

Year 8 Mid-Year Knowledge Organiser



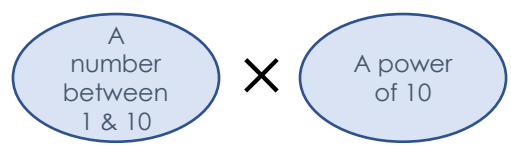
Unit 4 Fear – Knowledge Organiser

Key Conventions of Gothic Texts		Key Conventions of Gothic Texts		Imagery and Implied Meaning		Key Texts	
Typical themes in gothic:		Motifs:		Foreshadow - Something in a story or other text which acts as a warning or sign of a future event.		The Price-Neil Gaiman	
<ol style="list-style-type: none"> 1. Death and darkness 2. Supernatural 3. Curses or prophecies (predictions about the future) 4. Madness/intense emotions 5. Mystery/terror/suspense 		<ol style="list-style-type: none"> 1. The colour red 2. Mirrors 3. Moonlight/ Light/ Candles 4. Masks and helmets 5. Secret panels 6. Old documents 7. Roses 8. Paintings/ Portraits 9. Black birds e.g. ravens 		Simile - A comparison of one thing with another thing of a different kind, used to make a description more emphatic or vivid; uses 'as' or 'like'.		The Signal-Man-Charles Dickens	
Typical characters in gothic:		Sentence types		Metaphor - A figure of speech in which a word/phrase is applied to an object or action which it is not literally applicable.		The Monkey's Paw-W.W. Jacobs	
<ol style="list-style-type: none"> 1. Female or feminine characters that are threatened by powerful characters 2. Threatening women who are monsters or vampires – Femme Fatale 3. Powerful, tyrannical (cruel) male figures 4. Villains, vampires, ghosts, werewolves, giants 		Clause - An independent clause is a clause that can stand alone as a sentence. A dependent clauses (or subordinate clause) is one that cannot stand alone as a complete sentence. Remember that a clause has a subject and a verb.		Personification - Giving something non-human human qualities.		Don't Ask Jack- Neil Gaiman	
Typical settings in gothic:		Simple sentence -A simple sentence has just one independent or main clause.		Symbolism - Symbolism uses symbols, e.g. words, people, locations, or abstract ideas to represent something beyond the literal meaning.		The Furnished Room- O. Henry	
<ol style="list-style-type: none"> 1. Wild landscapes 2. Medieval style castles, churches or abbeys 3. Gloomy, decayed and ruined environments 4. Remote, deserted places or monsters within everyday life 5. Dangerous and threatening weather (symbolism) 		Compound sentence - A compound sentence has at least two independent or main clauses.		Onomatopoeia - Where the pronunciation of the word echoes the sound it makes e.g. crash, bang, croak, rustles		The Yellow Wallpaper - Charlotte Perkins Gillman	
Key Conventions and Ideas		Complex sentence - A complex sentence has an independent or main clause and at least one subordinate/ dependent clause.		Alliteration - Alliteration is the repetition of consonant sounds (any letters which are not the vowels a,e, i,u,o) at the start of different words close to each other.		The Foreboding - creates a sense of something bad going to happen.	
Gothic fiction explores:		Appositive phrase - An appositive phrase is a noun or a noun phrase that sits next to another noun to rename it or to describe it in another way.					
<ol style="list-style-type: none"> 1. The unpredictability and power of nature 2. The past 3. Fear of the unknown 4. Fear of being controlled against your will 5. The supernatural 6. Intense emotions 7. Death and darkness 8. Physical and mental illness 							

Unit 4 Fear – Knowledge Organiser

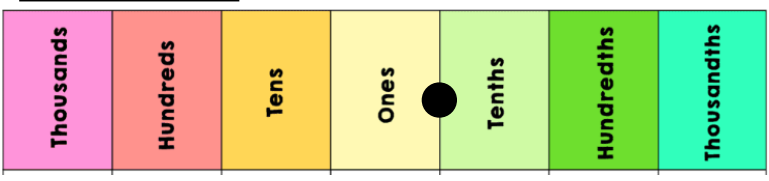
Key Conventions of Gothic Texts		Key Conventions of Gothic Texts		Imagery and Implied Meaning		Key Texts	
<p>Typical themes in gothic:</p> <ol style="list-style-type: none"> 1. D____ and d_____ 2. _____ 3. C_____ or p_____ (predictions about the future) 4. M_____/i_____ emotions 5. M_____/t_____/s_____ 		<p>Motifs:</p> <ol style="list-style-type: none"> 1. The colour _____ 2. M_____ 3. M_____/L_____/C_____ 4. M_____ and helmets 5. S_____ p_____ 6. Old d_____ 7. R_____ 8. P_____/P_____ 9. B_____ birds e.g. R_____ 		<p>Foreshadow -</p>		<p>The Price-Neil Gaiman</p>	
<p>Typical characters in gothic:</p> <ol style="list-style-type: none"> 1. 2. 3. 4. 5. 		<p style="background-color: #002060; color: white; text-align: center;">Sentence types</p> <p>Clause –</p>		<p>Simile –</p>		<p>The Signal-Man-Charles Dickens</p>	
<p>Typical settings in gothic:</p> <ol style="list-style-type: none"> 1. W_____ landscapes 2. Medieval style c_____, c_____ or a_____ 3. Gloomy, d_____ and r_____ environments 4. R_____, d_____ places or m_____ within everyday life 5. D_____s and threatening w_____ (symbolism) 		<p>Simple sentence –</p>		<p>Metaphor –</p>		<p>The Monkey’s Paw-W.W. Jacobs</p>	
<p style="background-color: #002060; color: white; text-align: center;">Key Conventions and Ideas</p> <p>Gothic fiction explores:</p> <ol style="list-style-type: none"> 1. 2. 3. 4. 5. 6. 7. 8. 		<p>Compound sentence –</p>		<p>Personification –</p>		<p>Don’t Ask Jack- Neil Gaiman</p>	
		<p>Complex sentence-</p>		<p>Symbolism -</p>		<p>The Furnished Room- O. Henry</p>	
		<p>Appositive phrase –</p>		<p>Onomatopoeia –</p>		<p>The Yellow Wallpaper - Charlotte Perkins Gillman</p>	
		<p>Foreboding-</p>		<p>Alliteration –</p>			

Standard Form



To add or subtract the powers must be the same first
 To multiply or divide, deal with the number first then the powers

Place Value



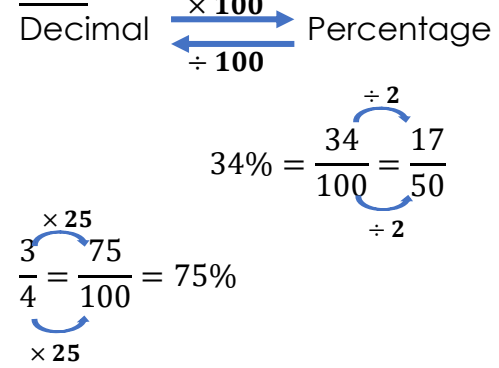
Rounding/estimation

0, 1, 2, 3, 4 round down
 5, 6, 7, 8, 9 round up
 To estimate, round all numbers to 1sf

13.679
 ↑ 1sf ↑ 1dp

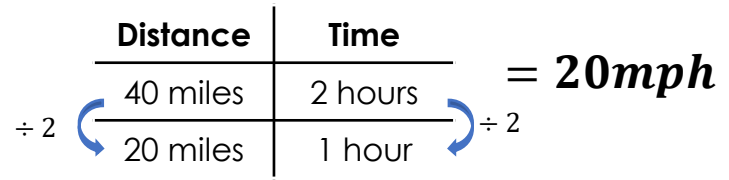
sf – significant figure
 dp – decimal place

FDP



Compound Measures

Speed: distance travelled in 1 hour or second
Density: weight per 1 cm^3
Pressure: newtons per cm^2



Year 8 Number

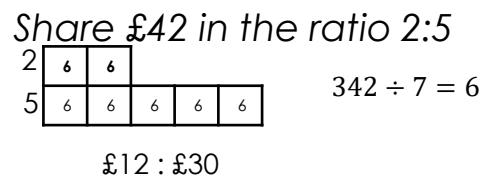
Ratio

Simplify ratio like fractions

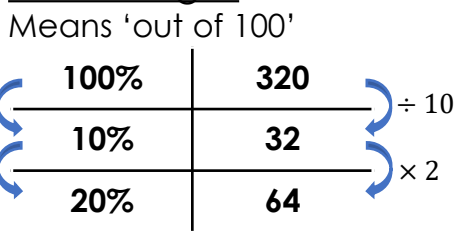
$4 : 10$
 $2 : 5$

$\div 2$ $\left(\begin{array}{c} \curvearrowright \\ \curvearrowleft \end{array} \right) \div 2$

Draw out boxes and split total into the number of boxes given



Percentages



You can add percentages together.
 E.g. if 10% = 4 and 5% = 2 then
 15% = 10% + 5% = 4 + 2 = 6

Indices

$x^a \times x^b = x^{a+b}$
 $x^a \div x^b = x^{a-b}$
 $(x^a)^b = x^{ab}$
 $x^1 = x$
 $x^0 = 1$

HCF/LCM

HCF (highest common factor) is the largest number that is a factor of both numbers
LCM (lowest common multiple) is the smallest number in both numbers list of multiples

Fractions

Adding/Subtracting
 The denominator must be the same

$\frac{1}{4} + \frac{2}{3} = \frac{3}{12} + \frac{8}{12} = \frac{11}{12}$

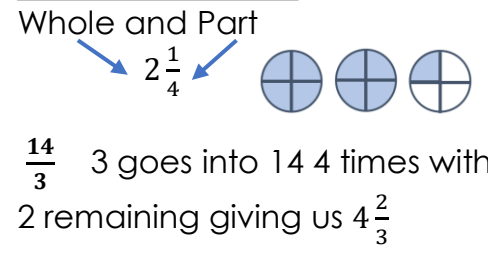
Multiply
 Multiply numerators, then multiply denominators

$\frac{1}{4} \times \frac{2}{3} = \frac{1 \times 2}{4 \times 3} = \frac{2}{12}$

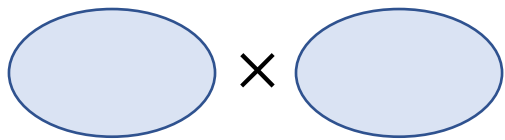
Dividing
 Dividing is the same as multiplying by the reciprocal

$\frac{1}{4} \div \frac{2}{3} = \frac{1}{4} \times \frac{3}{2} = \frac{3}{8}$

Mixed Fractions

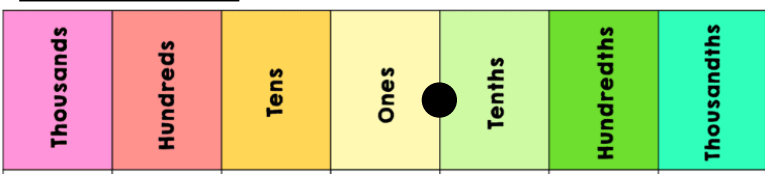


Standard Form



To add or subtract the powers must be the same first
To multiply or divide, deal with the number first then the powers

Place Value



Rounding/estimation

0, 1, 2, 3, 4 round ____
5, 6, 7, 8, 9 round ____

To estimate, first round all numbers to ____

247.81 3rd sf =
 1st dp =

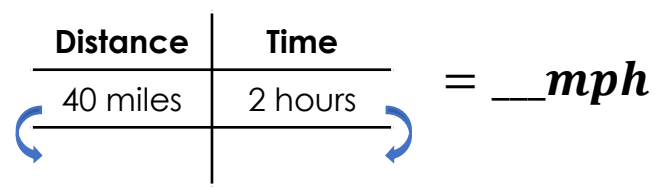
FDP

Decimal \longleftrightarrow Percentage

20% =
 $\frac{1}{4}$ =

Compound Measures

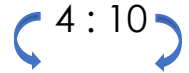
Speed: distance travelled in 1 hour or second
Density: weight per 1 cm^3
Pressure: newtons per cm^2



Year 8 Number Quiz

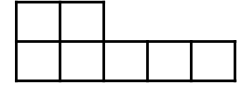
Ratio

Simplify ratio like fractions



Draw out boxes and split total into the number of boxes given

Share £70 in the ratio 2:5



Percentages

Means 'out of 100'

100%	160
10%	
5%	

You can add percentages together.
E.g. if 10% = 12 and 5% = 6 then
15% =

HCF/LCM

HCF (highest common factor) is the

LCM (lowest common multiple) is the

Fractions

• Adding/Subtracting

The denominator must be the same

$$\frac{1}{2} + \frac{2}{7} = \frac{\quad}{14} + \frac{\quad}{14} =$$

• Multiply

Multiply numerators, then multiply denominators

$$\frac{1}{2} \times \frac{2}{7} =$$

• Dividing

Dividing is the same as multiplying by the reciprocal

$$\frac{1}{2} \div \frac{2}{7} =$$

Indices

$$5^{11} \times 5^3 =$$

$$8^{10} \div 8^4 =$$

$$(y^3)^7 =$$

$$x^1 =$$

$$x^0 =$$

Mixed Fractions

Whole and Part



$\frac{13}{5}$ as a mixed number is ...

