit there and simply watch it. Artaud wanted his audience to be a part of the event.	Ritualistic performance: Dance or movement used to give the audience a performance from outside of our western experience. Artaud was fascinated by ritualistic performances from other cultures, seeing them as something more genuine and human than traditional western theatre.

ACE Questions – Are you 100% ready to answer these questions based on your learning so far?

“Each practitioner brings something unique to the theatre.”

<p><u>Accept</u> <i>Why would you accept this viewpoint? Explain your answer.</i></p>	<p><u>Challenge</u> <i>Why would you challenge this viewpoint? Explain your answer.</i></p>	<p><u>Extend</u> <i>How would you extend this viewpoint? Explain your answer.</i></p>
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Can you get 100% right?

Cold Questions

1. What did Brecht want to remind the audience in his style of theatre?
2. What was Stanislavski aiming for in his type of theatre?
3. What did Artaud believe performance should be used for?

Hot Questions:

1. Choose one type of theatre that you have learned about and explain the acting skills used in that style of theatre.
2. Choose any type of performance you have watched and explain how it fits into any of the styles of performances you have studied.
3. Discuss your favorite style of theatre and explain why you prefer it.

Topic: MAXIMUM LEVELS Duration: 6 weeks Assessment Focus: Advanced Skills

Unit Overview:
In this unit, pupils will refine their running, jumping and throwing skills for events in order to improve performances. Pupils will continue to select and apply different techniques across all disciplines, and will be judged against the bronze, silver and gold award thresholds. Pupils will aim to build on previous personal bests in relation to speed, height and varying distances.

Language for Learning:

 Literacy Focus	Accelerate	Trajectory	Execution	Angle	Speed	Approach
	Rhythm	Preparation	Follow through	Release	Power	Distance

Track Events
These are running events typically ran on a 400m track.

Sprints
These are quick races that use your maximum speed. Most of these are done anaerobically (without oxygen).
100m, 200m, 300m, 400m.
Usain Bolt is an example of a sprinter. He holds the world record for 100m sprint at 9.58 seconds!



Middle/Long Distance events
These are endurance events, they are still completed pretty quickly but rely on pacing and stamina. These are done aerobically (using oxygen).
800m, 1500m.
Mo Farah is an example of a long-distance runner.



Field Events
These are throwing and jumping events.

Throwing events
Howler throw: This is the school version of javelin. The howler is a long thin object that makes a howling noise when thrown correctly.
Shot Put: This is a push not a throw. It uses a weighted ball that is pushed from the shoulder
Discus: imagine a heavy Frisbee. This heavy disc shaped weight is thrown to get the furthest discus.



Jumping Events
Long Jump: At school we do standing long jump which is two feet to two feet for distance. At sports day we will practice with a run up to increase distance.
Triple Jump: This is a hop, step and jump. Three jumps that link together to make a bigger jump. Again, we do this with a run up into a sand pit on sports day.
High Jump: This is a test of vertical jump power. You have to try to jump up over a bar. The technique for this is the Fosbury flop. Named after the first man to go backwards over the bar.



School Awards to aim for: you will get a certificate for each one of these you can achieve!

EVENT	GIRLS			BOYS		
	BRONZE	SILVER	GOLD	BRONZE	SILVER	GOLD
100m (seconds)	18.50	16.50	14.70	17.50	15.00	13.40
200m (seconds)	40.00	36.00	31.00	38.3	32.60	28.80
800m (minutes)	4.20	3.40	3.00	3.45	3.10	2.40
1500m (minutes)	9.00	7.30	6.15	7.10	6.20	5.25
Long Jump (standing metres)	1.40	1.60	1.80	1.60	1.80	2.00
Triple Jump (standing metres)	5.50	6.00	6.60	5.80	6.50	7.00
Shot Put (metres)	4.30	5.70	6.80	4.80	6.50	8.60
Discus (metres)	9.00	13.00	17.00	12.00	17.00	22.00
Howler (metres)	15.00	30.00	40.00	30.00	40.00	50.00

Key Word and Definitions:

Athletics

Remember to use your 'memory method' techniques to remember 100% of your key terms.