Algebraic Notation

We do not use multiplication signs: $3 \times a = 3a$

We do not use division signs: $3 \div a = \frac{3}{a}$

To collect like terms we add/subtract terms with the same coefficient and power

$$\begin{array}{ccccccc} 3x^2 & + & 4x & - & 5 & + & 2x & + & 10x^2 & - & 1 \\ \hline 13x^2 & + & 6x & - & 6 \end{array}$$

Substitution

Substitution means **replace**

If $x = 5$ we replace x with 5

So $3x - 1$ becomes $3(5) - 1$
 $15 - 1$
 14

Inverse Operations

Operation	Inverse
Adding	Subtracting
Subtracting	Adding
Multiplying	Dividing
Dividing	Multiplying

Operations

Adding	Sum, total, plus, more, ...
Subtracting	Difference, fewer, less than, below, ...
Multiplying	Product, lots of, times, ...
Dividing	Split into, equally shared, goes into, ...

Inequalities

- $x < 3$ "x is less than 3"
- $7 \leq y$ "7 is less than or equal to y"
- $e > f$ "e is greater than f"
- $14 \geq t$ "14 is greater than or equal to t"

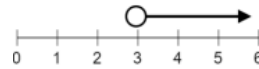
$$\bullet \leq \geq$$

$$\circ < >$$

$$x \leq 5$$



$$x > 3$$



Year 8 Algebra

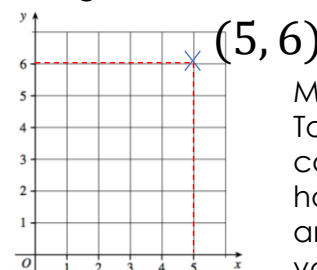
Solving

- Draw a line through the equals sign
- Get rid of numbers by doing the inverse operation
- Whatever you do to one side you **MUST** do to the other!

$$\begin{array}{r} 2x + 5 = 17 \\ -5 \quad \quad \quad -5 \\ \hline 2x = 12 \\ \div 2 \quad \quad \quad \div 2 \\ \hline x = 6 \end{array}$$

Coordinates

Along the corridor, up the stairs - (x, y)



Midpoints:
To find the midpoint of two coordinates you need to find halfway between the x values and halfway between the y values.

Expanding

← Opposite things →

Multiplying out brackets

$3(x + 5)$ means 3 multiplied by all of $x + 5$

x	x	+5
3	3x	+15

Start on the outside and multiply to get the middle

Always write your answer separately

$$3x + 15$$

Factorising

Putting into brackets

You need to identify common factors

x	x	+7
5	5x	+35

Start in the middle and get the outside

Always write your answer separately

$$5(x + 7)$$

Sequences

$$2, 5, 8, 11, 14, \dots$$

↖ -3 ↘
↖ +3 ↘
↖ +3 ↘
↖ +3 ↘

Working backwards gets us to 2 which is what we add on the end

It goes up by 3 so the nth term is $3n$

$$3n + 2$$

Algebraic Notation

We do not use multiplication signs: $3 \times a = 3a$

We do not use division signs: $3 \div a = \frac{3}{a}$

To collect like terms we add/subtract terms with the same coefficient and power

$$5a - 7b + 2a + 10b$$

Substitution

Substitution means **replace**

If $x = 5$ we replace x with

So $4x + 2$ becomes

Inverse Operations

Operation	Inverse
Adding	
Subtracting	
Multiplying	
Dividing	

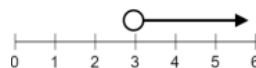
Year 8 Algebra Quiz

Operations

Adding	
Subtracting	
Multiplying	
Dividing	

Inequalities

- $x < 3$ "x is than 3"
- $7 \leq y$ "7 is less than y"
- $e > f$ "e is than f"
- $14 \geq t$ "14 is t"

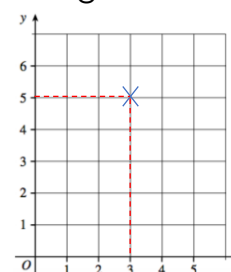


Solving

- Draw a line through the equals sign $5x - 11 = 4$
- Get rid of numbers by doing the inverse operation
- Whatever you do to one side you **MUST** do to the other!

Coordinates

Along the corridor, up the stairs - (x, y)

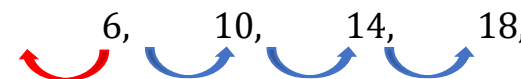


(,)

Midpoints:

To find the midpoint of two coordinates you need to find between the x values and between the y values.

Sequences



Expanding

← Opposite things →

Multiplying out brackets

$7(x - 2)$ means multiplied by all of $x - 2$

×	x	-2
7		

Start on the outside and multiply to get the middle

Always write your answer separately

Factorising

Putting into brackets

You need to identify common factors

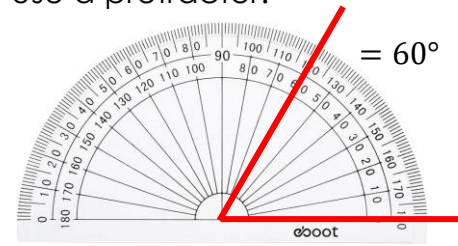
×		
	$6x$	$+24$

Start in the middle and get the outside

Always write your answer separately

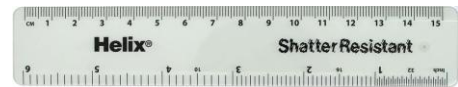
Measuring Angles

Use a protractor.

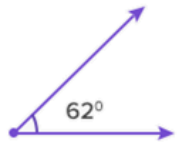


Measuring Lines

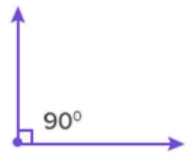
Use a ruler. = 7.5 cm



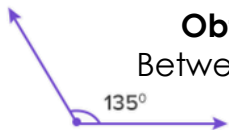
Types of Angle



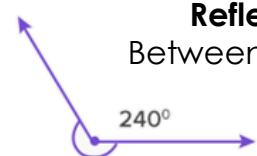
Acute Angle
Less than 90°



Right Angle
90°

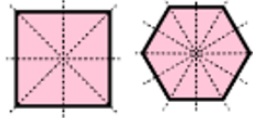


Obtuse Angle
Between 90° & 180°



Reflex Angle
Between 180° & 360°

Symmetry



Lines of Symmetry:

Straight Lines that divide shapes into 2 equal parts.

Rotational Symmetry: The number of times a shape can 'fit into itself' when it is rotated 360° about its centre.

Unit Conversions

1 cm = 10 mm

1 m = 100 cm

1 km = 1000 m

1 litre = 1000 ml

1 kg = 1000 g

Shapes

Parallelogram:

2 pairs of equal sides.

2 pairs of parallel sides.

2 pairs of equal angles.

Rhombus:

All sides equal length.

2 pairs of parallel sides.

2 pairs of equal angles.

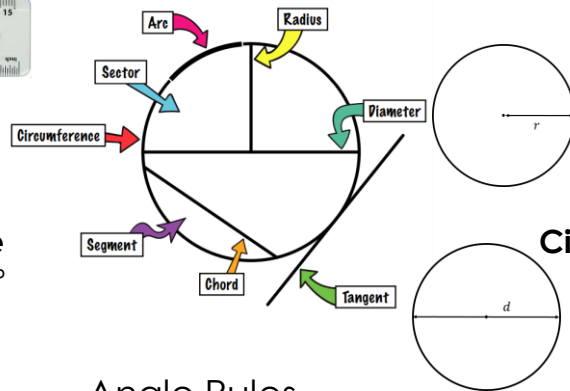
Trapezium:

1 pair of parallel sides.

Year 8 Geometry

Perimeter The distance around a 2D shape.
Add all side lengths together.

Circles



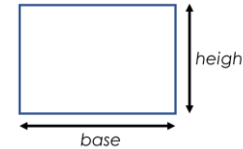
Area of a circle:

$$A = \pi r^2$$

Circumference of a circle:

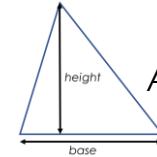
$$C = \pi d$$

Area The space within a 2D shape.



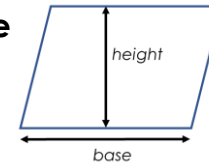
Square/Rectangle:

$$A = b \times h_p$$



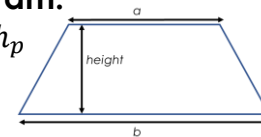
Triangle:

$$A = \frac{1}{2} \times b \times h_p$$



Parallelogram:

$$A = b \times h_p$$



Trapezium:

$$A = \frac{(a+b)}{2} \times h$$

Angle Rules



$$a + b + c = 180^\circ$$

Angles on a straight line sum to 180°

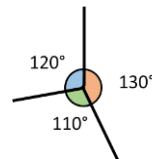


$$a + b + c = 180^\circ$$

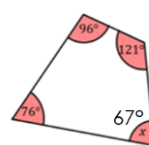
Angles in a triangle sum to 180°



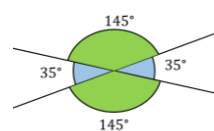
Base angles in an isosceles triangle are equal.



Angles around a point sum to 360°

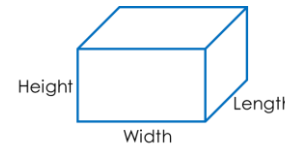


Angles in a quadrilateral sum to 360°



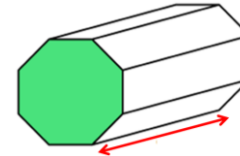
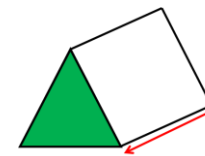
Vertically opposite angles are equal.

Volume The space within a 3D shape.



Cuboid/Cube:

$$V = l \times w \times h$$



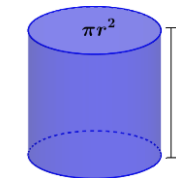
Prism:

$$V = \text{Area of Cross-Section} \times \text{Length}$$

Surface Area

The total area of all faces of a 3D shape.

1. Find area of each face.
2. Add the areas together.

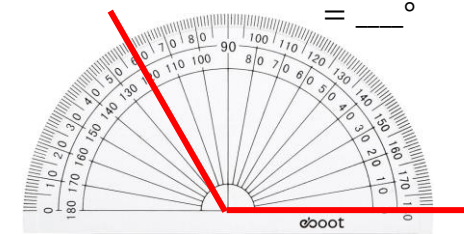


Cylinder:

$$V = \pi r^2 \times h$$

Measuring Angles

Use a protractor. = °

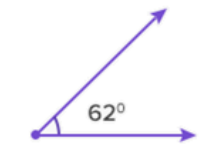


Measuring Lines

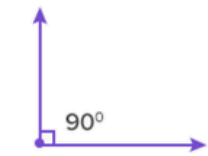
Use a ruler. = cm



Types of Angle



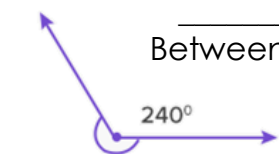
 Angle
Less than 90°



 Angle
90°

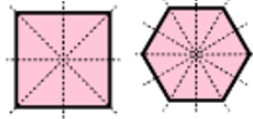


 Angle
Between 90° & 180°



 Angle
Between 180° & 360°

Symmetry



Lines of Symmetry:

Straight Lines that

Rotational Symmetry: The number of times a shape can '_____' when it is rotated 360° about its centre.

Unit Conversions

1 cm = mm
1 m = cm
1 km = m
1 litre = ml
1 kg = g

Parallelogram:
_____ pairs of equal sides.
_____ pairs of parallel sides.
_____ pairs of equal angles.

Rhombus:

_____ sides equal length.
_____ pairs of parallel sides.
_____ pairs of equal angles.

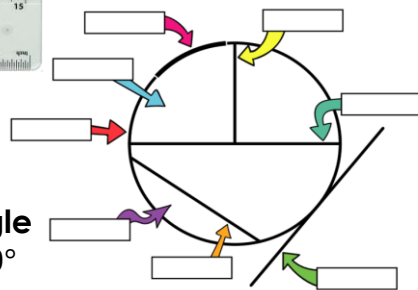
Trapezium:

_____ pair of parallel sides.

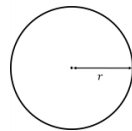
Perimeter The _____ around a 2D shape.
Add all side lengths together.

Year 8 Geometry

Circles

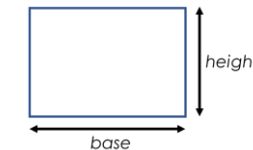


Quiz



Area of a circle:

A =



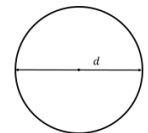
Square/Rectangle:

A =



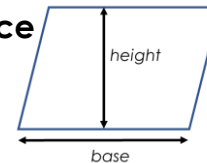
Triangle:

A =



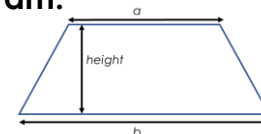
Circumference of a circle:

C =



Parallelogram:

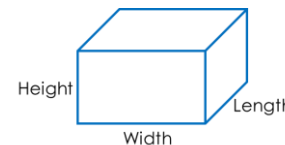
A =



Trapezium:

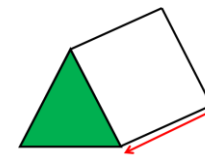
A =

Volume The space within a 3D shape.

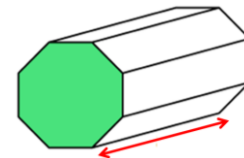


Cuboid/Cube:

V =



V =



Prism:

Angle Rules



$$a + b + c = 180^\circ$$

Angles on a straight line

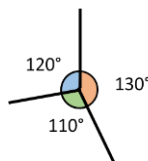


$$a + b + c = 180^\circ$$

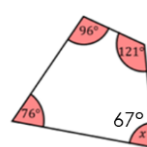
Angles in a triangle



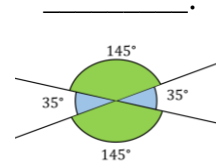
Base angles in an isosceles triangle are _____.



Angles around a point



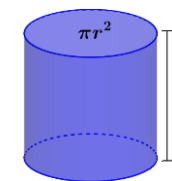
Angles in a quadrilateral



Vertically opposite angles are _____.

Surface Area

The total area of all faces of a 3D shape.
1. Find area of each face.
2. Add the areas together.



Cylinder:

V =

Year 8 Science: Respiration

Respiration

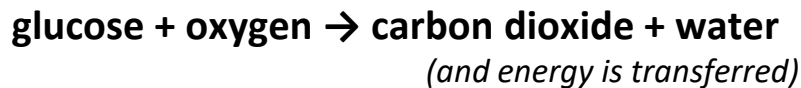
- Transfers (releases) energy from glucose
- Happens in cells
- Happens all of the time
- All living organisms (animals, plants, fungi & bacteria) respire

Organisms use energy for:

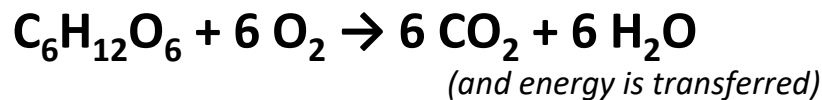
1. Building larger molecules from smaller ones
2. Movement
3. Transport of materials - glucose into the blood from small intestine & mineral ions from root cells
4. Keeping warm

Aerobic Respiration (with oxygen)

- The breakdown of glucose using oxygen to transfer energy
- Oxygen is breathed in and is transported around the body in the blood.
- The word equation for aerobic respiration is:



- The symbol equation for aerobic respiration is:



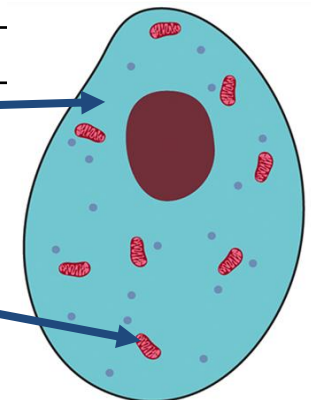
- Aerobic respiration transfers 19 times more energy to the cell than anaerobic respiration for every molecule of glucose.

Key Terms	Definitions
Respiration	The breakdown of glucose which transfers energy for all living processes
Aerobic respiration	Respiration that occurs when oxygen is present.
Anaerobic respiration	Respiration that occurs when there is insufficient oxygen.
Glucose	A simple sugar compound that is a chemical store of energy.
Cytoplasm	Jelly-like substance in all cells where cell reactions take place.
Mitochondria	Cell organelles where aerobic respiration occurs.
Lactic acid	A waste product of anaerobic respiration in animals that causes muscle fatigue. Oxygen is needed to convert it into carbon dioxide and water which are then excreted.
Muscle fatigue	In humans this is a decrease in the ability of a muscle to produce a force – brought on by exercise.
Yeast	A microscopic single-celled fungus.
Fermentation	Anaerobic respiration that occurs in yeast producing ethanol, carbon dioxide as waste products.

Ethanol A type of alcohol.

Anaerobic respiration takes place in the cytoplasm

Aerobic respiration takes place in the mitochondria



Year 8 Science: Respiration

Respiration

- Transfers (releases) e..... from glucose
- Happens in c.....
- Happens all of the time
- All living organisms (a....., plants, fungi & b.....) respire

Organisms use energy for:

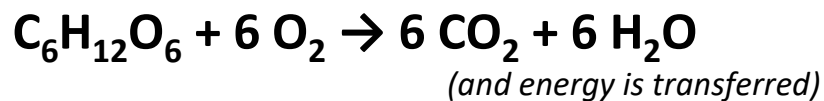
1. Building larger m..... from smaller ones
2. Movement
3. Transport of materials – g..... into the blood from small intestine & mineral ions from root cells
4. Keeping w.....

Aerobic Respiration (with

- The breakdown of g..... using **oxygen** to transfer energy
- Oxygen is breathed in and is transported around the body in the b.....
- The word equation for aerobic respiration is:

g..... + oxygen → c..... d..... + water
(and is transferred)

- The symbol equation for aerobic respiration is:

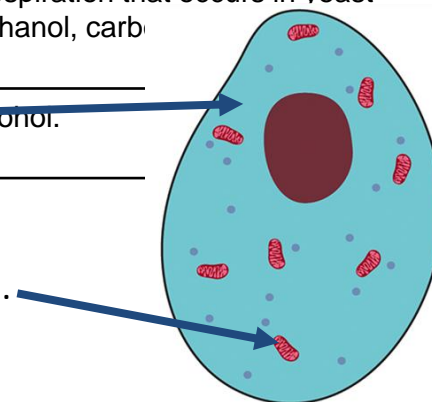


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Key Terms	Definitions
Respiration	The breakdown of g..... which transfers e..... for all living processes
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Y.....	A microscopic single-celled fungus.
F.....	Anaerobic respiration that occurs in yeast producing ethanol, carb
Anaerobic respiration products.
takes place in the A type of alcohol.
.....

Aerobic respiration

takes place in the



Year 8 Science: Respiration

Anaerobic Respiration

- The breakdown of glucose **without oxygen** to transfer energy
- Less energy transferred by anaerobic respiration than aerobic respiration.

Anaerobic Respiration in Yeast and Plants

- **Yeast** are single-celled fungi which can respire either with or without oxygen.
- The word equation for aerobic respiration in yeast and plants is:



(and energy is transferred)

- This type of anaerobic respiration can also be called fermentation.
- We use fermentation of yeast to produce ethanol when used in brewing beer and carbon dioxide (CO_2) when used in bread making (CO_2 makes bread rise).



Bread risen by CO_2

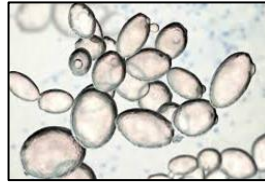


Alcohol from ethanol

- **Plants** sometimes use anaerobic respiration if their roots get waterlogged. The root cells cannot access oxygen and so respire anaerobically.



yeast cells



Anaerobic Respiration in Animals

- This happens during intense exercise.
- During exercise, heart and breathing rate increase - to get more oxygen around the body.
- Anaerobic respiration takes place when aerobic respiration is not happening fast enough to get energy to muscles
- Aerobic and anaerobic respiration happen at the same time.
- The word equation for aerobic respiration in animals is:

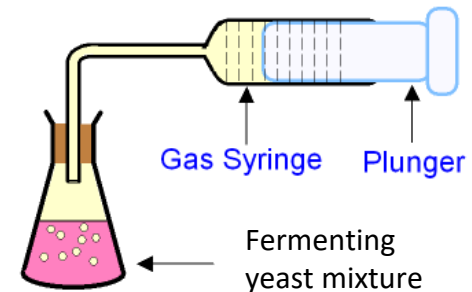


(and energy is transferred)

- The buildup of lactic acid in muscles causes fatigue.
- Oxygen is needed in order to remove the lactic acid - we continue to breathe heavily after exercise to get the oxygen to break down lactic acid.

Investigating Yeast Fermentation

- We can culture yeast to measure the rate of fermentation.
- We measure how much carbon dioxide is produced in a given time.
- Conditions that can be changed in this investigation:
 - the temperature of the yeast
 - the concentration of glucose
 - the type of sugar



Year 8 Science: Respiration

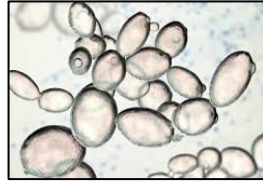
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- The breakdown of glucose to transfer energy
- Less energy transferred by anaerobic respiration than aerobic respiration.

Anaerobic Respiration in Yeast and Plants

- **Yeast** are single-celled which can respire either with or without oxygen.

yeast cells



- The word equation for aerobic respiration in yeast and plants is:

Glucose → + **Carbon dioxide**
(and energy is transferred)

- This type of anaerobic respiration can also be called
- We use fermentation of yeast to produce ethanol when used in brewing beer and carbon dioxide (CO₂) when used in bread making (CO₂ makes bread rise).



Bread risen by CO₂



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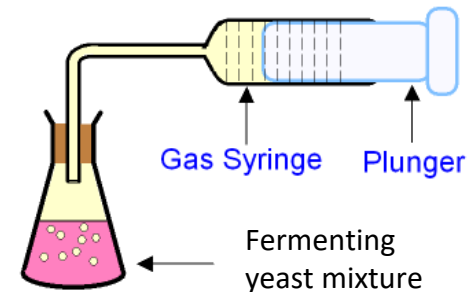
Glucose →
(and energy is transferred)

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 - the concentration of
 - the type of sugar

Glucose → **Ethanol** +

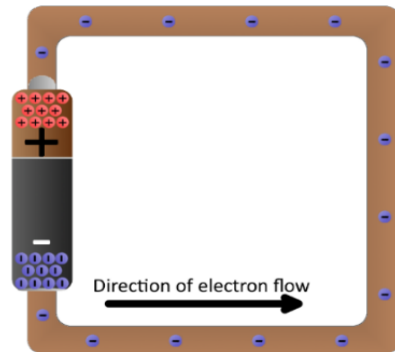


Year 8 Science: Electrical Current

Electrical current is a flow of electrical charge.

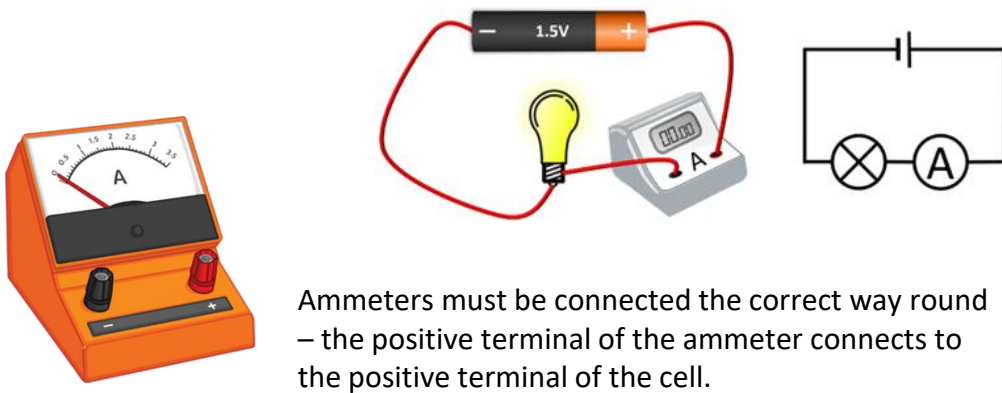
Electrical conductors allow electrons to flow through them.