False Start	Failed start of a race, usually caused by a runner moving forward before the starting gun is fired.
Foul	An unfair or illegal act, e.g. foul throw, foul jump.
Bell Lap	The final lap in a distance race, signalled by the ringing of a bell.
Rotation	Performing a spin or a twist in in order to generate power.
Preparation Phase	This is how you prepare for the event, typically used in field events. How can you set your body to ensure the throw or jump is perfect?
Execution Phase	This is what you actually do at the time of the throw or jump, how should your body look during this time?
Follow Through	How does your body finish? This is really important at this will determine your overall distance and direction.
Angle	A particular angle or flight of movement. For example, releasing an angle of 45 degrees during javelin.
Accelerate	An increase in speed or work rate. This would be used in all events, particularly towards the end.
Rhythm	A repeated pattern of movement. This is especially evident in events like triple jump or track events.

Are you **100%** ready to answer these questions based on your learning so far?



Accept	Challenge	Extend
<p>“Rhythm is especially important within jumping and running events.”</p> <p>How could you accept this statement?</p>	<p>“Power is required the least within track events, as no objects are being moved or cleared.”</p> <p>How could you challenge this statement?</p>	<p>“The follow through of any skill is just as important as the execution of it.”</p> <p>How could you extend this statement?</p>

Cold Questions
1. What is meant by the term false start?
2. What does the ‘bell lap’ refer to?
3. Name an event that would require rotation.
4. What is meant by a foul?
5. Which event uses the Fosbury flop technique?
Hot Questions
1. Explain the importance of follow-through when performing a throwing event.
2. Explain why achieving a 45 degree angle when throwing javelin will help to improve your performance.
3. At what part(s) of a 400m track race would you expect to see acceleration and why?
4. How do you think grip can affect your performance during throwing events?
<p>5. CHALLENGE ME Q: What advice would you offer a performer who is struggling to achieve rhythm in the triple jump event?</p>

Unit Intent: In this half term you will develop your observational drawing skills further in relation to still life objects and images.

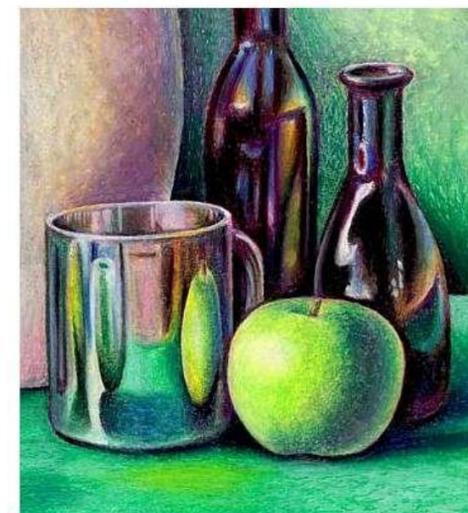
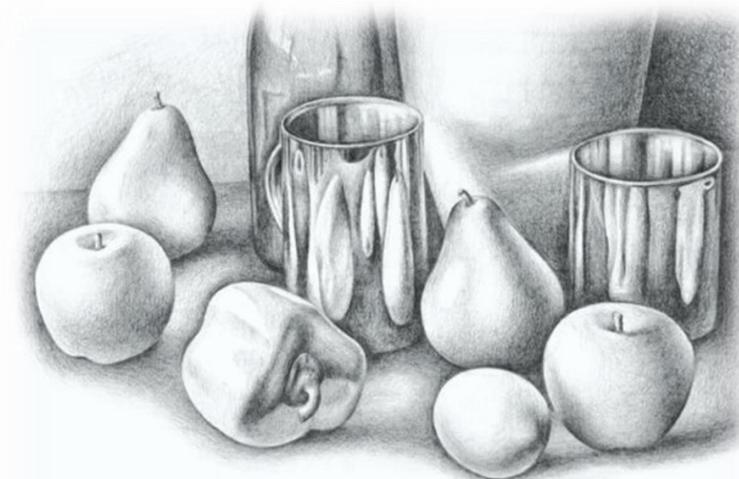
In this project you will...

- Develop your knowledge of observational drawing, when working with still life objects.
- Develop your knowledge of tonal skills and mark-making.
- Develop your written annotation skills by adding comments to your work regarding your successes and areas for improvements.
- Develop your knowledge of how to accurately use different mediums.

You will create...