A cell or battery sets up the difference in charge in the circuit, which causes electrons to flow from the negative charge towards the positive charge.



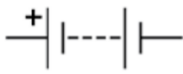




Ammeters measure the current that flows through them when they are placed in a circuit.

Ammeters must be connected in series – they must be in the loop of the circuit.



Ammeters must be connected the correct way round – the positive terminal of the ammeter connects to the positive terminal of the cell.

Key Terms	Definitions
Charge (Q)	A property of some particles, which causes them to experience a force when they are near others. Charge can be positive, negative or neutral .
Coulombs (C)	The unit of charge. 1 coulomb is the charge that flows when a current of 1 A flows for 1 s, which is approximately 6 240 000 000 000 000 electrons!
Current (I)	The rate of flow of charge in a circuit.
Amps (A)	The unit of current. 1 amp = 1 coulomb per second
Ammeter 	Used to measure the current flowing in the circuit. Ammeters must be connected in series – this means that you need to break the circuit and insert the ammeter in so that the current flows through it!
Cell 	A chemical store of energy that can cause an electrical current to flow in a circuit.
Battery 	Two or more electrical cells working together.
Connecting lead 	A metal wire that allows current to flow through it easily.
Lamp / bulb 	A filament lamp contains a tiny wire that heats up when a current flows through it which emits light.

Equation

$$Q = I \times t$$

Meanings of terms in equation

$Q = \text{charge (C)}$
 $I = \text{current (A)}$
 $t = \text{time (s)}$

Current = the rate of transferring charge.

A current of 1 amp is a charge of 1 coulomb flowing past a point in 1 second.

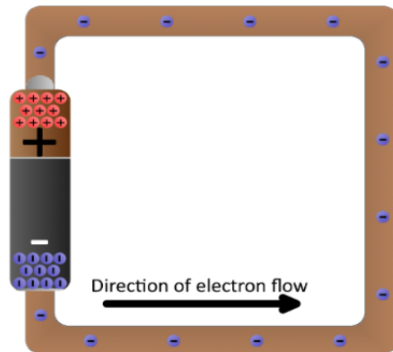
$$1 \text{ A} = 1 \text{ C/s}$$

Year 8 Science: Electrical Current

Electrical current is a flow of electrical c.....

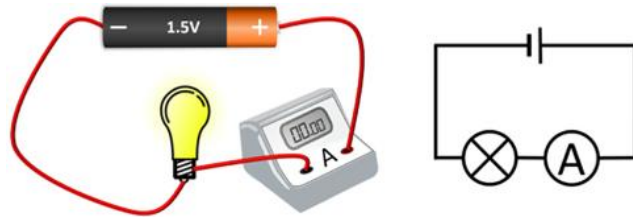
Electrical c..... allow electrons to flow through them.

A cell or b..... sets up the difference in charge in the circuit, which causes electrons to flow from the negative charge towards the positive charge.


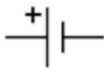
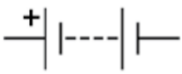




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Amps (.....)	The unit of current. 1 amp = 1 coulomb per second
A..... 	Used to measure the current flowing in the circuit. Ammeters must be connected in series – this means that you need to break the circuit and insert the ammeter in so that the current flows through it!
C..... 	A chemical store of energy that can cause an electrical current to flow in a circuit.
B..... 	Two or more electrical cells working together.
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1 A = 1 C/s

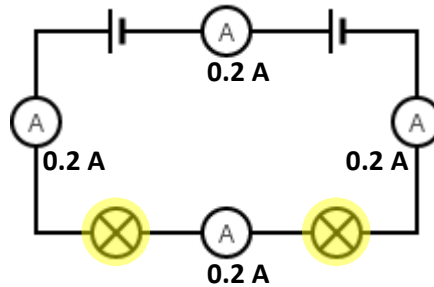
Equation	Meanings of terms in equation
$Q = I \times t$	$Q = \dots\dots\dots (C)$ $I = \dots\dots\dots (A)$ $t = \dots\dots\dots (s)$

Year 8 Science: Electrical Current

Series circuits contain only one loop or path for the current to flow.

This means that the current is the same at all points in the circuit.

It doesn't matter where you put the ammeter in a series circuit!

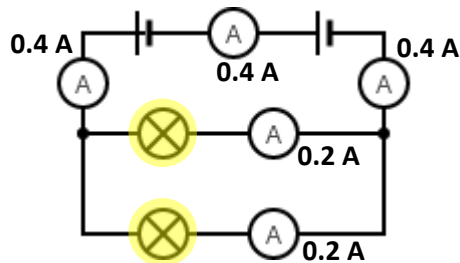


In series: $A_1 = A_2 = A_3 \dots$

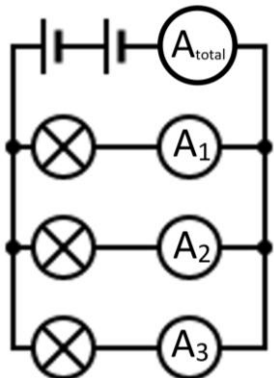
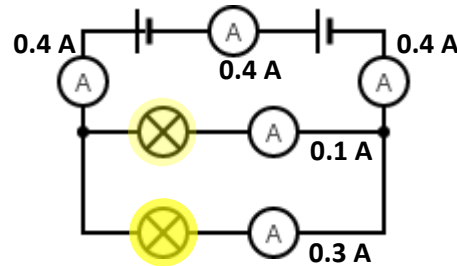
Parallel circuits contain more than one loop or path for the current to flow.

The current splits as it goes through the branches and adds back up when the branches rejoin.

The current can split evenly (identical lamp types)



OR the current can split unevenly (different types of lamp)

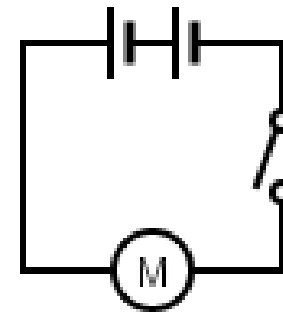


The current in the separate branches always adds up to the current in the main loop of the circuit.

In parallel: $A_{\text{total}} = A_1 + A_2 + A_3$

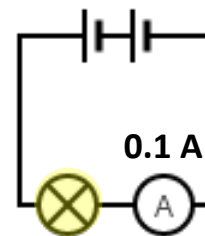
Key Terms	Definitions
Series circuit	An electrical circuit where all the components are connected in one loop.
Parallel circuit	An electrical circuit containing more than one loop or path for the current to flow.
Energy pathway	A way of transferring energy from one store to another, for example electrical current.

Electrical current is an **energy pathway** – it transfers or shifts energy from one store to another. We call this **electrical working** (or **electrical work done**).

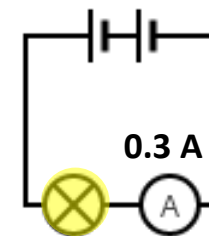


eg this circuit transfers energy from the **cell (a chemical store)** to the **motor (a kinetic store)**

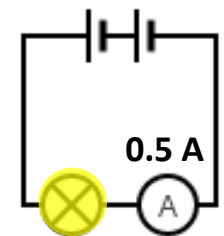
These lamps all have different **power ratings** so they transfer energy at different rates.



0.3 W



0.9 W



1.5 W

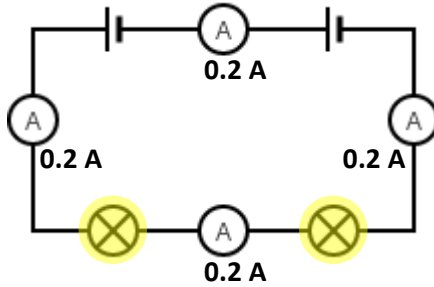
The larger the current, the faster energy is being transferred!

Year 8 Science: Electrical Current

S..... **circuits** contain only one loop or path for the current to flow.

This means that the current is the same at all points in the circuit.

It doesn't matter where you put the ammeter in a series circuit!

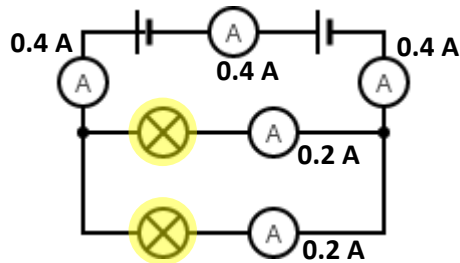


In series: $A_1 = A_2 = A_3 \dots$

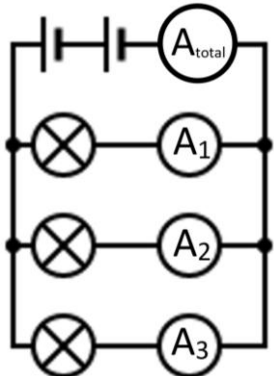
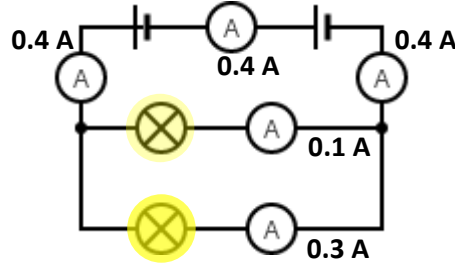
P..... **circuits** contain more than one loop or path for the current to flow.

The current splits as it goes through the branches and adds back up when the branches rejoin.

The current can split e.....
(identical lamp types)



OR the current can split unevenly
(different types of lamp)

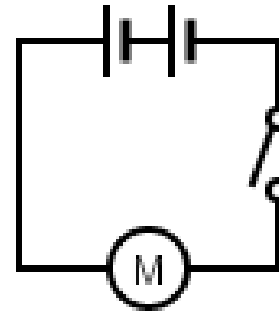


The current in the separate b..... always adds up to the current in the main loop of the circuit.

In parallel: $A_{total} = A_1 + A_2 + A_3$

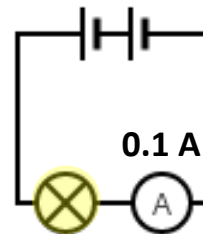
Key Terms	Definitions
S circuit	An electrical circuit where all the components are connected in one loop.
P circuit	An electrical circuit containing more than one loop or path for the current to flow.
Energy p	A way of transferring energy from one store to another, for example electrical current.

Electrical current is an **energy p**..... – it transfers or shifts energy from one store to another. We call this **electrical working** (or **electrical**

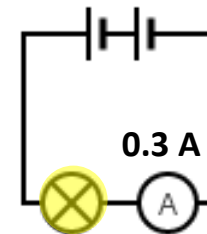


eg this circuit transfers energy from the **cell (a chemical store)** to the **motor (a kinetic store)**

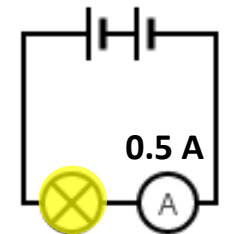
These lamps all have different **p**..... **ratings** so they transfer energy at different rates.



0.3 W



0.9 W



1.5 W

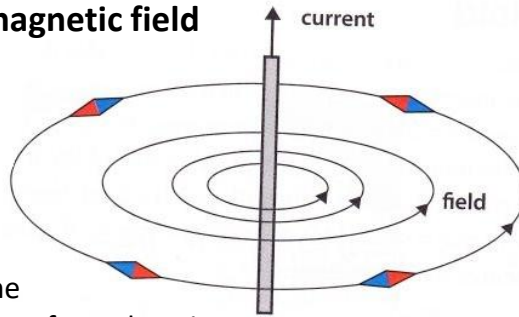
The larger the current, the faster energy is being tr.....!

Year 8 Science: Electrical Current

When a current flows through a wire, a **magnetic field** is produced around the wire.

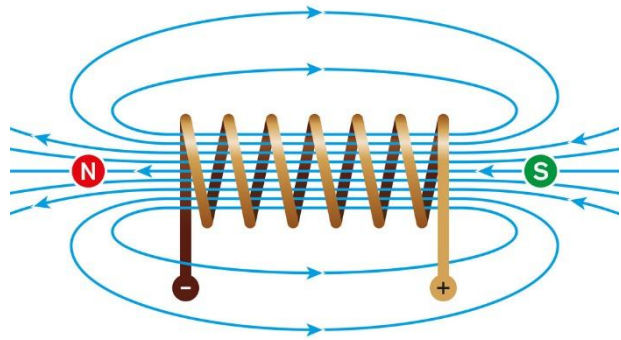
The **higher the current** flowing through the wire, **the stronger the magnetic field** it produces.