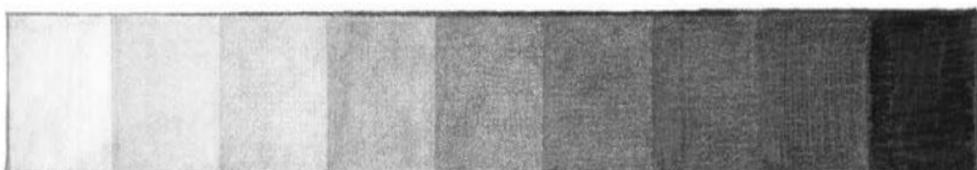
- 3 or more drawings of still life set-ups
- To create your still-life set up place 3-6 objects together in an arrangement.
- The objects can be found around the house and relate to each other in theme if you want.
- Each still-life drawing must be in a different medium, for example: colour pencil, shading pencil, biro, fine liner.
- 1 of your drawings must be a continuous line drawing.
- Make use of tone to make your shape look more 3D.
- When using pen or fine liner, try different mark-making techniques such as hatching and cross hatching.

Examples



Tonal Shading:

Tonal shading refers to the lightness or darkness of an object. It is created by using different pressures with your pencils to gain light and dark areas on your object. Consider putting an arrow where the light would be coming from and this will help you to understand which areas should be darker and which should be lighter.



Mark Making:

When referred to in art Mark-Making is a term used to describe the lines, patterns and textures that are made from your medium. Individual mediums such as a pen can create multiple different kinds of marks such as circular motions or straight lines.



Keyword Spellings and Definitions:

Remember to use your 'memory method' techniques to remember 100% of your key terms

Continuous Line: Creating a drawing using 1 line without any breaks. This can be done all in 1 go, or in several continuous line sections joined together.	Observational drawing: Observational drawing is drawing what you can see in front of you as accurately and as true as possible.	Still life: A painting or drawing of an arrangement of objects, typically including fruit and flowers.	Controlled: Using your mediums in a controlled way is when you use them accurately and to the best of your ability.
Presentation: How a piece of work or pieces of work are shown or explained to the intended audience. The way in which the work is arranged.	Annotation: A line or paragraph explaining or commenting on a piece of work, technique or skill.	Inspiration: The process of being mentally stimulated to feel something or do something, specifically when it is something creative.	Detail: A small, elaborate part of a piece of artwork including painting, drawing or crafts.

ACE Questions – are you 100% ready to answer these questions based on your learning so far?

Accept	Challenge	Extend
<p>“Observing an object when drawing it helps you gain a more realistic outcomes.”</p> <p>Why would you accept this viewpoint? Explain your answer.</p>	<p>“You should only add annotation to your artwork when something goes wrong.”</p> <p>How would you challenge this viewpoint? Explain your answer.</p>	<p>“Evaluating your work is important.”</p> <p>How can you extend this view point? What other data can you access? Explain your answer.</p>

Can you get 100% right?

Cold Questions

1. What does annotation mean?
2. What does inspiration mean?
3. What does Still life mean?
4. What is a medium?
5. What is detail?
6. What is an observational drawing?
7. What does presentation mean?
8. Can you take inspiration from multiple artists work?

Hot Questions

1. Why is it important to use control when working with different mediums?
2. Why is it important to add annotation to your work?
3. Why is it important to take inspiration from artists work?
4. How does effective presentation improve the overall look of your work?

Challenge Me Question

Can you write a paragraph evaluating the successes and areas for improvements from each of your drawings?

Creative Careers Corner

Art and Design

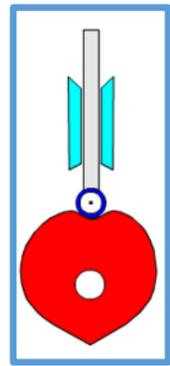
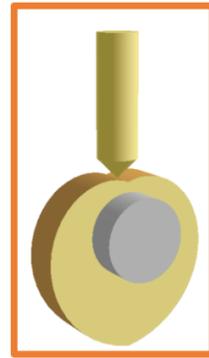
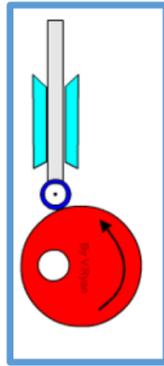
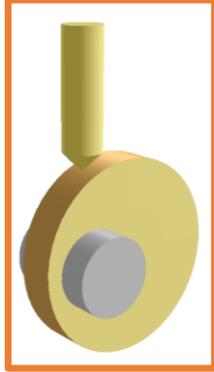
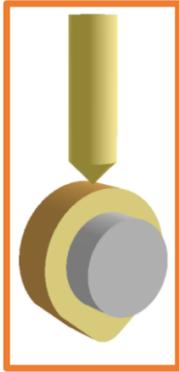
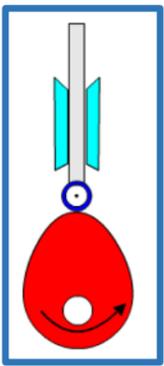
Artist / Architect / Book Illustrator / Curator / Cinematic Artist / Fashion Designer / Art Director / Brand Designer / Animator / Make up Artist / Art Therapist / Conservator / Set Designer / Costume Designer / Art Teacher



Unit Intent: In this unit we will learn about
how to create mechanical movement using CAM's and Leavers.

Types of CAM

There are several common types of CAM used to produce movement. The Cams are all designed to produce different types of movement.



PEAR Shaped CAMs

Are used in car engines. For half a turn of the FOLLOWER the cam will not move (DWELL), then it will RISE and FALL gently.

ECCENTRIC CAMs

Are used in water pumps and steam engines. Produces a smooth uniform reciprocating motion. There is no long DWELL period.

HEART shaped CAMs

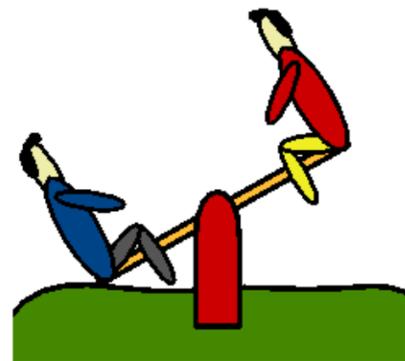
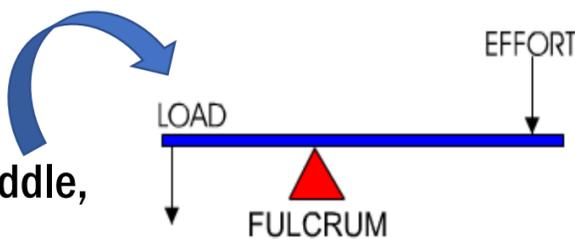
Are used in sewing machines to keep the thread wound evenly. This cam is used when the FOLLOWER is required to move slowly and with uniform velocity.

Classes of Lever

There are three classes of lever, we use them everyday without realising. You can find the three classes of lever in everyday objects:

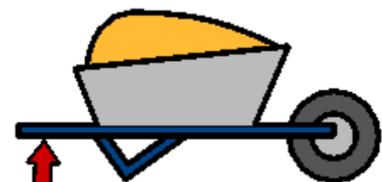
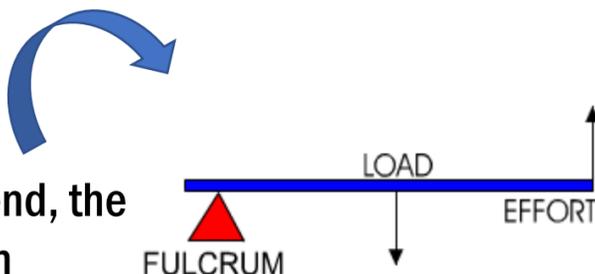
Class 1

This is the most common type of lever. With a class 1 lever the fulcrum is in the middle, With the effort at one side and the load at the other.



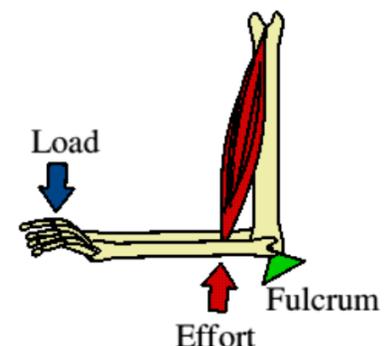
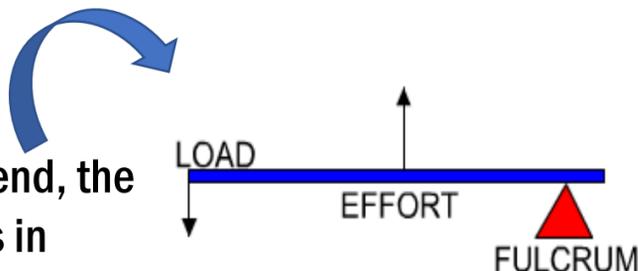
Class 2

With a class 2 lever, the fulcrum is at on end, the effort is at the other end and the load is in the middle.