The magnetic field is strongest close to the wire and decreases in strength moving away from the wire.

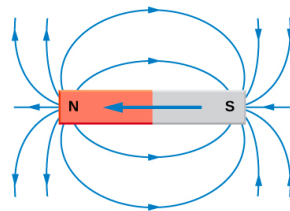


Key Terms	Definitions
Magnetic field	The area around a magnetised object that the force acts.
Solenoid	A coil of wire with a current flowing through it.
Electromagnet	A solenoid with an iron core to strengthen its magnetic field.
Iron core	A cylinder or bar of iron that is placed inside a solenoid.
Induced magnet	Induced magnets only act as magnets when they are in a magnetic field.

A **solenoid** is a coil of wire with a current flowing through it.



The shape of the magnetic field around a solenoid is the same as the shape of a magnetic field around a **bar magnet**.

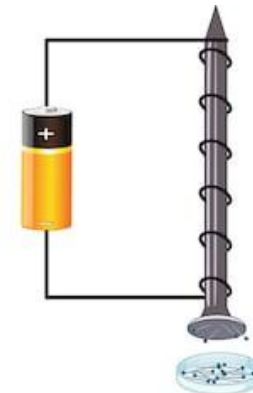
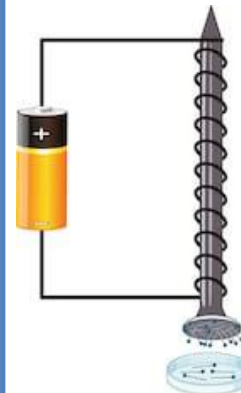


A simple electromagnet can be made using an iron nail, a coil of wire and a battery or powerpack.

You can increase the current flowing through the electromagnet by increasing the number of cells in the circuit or by turning up the powerpack.

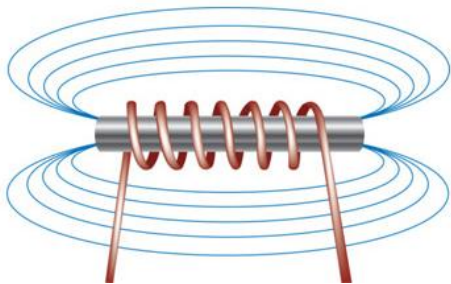


Increasing the current, increases the strength of the electromagnet.



Increasing the number of turns of wire in the coil, increases the strength of the electromagnet.

An **electromagnet** is a solenoid with an **iron core**.



The iron core increases the strength of the electromagnet as it becomes an **induced magnet** when the current is flowing through the solenoid.

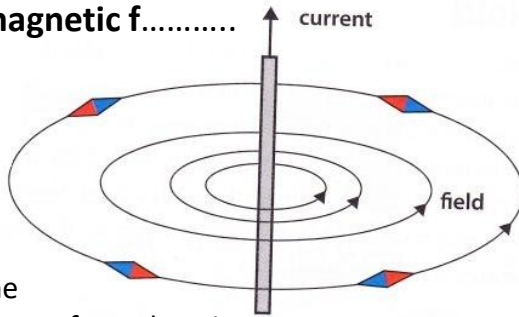
Electromagnets are only magnetised when the current is flowing through the wire, so **they can be switched on or off**.

Year 8 Science: Electrical Current

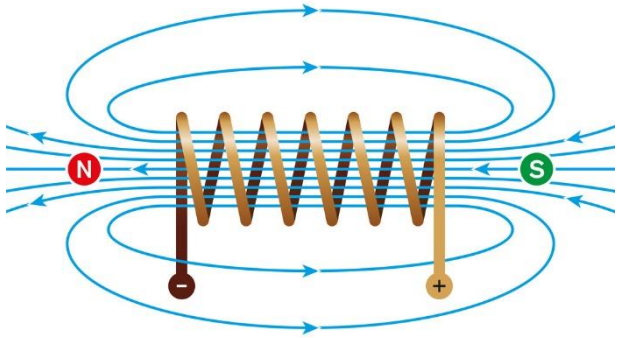
When a current flows through a wire, a **magnetic f.....** is produced around the wire.

The **higher the current** flowing through the wire, **the** **the magnetic field** it produces.

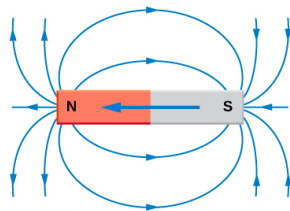
The magnetic field is strongest close to the wire and in strength moving away from the wire.



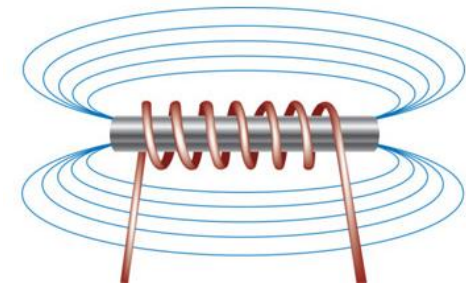
A **solenoid** is a c..... of wire with a current flowing through it.



The shape of the magnetic field around a solenoid is the same as the shape of a magnetic field around a



An **electromagnet** is a solenoid with an **core**.



The iron core increases the strength of the electromagnet as it becomes an **i..... m.....** when the current is flowing through the solenoid.

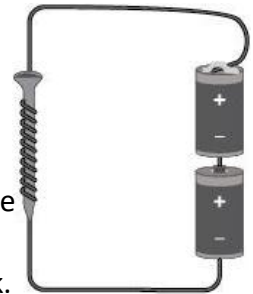
Electromagnets are only magnetised when the current is flowing through the wire, so **they can be switched on or off**.

Key Terms	Definitions
M..... f.....	The area around a magnetised object that the force acts.
S.....	A coil of wire with a current flowing through it.
E.....	A solenoid with an iron core to strengthen its magnetic field.
Iron core	A cylinder or bar of iron that is placed inside a solenoid.
Induced magnet	Induced magnets only act as magnets when they are in a m..... f.....

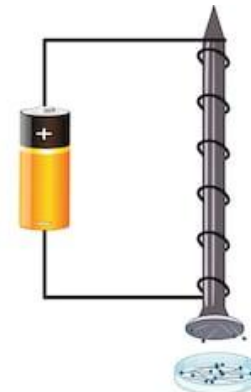
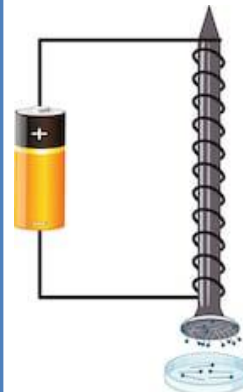


A simple e..... can be made using an iron nail, a coil of wire and a battery or powerpack.

You can increase the c..... flowing through the electromagnet by increasing the number of cells in the circuit or by turning up the powerpack.



Increasing the current, the strength of the electromagnet.



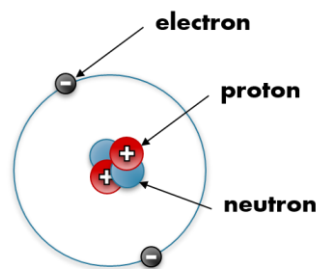
Increasing the number of of wire in the coil, increases the strength of the electromagnet.

Year 8 Science: Atoms and bonding

The Structure of the Atom

- An atom is made up of three subatomic particles: **protons, neutrons** and **electrons**.
- Protons and neutrons are found in the **nucleus**
- Electrons are found orbiting the nucleus in energy levels (electron shells)

Name of particle	Relative charge	Relative mass
Proton	+1	1
Neutron	0	1
Electron	-1	Very small



Helium Atom

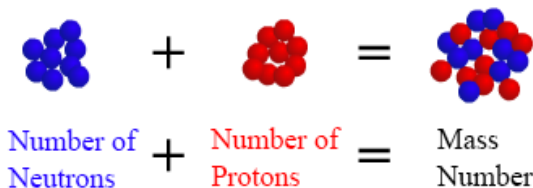
- Atoms have **no overall charge** because they have the same number of positive protons as negative electrons.

Key Terms	Definitions
Atom	The particles that make up all substances with mass; they are made of protons, neutrons and electrons.
Nucleus	The centre of an atom; it is made of protons and neutrons.
Proton	A subatomic particle found in the nucleus, it has an electric charge of +1 and a relative mass of 1.
Electron	A subatomic particle that orbits the nucleus of an atom, it has an electric charge of -1 and a very small mass
Subatomic	Describes particles smaller than an atom (protons, neutrons, electrons).
Neutron	A subatomic particle found in the nucleus of an atom, it has a charge of 0 and a mass of 1.
Atomic number	The number of protons in an atom.
Mass number	The number of protons + the number of neutrons in an atom.

Atomic Number and Mass Number

The **atomic number** tells you how many protons the atom contains.

Every element has a different atomic number.



mass number (the larger number) → 7

atomic number (the smaller number) → 3

Li

protons = 3
neutrons = 7 - 3 = 4
electrons = 3

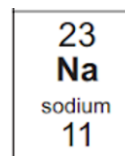
Electron Configuration – 2, 8, 8 rule

In atoms, the number of electrons = the number of protons.

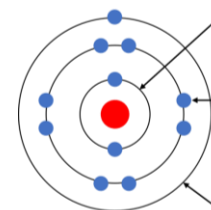
Only a certain number of electrons can fit in each energy level (electron shell) – this is the 2, 8, 8 rule.

Electrons fill up the energy levels starting from the lowest first.

Sodium has 11 electrons.



2, 8, 1



up to 2 electrons can fit in the 1st energy level

up to 8 electrons can fit in the 2nd energy level

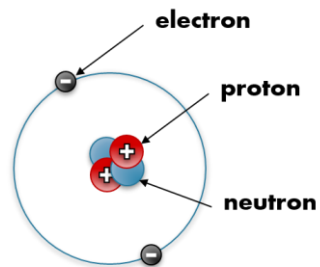
up to 8 electrons can fit in the 3rd energy level

Year 8 Science: Atoms and bonding

The Structure of the Atom

- An atom is made up of three subatomic particles: **p**....., **n**..... and **e**.....
- Protons and neutrons are found in the **n**.....
- Electrons are found orbiting the nucleus in levels (electron shells)

Name of particle	Relative charge	Relative mass
Proton		1
Neutron	0	
Electron		\



Helium Atom

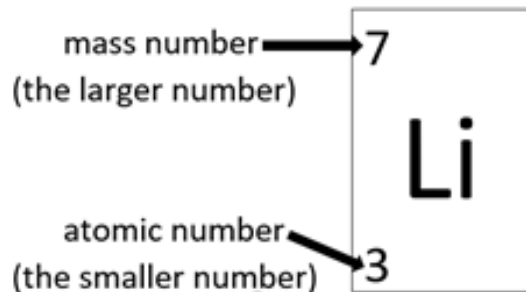
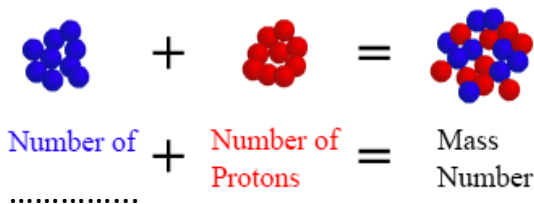
- Atoms have **no overall c**..... because they have the same number of positive protons as negative electrons.

Key Terms	Definitions
A.....	The particles that make up all substances with mass; they are made of protons, neutrons and electrons.
N.....	The centre of an atom; it is made of protons and neutrons.
P.....	A subatomic particle found in the nucleus, it has an electric charge of +1 and a relative mass of 1.
E.....	A subatomic particle that orbits the nucleus of an atom, it has an electric charge of -1 and a very small mass
Subatomic	Describes particles than an atom (protons, neutrons, electrons).
N.....	A subatomic particle found in the nucleus of an atom, it has a charge of 0 and a mass of 1.
.....	The number of protons in an atom.
.....	The number of protons + the number of neutrons in an atom.

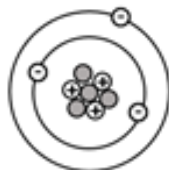
Atomic Number and Mass Number

The **atomic number** tells you how many the atom contains.