Class 3

With a class 3 lever, the pivot is at one end, the load is at the other end and the effort is in the middle.



Keyword Spellings and Definitions:

Remember to use your 'memory method' techniques to remember 100% of your key terms

Fulcrum: The point at which something turns.	CAM: A specially shaped disc designed to create movement.	Dwell: The part of a CAM that creates no movement.	Follower: An object that sits on top of the CAM.
Rise: The section of the CAM which makes the follower move upwards.	Fall: The section of the CAM which makes the follower move downwards.	Lever: A long rod used to assist in moving an object.	Mechanism: An assembly of mechanical components that form a machine.

ACE Questions – are you 100% ready to answer these questions based on your learning so far?

Accept	Challenge	Extend
<p>“CAMs are useful and we find them in many everyday objects.”</p> <p>Why would you accept this viewpoint? Explain your answer.</p>	<p>“Levers are very useful and make our everyday lives much easier.”</p> <p>How would you challenge this viewpoint? Explain your answer.</p>	<p>“Mechanisms are one of the most useful inventions created by man and we wouldn't be able to manage without them”</p> <p>How can you extend this view point? What other information can you provide? Explain your answer.</p>

Can you get 100% right?

Cold Questions

1. Name a popular CAM?
2. How many parts does a CAM have?
3. Name an everyday mechanism?
4. How many classes of lever?
5. Which lever is found in the human body?
6. Which class of lever can be found in a children's playground?

Hot Questions

1. What is the difference between a Class 1 and Class 2 lever?
2. What do you understand by the term mechanism?
3. Where would you find a Class 3 lever in your home?
4. What is a CAM?
5. Explain what is meant by the Dwell on a CAM?

Challenge Me Question

Can you use the website www.technologystudent.com to find out how a Snail CAM works. Use a diagram to help explain your findings.

Creative Careers Corner

Design Technology

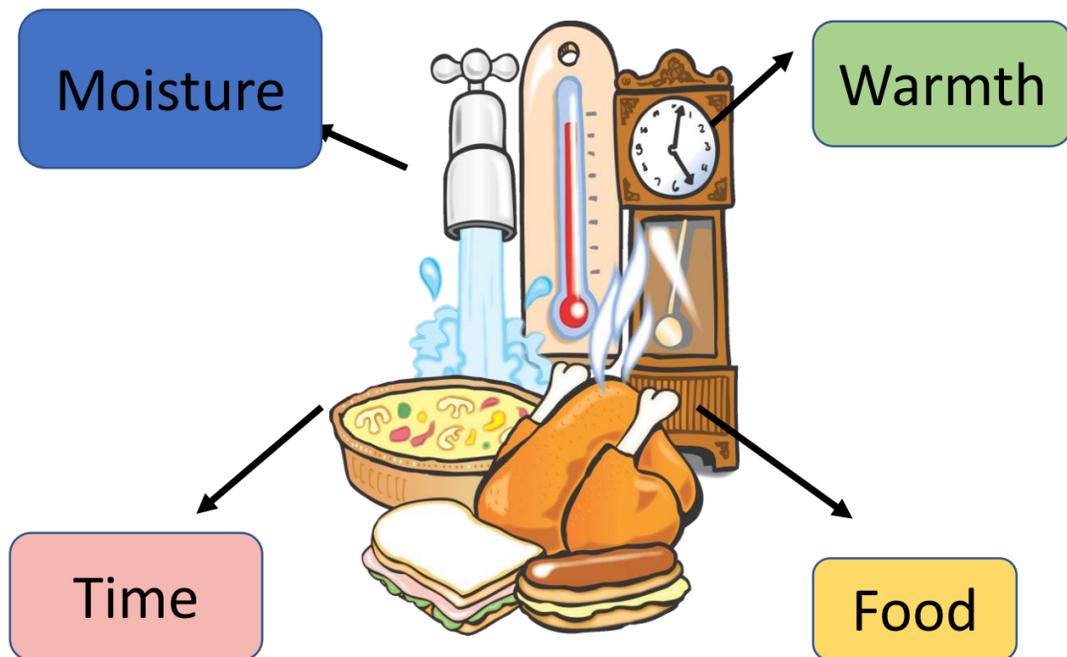


Architect / Brick Layer / Cabinet Maker / Carpenter / Electrician / CAD Designer / Lighting Technician / Locksmith / Engineer / Plasterer / Plumber / Set Designer / Window Fitter / Offshore Roustabout / Gardener / Mechanic / Construction / Model Maker

Unit Intent: Understand how when food becomes unsafe it can make people ill

In this unit you will understand how to prevent food from becoming unsafe and causing ill health. You will also understand what bacteria needs to spread and the main sources of food poisoning.

What does bacteria need to multiply?



Each year, many thousands of people become ill because of something they have eaten. Most people recover after a few day, but some become extremely ill and can die as a result.

People who work in the Hospitality and Catering industry (and all other food handlers) must be trained to understand how to keep food safe when they are handling, preparing, cooking, storing and serving food, so that it does not make people ill.



Bacteria

Some bacteria have to be **INSIDE** your body to make you ill. These are consumed in the food. Bacteria can multiply every fifteen minutes in the right conditions.

Once inside you, the bacteria attack your body causing illness, some such as Salmonella cling to the gut wall preventing absorption of water and nutrients- this type take hours even days to colonise the gut so symptoms may not show for a few days

Some produce a **TOXIN** (poison) on the food which makes you ill when you eat it. Toxins act on the body rapidly so this type make you ill within minutes to hours of eating them

Sources of bacteria food poisoning

- People/sewage
- Raw food
- Insects
- Rodents
- Soil/dust
- Refuse/waste
- Animals/birds
- Contaminated packaging.



There are three main causes of food-related ill health:
Microbes – bacteria, moulds and yeasts.
Chemicals – these poison food by being mistakenly added, or reacting with certain foods or produce toxins.
Food allergies and intolerances – when someone reacts to something in the food.

Common food poisonings:

- Campylobacter jejuni
- Salmonella group of over 1600 species
- Escherichia coli 0157
- Clostridium perfringens
- Listeria monocytogenes
- Bacillus cereus
- Staphylococcus aureus

Keyword Spellings and Definitions:

Remember to use your 'memory method' techniques to remember 100% of your key terms

Bacteria: microscopic single-celled living organisms, some of which cause food poisoning.	Contaminate: making a food unsafe to eat by allowing it to come into contact with microbes that will grow and multiply.	Cross- contamination: how microbes are spread from one place onto some food	Food spoilage: when something happens which makes food unfit and unsafe to eat.
Micro-organism: tiny plants and animals that are only clearly visible under a microscope (also called microbes)	Pathogenic: something that is capable of causing illness in people	Toxins: another name for poisons, if something is toxic it is poisonous	Yeasts: microscopic single-celled fungi that ferment foods containing sugar

ACE Questions – are you 100% ready to answer these questions based on your learning so far?

Accept	Challenge	Extend
<p>“ Food poisoning is a common and unpleasant illness that can lead to serious health problems”</p> <p>Why would you accept this viewpoint? Explain your answer.</p>	<p>“Being sick is a sign of food poisoning”</p> <p>How would you challenge this viewpoint? Explain your answer.</p>	<p>“Food poisoning is particularly dangerous to certain groups of people”</p> <p>How can you extend this view point? What other information can you include? Explain your answer.</p>

Can you get 100% right?

Cold Questions

1. What does cross contamination mean?
2. What is a pathogenic micro-organism?
3. Can you name three conditions that bacteria need to grow and develop?
4. Which type of bacteria clings to the gut wall?
5. Can you name three of the common sources of bacteria food poisoning?

Hot Questions

1. What are the three main causes of food poisoning?
2. What is a food intolerance?
3. What is the difference between an allergy and an intolerance?
4. How could a food handler avoid harming someone with a chemical cleaning product that is used in the kitchen?
5. How quickly could bacteria multiply?

Challenge Me Question

Can you research 3 types of food poisoning and list their symptoms, food that it is found in, and the effects on the body?