Every element has a d..... atomic number.



protons = 3
neutrons = 7 - 3 = 4
electrons = 3



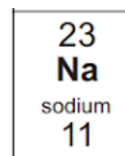
Electron Configuration – 2, 8, 8 rule

In atoms, the number of electrons = the number of

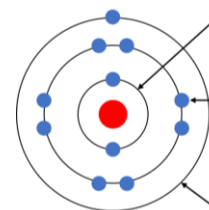
Only a certain number of electrons can fit in each energy level (electron shell) – this is the 2,, rule.

Electrons fill up the energy levels starting from the lowest first.

Sodium has electrons.



2, 8, 1



up to electrons can fit in the 1st energy level


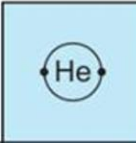

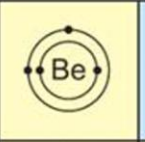
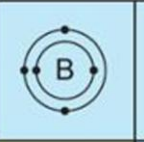
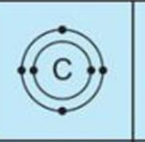
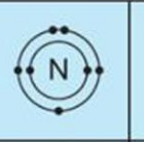
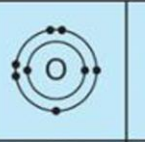
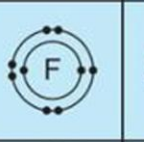




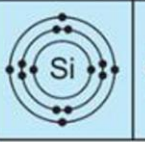
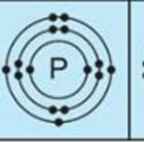
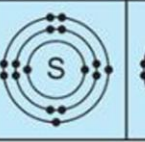
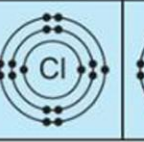

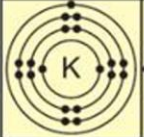
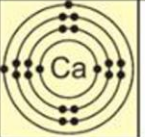
up to 8 electrons can fit in the 2nd energy level

up to 8 electrons can fit in the 3rd energy level

Year 8 Science: Atoms and bonding

The **group number** on the periodic table shows number of electrons in the outer energy level (electron shell).

Atoms of the elements in group 0 have full outer shells.

1	2	3	4	5	6	7	0
							
							
							
		<p>Electron configuration of elements 1-20 Written form is e.g. 2.8.1 for K</p>					

Key Terms	Definitions
Delocalised electron	Electrons that are not held in place around one atom – they are free to move.
Energy level (electron shell)	A distinct energy level where electrons can exist.
2,8,8.	The maximum number of electrons that can exist in each energy level (electron shell).
Ion	Formed when an atom gains or loses electrons and becomes charged.
Electrostatic force	Force between two oppositely charged objects

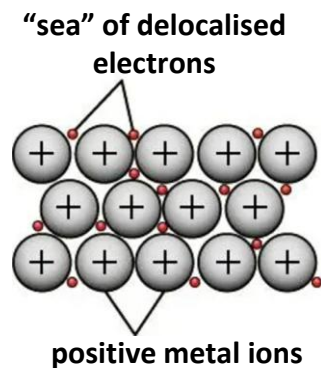
Atoms react to get a full outer shell.



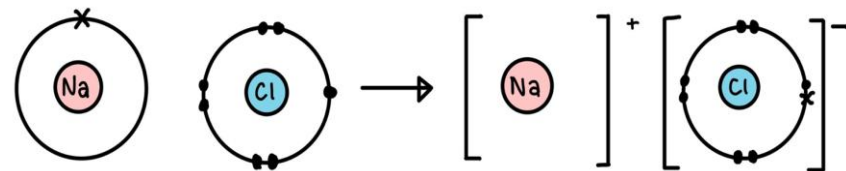
- Group 1 loses 1 electron, forms a +1 ion
- Group 2 loses 2 electrons, forms a + 2 ion
- Group 6 gains 2 electrons, forms a -2 ion
- Group 7 gains 1 electron, forms a -1 ion

Metallic bonding

- The outer shell electrons of metal atoms are shared across the structure.
- These **delocalised electrons** are free to move through the whole structure – this is why metals can conduct electricity.



Ionic bonding

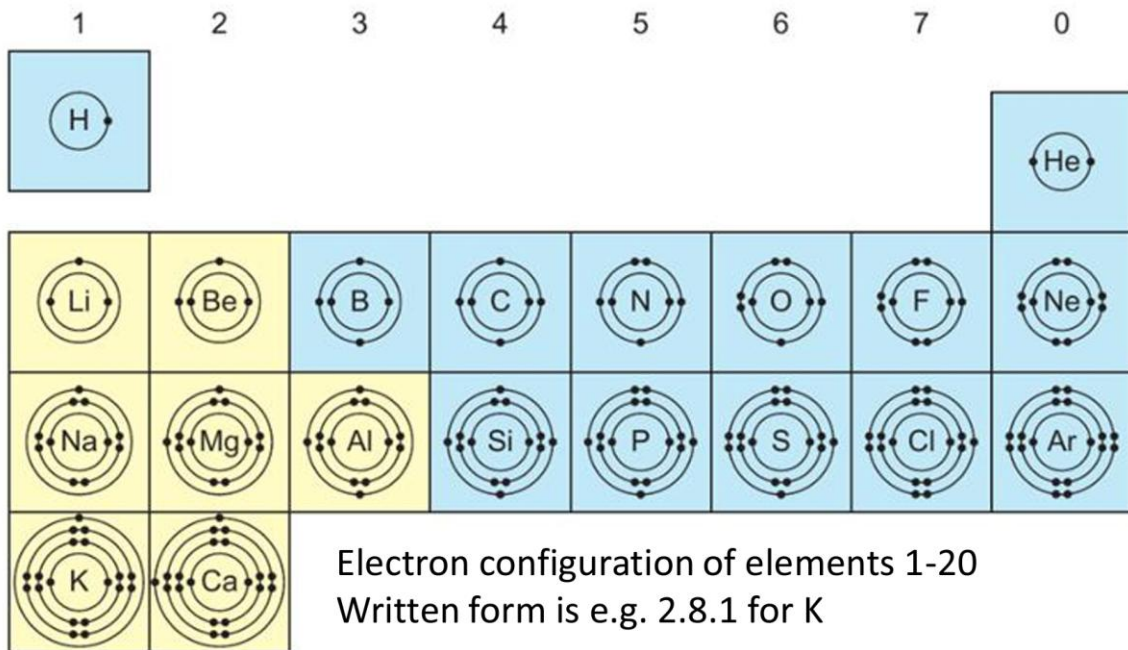


- Happens between metal and non-metal atoms.
- Metal atoms lose electrons to form positive ions.
- Non-metal atoms gains electrons to form negative ions.
- The electrostatic force of attraction between the oppositely charged ions bonds them together.

Year 8 Science: Atoms and bonding

The **g..... number** on the periodic table shows number of electrons in the outer energy level (electron shell).

Atoms of the elements in group 0 have f..... outer shells.



Key Terms	Definitions
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Energy level (electron	A distinct energy level where electrons can exist.
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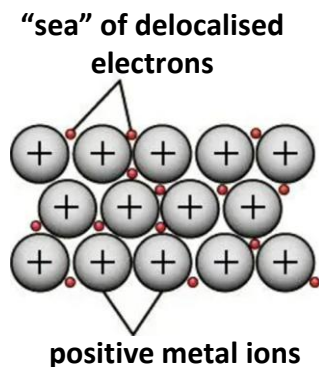
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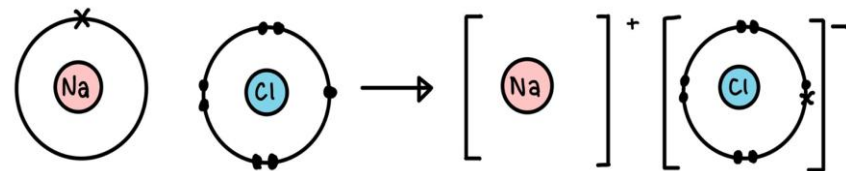
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- Group 7 1 electron, forms a -1 ion

Metallic bonding

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Ionic bonding



- Happens between metal and atoms.
- Metal atoms electrons to form positive ions.
- Non-metal atoms gains electrons to form ions.
- The force of attraction between the oppositely charged ions bonds them together.

Year 8 Science: Transport

Diffusion

Diffusion is the **net movement of particles from an area of high concentration to an area of low concentration**

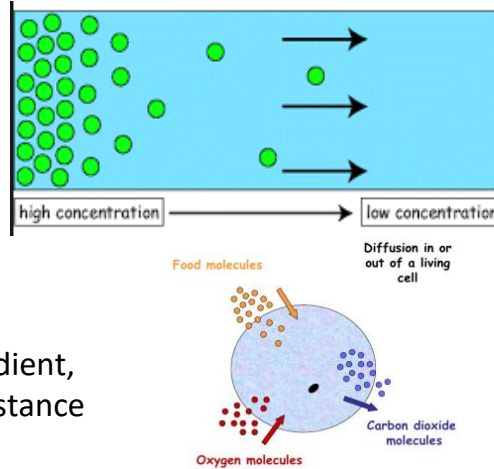
Substances that diffuse into cells:

- Oxygen
- Glucose

Substances that diffuse out of cells;

- Carbon dioxide
- Water

High surface area, concentration gradient, temperature and a small diffusion distance increase the rate of diffusion



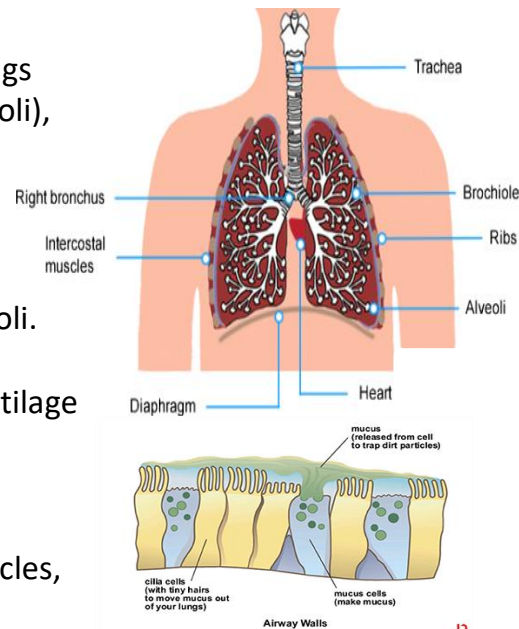
The Respiratory System - Lungs

The respiratory system includes the lungs (trachea, bronchi, bronchioles and alveoli), diaphragm, ribs and rib muscles.

When we breathe in, air enters the lungs; it travels through the trachea, bronchi, bronchioles then into the alveoli.

The trachea is held open by rings of cartilage to stop it collapsing when the neck is moved and bent.

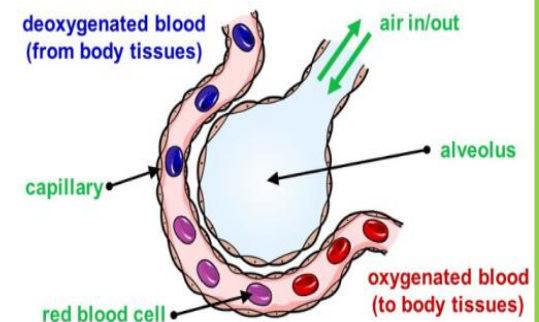
Mucus traps pathogens and other particles, cilia waft it up airways .



Key Terms	Definitions
Diffusion	The spreading out of the particles of any substance in solution or a gas from an area of higher concentration to a lower concentration.
Cilia	Microscopic hair like structures that cover the cells in the trachea and bronchi
Thorax	Upper part of the body – chest, heart, lungs
Oxygenated blood	Blood containing oxygen.
Deoxygenated blood	Blood that doesn't contain oxygen.
Alveoli	Tiny air sacs in the lungs where gas exchange occurs.
Inhaling	Breathing in
Exhaling	Breathing out
Organ rejection	When the immune system attacks a transplanted organ.
Transpiration	The loss of water from the surface of plants that occurs by evaporation.

The Respiratory System – Gas exchange

The lungs contain millions of microscopic alveoli, tiny air sacs that are one cell thick and are surrounded by tiny blood vessels called capillaries.



Lots of alveoli - large surface area for more diffusion
Thin walls - short distance for diffusion.

Year 8 Science: Transport

Diffusion

Diffusion is the **net movement of particles from an area of high concentration to an area of low concentration**

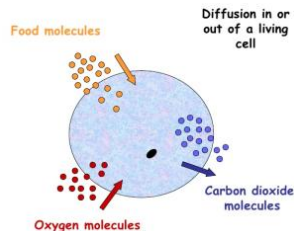
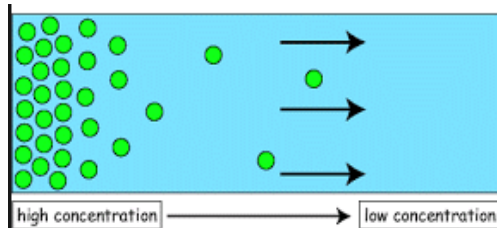
Substances that diffuse into cells:

- O.....
- G.....

Substances that diffuse out of cells;

- C.....
- W.....

High surface area....., concentration gradient, temperature and a small diffusion distance increase the rate of diffusion



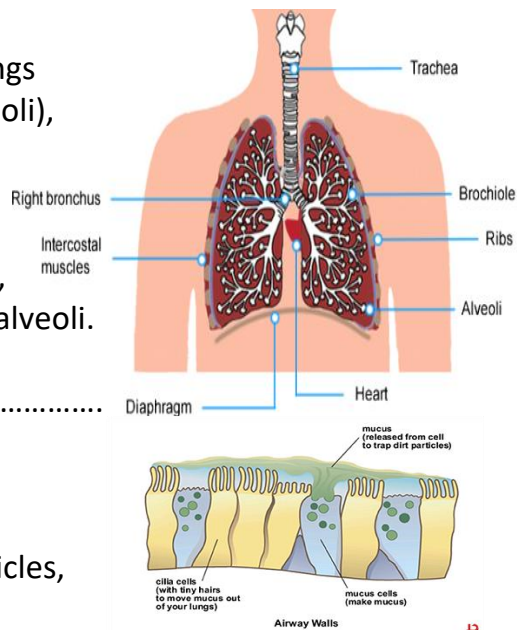
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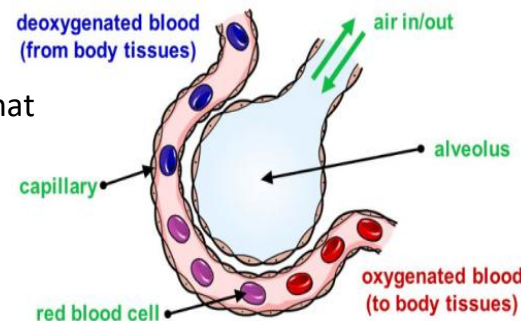
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Key Terms	Definitions
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The Respiratory System – Gas exchange

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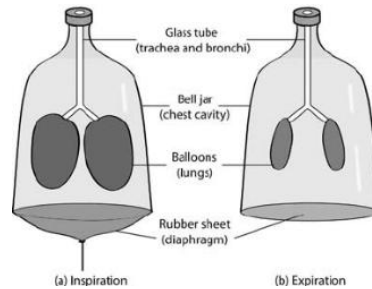


Lots of alveoli - large surface area for more diffusion
Thin walls - short distance for diffusion

Year 8 Science: Transport

The Respiratory System – Breathing

	Inhaling	Exhaling
Diaphragm	Contract and flatten	Relax and bulge up
Intercostal muscles	Contract	Relax
Ribs (movement)	Up and out	Down and in
Pressure in lungs	Increases	Decreases
Volume of lungs	Decreases	Increases
Movement of the air.	In	Out



A bell jar is a good but limited model as it does not show alveoli and does not show movement of the ribs.

The Respiratory System – Smoking

Cigarette smoke contains:

- Tar (which can cause lung cancer)
- Carbon monoxide (which reduces the amount of oxygen the blood can carry and causes breathlessness)
- Nicotine (which is addictive).

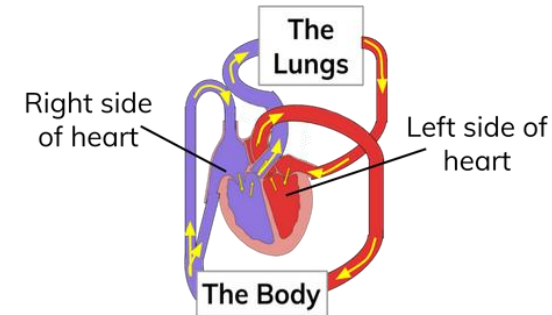
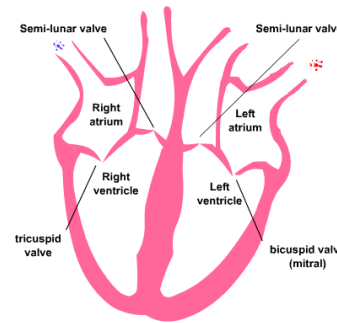
Smoking damages the cilia, which leads to a smokers cough.

The Circulatory System - The Heart

- Consists of the heart, blood vessels and blood.
- Transports substances around the body e.g. oxygen, glucose, carbon dioxide and water

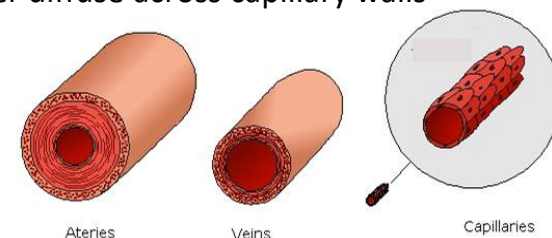
The heart is:

- Made of muscular tissue and nerve tissue
- Does not tire
- Pumps blood around the body
- Right side pumps deoxygenated blood to lungs
- Left side pumps oxygenated blood to body



The Circulatory System- Blood vessels

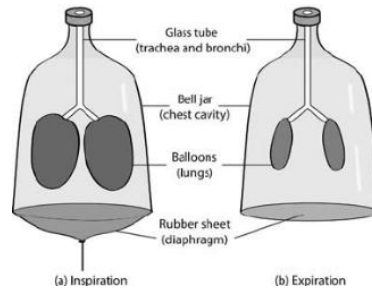
- Arteries carry blood away from heart under high pressure so are thickest
- Veins carry blood back to heart so have valves to stop blood flowing backwards
- Capillaries are small and 1 cell thick
- Substances such as oxygen, glucose, carbon dioxide and water diffuse across capillary walls



Year 8 Science: Transport

The Respiratory System – Breathing

	Inhaling	Exhaling
Diaphragm	Contract and flatten	Relax and bulge up
Intercostal muscles	Contract	Relax
Ribs (movement)	Up and out	Down and in
Pressure in lungs	Increases	Decreases
Volume of lungs	Decreases	Increases
Movement of the air.	In	Out



A bell jar is a good but limited model as it does not show a..... and does not show movement of the r.....

The Respiratory System – Smoking

Cigarette smoke contains:

- T..... (which can cause lung cancer)
- Carbon monoxide (which reduces the amount of oxygen the blood can carry and causes breathlessness)
- N..... (which is addictive).

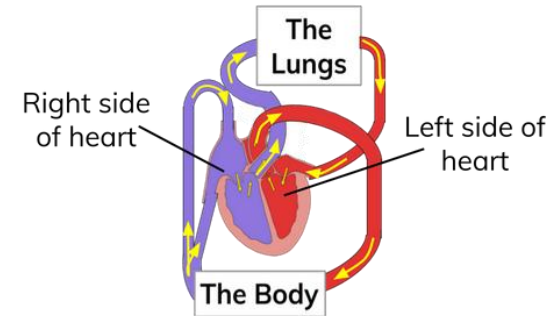
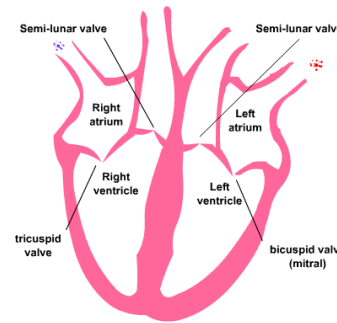
Smoking damages the c....., which leads to a smokers cough.

The Circulatory System - The Heart

- Consists of the heart, blood vessels and b.....
- Transports substances around the body e.g. oxygen, g....., carbon dioxide and water

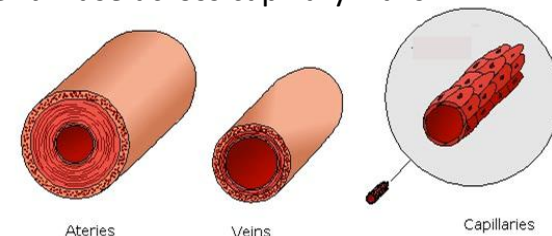
The heart is:

- Made of muscular tissue and nerve tissue
- Does not tire
- P..... blood around the body
- Right side pumps oxygenated blood to body
- Left side pumps deoxygenated blood to lungs



The Circulatory System- Blood vessels

- A..... carry blood away from heart under high pressure so are thickest
- V..... carry blood back to heart so have valves to stop blood flowing backwards
- C..... are small and 1 cell thick
- Substances such as oxygen, glucose, carbon dioxide and water diffuse across capillary walls

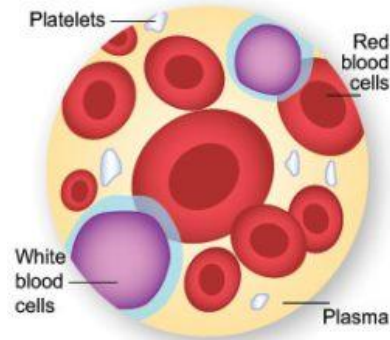


Year 8 Science: Transport

The Circulatory System- Blood

Blood is made up from red blood cells, white blood cells and platelets floating in a pale yellow liquid called plasma.

- Red blood cells carry oxygen around the body.
- White blood cells are part of the immune system and are involved in fighting disease.
- Platelets are needed for blood clotting.
- Plasma transports dissolved glucose and carbon dioxide.



The Circulatory System- Blood groups and transplants

There are 4 different blood groups called O, A, B and AB.

If a person loses lots of blood due to an accident or an operation, they might need to have a blood transfusion. The blood that is transfused needs to be compatible. If it is not compatible, the immune system will attack it.

Donor	Recipient			
	A	B	AB	O
A	✓	x	✓	x
B	x	✓	✓	x
AB	x	x	✓	x
O	✓	✓	✓	✓

- Blood group O can be given to anyone
- People with blood group AB can receive any type of blood

Transplanted organs must be compatible between donor and recipient – there is a chance of rejection if not.

Rejection is when the immune system attacks the organ.

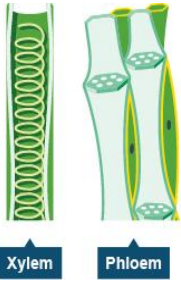
Transplanted organs come from people who have died.

Transplant lists are long as it can be hard to find a donor match.

Transport in plants – Xylem, Phloem and Transpiration

Xylem:

- Made of dead cells strengthened by lignin
- Transports water and dissolved mineral ions
- Transports up the plants

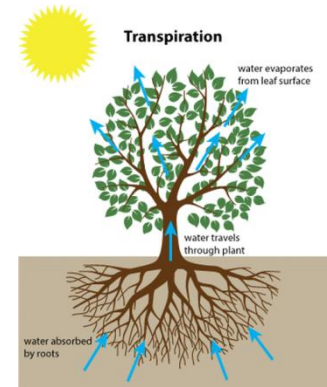


Phloem:

- Living cells
- Contains sieve plates
- Transports water and dissolved glucose up and down the plant

Transpiration:

- Loss of water by evaporation from leaves
- As water evaporates more water is drawn in at roots
- Occurs through xylem



Transport in plants – Minerals

- Plants need minerals from the soil for healthy growth.
- Nitrates and magnesium are examples of minerals.
- Nitrates are needed to make proteins.
- A plant that is deficient in nitrates has stunted growth and yellow leaves.
- Magnesium is needed for making chlorophyll.
- Fertilisers can be added to the soil to improve the growth of crops and plants.