Creative Careers Corner

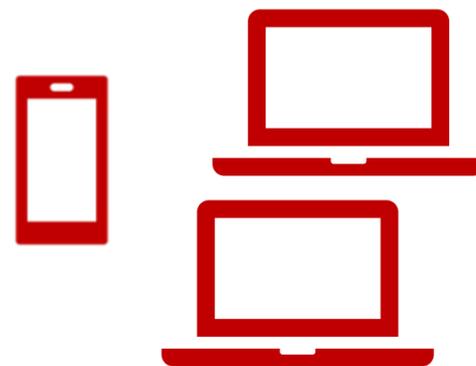
Food Technology

Head Chef/ Sous chef/ Head Waiter/ Waiter/
Kitchen porter/ General manager/ Concierge/
Front of house manager /Front desk receptionist/
Maintenance/Barista/ Housekeeping/
Bar staff/Sommelier/Publican/ Wedding Planner



Unit Intent: In this half term you will analyse other apps available, research and design your own unique app aimed at a specific audience.

About this topic



In this project you will...

- Research other apps available and be able to describe their purpose.
- Use your research to understand what makes an app successful
- Develop your knowledge of why target audiences are important.
- Develop your written skills by adding comments on your work of what areas can be improved upon and how your work was successful (evaluate).



You will create...

- Three designs of unique apps which you think is missing from the market and choose your favourite.
- Within these designs add your intended target audience and describe how it meets that audience.
- A description of how your app will work in detail and what it will do (annotate)
- Add how it can be improved in the future.
- A description of how you can make sure your app will be downloaded and popular?

App Examples



Research:

This is where you are getting your ideas from, evidencing your ideas. What apps are already available? Which ones do you like? What are their intended audience? If you were to design and make an app what would it be and how would it work? Who would it be aimed at?

Create:

Design three different and unique apps. Add detail and describe how they will work? Choose your favourite. Many apps are recognised by its logo. How will your look. See examples above.

Developments:

This is the point you analyse what you have done so far. What do you think is good about your design? What can you improve? How does it need the target audience? This is where you identify your strengths and develop these further into your work!

Final Outcome:

This is the end point of your project, your 'answer' to the starting point, your response to what is missing from the market. This outcome should be your best work, showcasing your developed skills.

Keyword Spellings and Definitions:

Remember to use your 'memory method' techniques to remember 100% of your key terms

Design: plan or drawing produced to show the look and function or workings of apps.	Research: a detailed study of a subject, especially in order to discover (new) information or reach a (new) understand.	Evaluate: to judge the quality of your work,	Target audience: a particular group at which a product is aimed at.
Presentation: How a piece of work or pieces of work are shown or explained to the intended audience. The way in which the work is arranged.	Annotation: A line or paragraph explaining or commenting on a piece of work, technique or skill.	Apps: an application, especially as downloaded by a user to a mobile device.	Detail: A small, elaborate part of your app design including colour, font size and style

ACE Questions – are you 100% ready to answer these questions based on your learning so far?

Accept	Challenge	Extend
<p>“Researching other available apps helps you gain a more realistic outcomes.”</p> <p>Why would you accept this viewpoint? Explain your answer.</p>	<p>“You should only add annotation to your design when something goes wrong.”</p> <p>How would you challenge this viewpoint? Explain your answer.</p>	<p>“Evaluating your work is important.”</p> <p>How can you extend this view point? What other data can you access? Explain your answer.</p>

Can you get 100% right?

Cold Questions

- 1) What does annotation mean?
- 2) What is an app?
- 3) What does target audience mean?
- 4) What is a Research page?
- 5) What is design?
- 6) What is a development?

Hot Questions

- 1) Why is it important to look at different apps?
- 2) Why do you need to research?
- 3) How can you make sure your design is unique?
- 4) Why is the designing three different apps important to the process?
- 5) How can you make sure your app meets with your chosen audience?

Challenge Me Question

Can you answer all the Cold and Hot questions with as much detail as possible?

Creative Careers Corner

Computer Science



Computer Hardware Engineer/Computer Network Architect /Computer and Information Research Scientists /Database Administrator /IT Project Manager / Games Developer /Programmer / Software Developer /Web Designer / Computing Teacher / IT Consultant