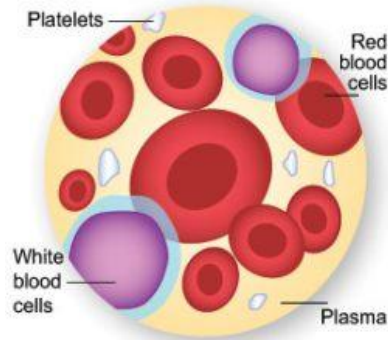


Year 8 Science: Transport

The Circulatory System- Blood

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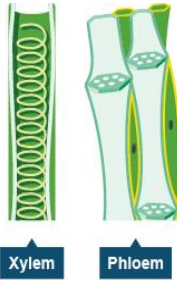
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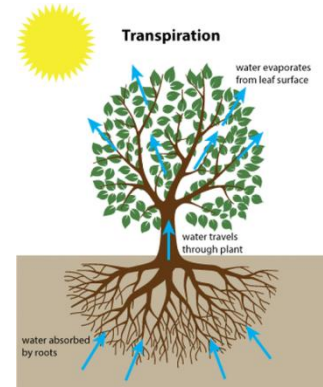


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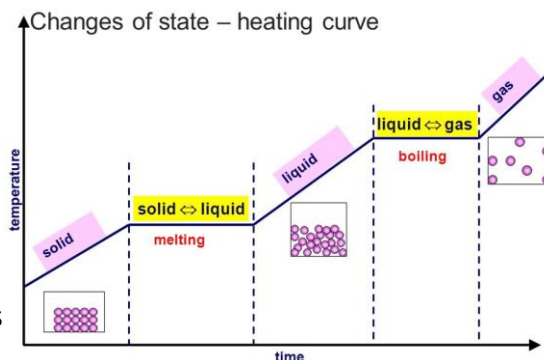
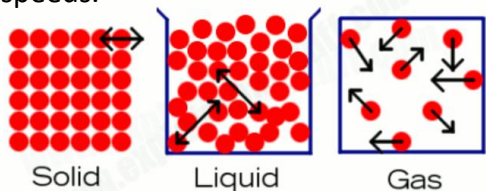
Year 8 Science: Particle Theory

Using the particle model

Solid – particles are in fixed positions and have a regular arrangement, a fixed volume and the particles vibrate around a fixed point.

Liquid – particles can move around each other, they have a fixed volume and an irregular arrangement.

Gas – particles are far apart, they move in random directions at random speeds.



When heating:

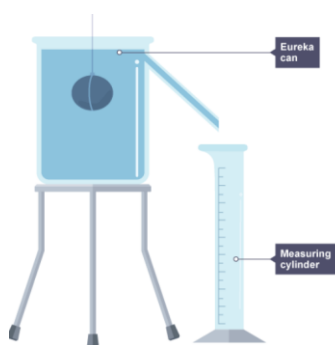
- Particles gain energy
- Particles move around more
- Eventually overcome the forces of attraction

Density

Density is the mass per unit volume of a material (kg/m^3)

To calculate the density of a regular shape take measurements of the dimensions of the shape and use the correct formula to calculate the volume.

Use a mass balance to determine the mass.



A Eureka can is used to measure the volume of a displaced water when an irregular shaped object is added to the can.

The volume of a liquid and gas is calculated using the volume and mass.

The volume of a cuboid = height x depth x width

Key Terms	Definitions
Particle motion	A description of the movement of particles with regard to speed and direction.
Temperature	A measure of the average kinetic energy of the particles in a system.
Kinetic Energy	Energy stored in a moving object
Mass	A measurement of the amount of matter in an object, measured in kg.
State	A state of matter – solid, gas, liquid
Melting	The change of state from a solid to a liquid
Freezing	The change of state from a liquid to a solid.
Evaporation	The change of state from a liquid to a gas
Condensing	The change of state from a gas to a liquid.
Volume	The amount of 3-dimensional space enclosed by a surface, measured in m^3
Density	The mass of a fixed volume, this is measured in kg/m^3 .
Regular	A shape where the angles or side lengths allow a formulae to be used to calculate area and volume.
Irregular	A shape where it is not possible to use formulae to calculate area or volume.
Displaced	Term used to describe the volume of fluid moved by a submerged object.

Equation	Meanings of terms in equation
$\rho = m/v$	<p>$\rho = \text{density } (\text{kg}/\text{m}^3)$ $m = \text{mass Kg}$ $V = \text{volume } \text{m}^3$</p> <p>For example a box with a volume of 27m^3 and a mass of 45kg. $45\text{kg} \div 27\text{m}^3 = 1.66 \dots$ so $1.7 \text{kg}/\text{m}^3$</p>

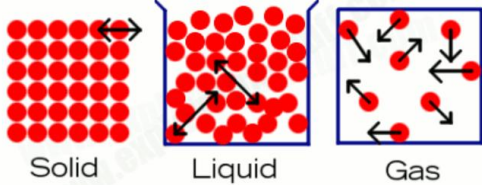
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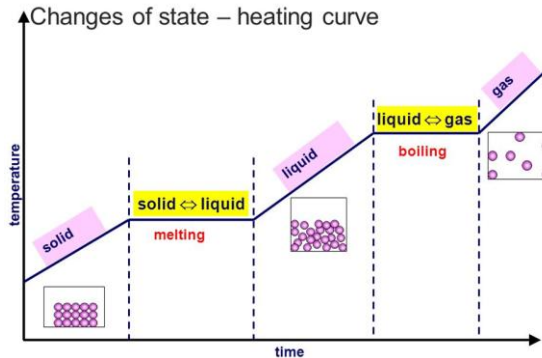
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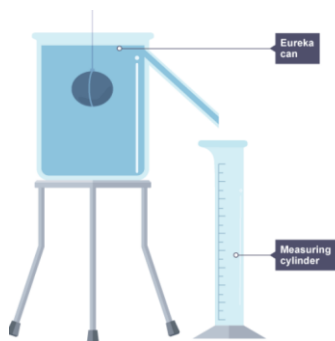


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Year 8 Science: Particle Theory

Pressure in fluids:

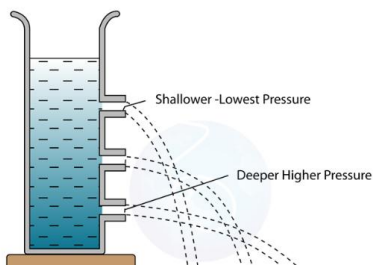
- Particles collide with the wall and apply a force

Ways of increasing pressure:

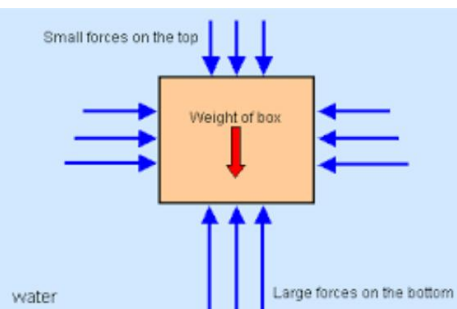
- Higher temperature, particles move around more so collide with the walls more often and with higher energy, so apply more force
- Lower volume, particles collide with the walls more often so apply a higher force
- More particles, particles collide with the walls more often so apply a higher force

Liquids

Density and Floating – An object will float when it is less dense than the water surrounding it.



- Pressure in a fluid increases with depth
- A greater weight of fluid above you increases the pressure



Upthrust - calculated by the difference in pressure between the bottom surface and top surface of a submerged or partially submerged object.

Key Terms	Definitions
Pressure	The force per unit area applied at right angles (normal) to the surface
Kinetic	Energy stored in a moving object
Mass	The quantity (amount) of matter in an object
Submerged	When an object sinks below the surface of a fluid.
Fluid	A substance that can flow – liquids and gases can flow.
Inverse proportion	A relationship between 2 quantities, as one increases the other reduces.

Equation	Meanings of terms in equation
$P = F/A$	$F = \text{resultant force (N)}$ $P = \text{pressure}$ $A = \text{area}$

Pressure in solids:

- Acts in one direction
- A larger force increases the pressure
- A smaller area increases the pressure

Examples:

- Wide feet mean polar bears don't sink into snow
- Standing on a nail hurts, lying on a bed of nails does not

Pressure Calculation Example:

A person has a body mass of 50 kg, each kg exerts a 10N force meaning they are applying a 500N onto the ground. The surface area of their feet is 0.02m^2

Calculate the pressure on the ground.

1. Pressure = Force \div Area
2. Pressure = $500\text{N} \div 0.02\text{m}^2$
3. Pressure = 2500 N/m^2

Year 8 Science: Particle Theory

Pressure in fluids:

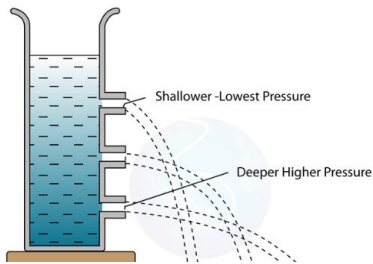
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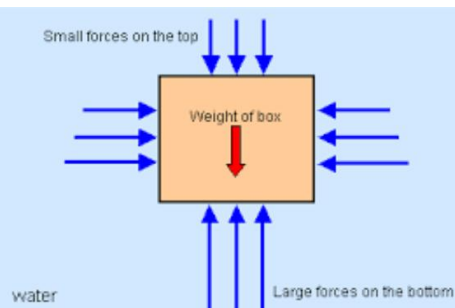
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Year 8 Science: Particle Theory

Thermal equilibrium

Thermal energy transfer happens until there is **thermal equilibrium**.
Thermal equilibrium means objects are the same temperature

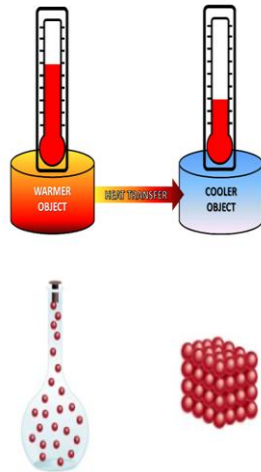
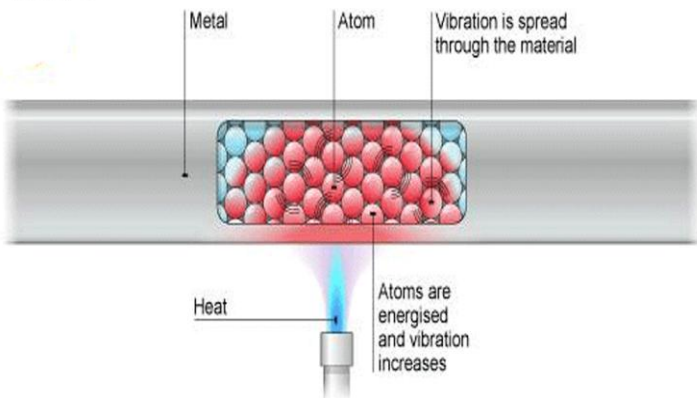
Conduction

- Occurs in solids
- Particles collide and pass on energy
- A good conductor means heat moves fast
- An insulator means heat moves slowly
- Metal is a good thermal conductor

Conduction

Heat Transfer By Conduction

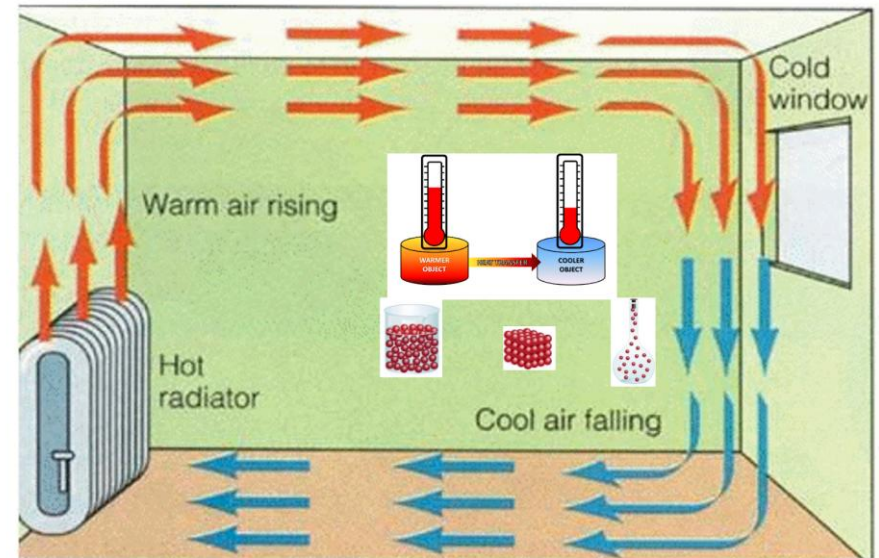
STEP 3



Convection

- Occurs in fluids
- Hot fluids are less dense so rise
- Cold fluids are more dense so fall
- Hot air balloons heat up the air inside the balloon to cause it to be less dense and so rise

Convection



Radiation

- An electromagnetic wave
- Does not need a medium to pass through, can travel through space

Year 8 Science: Particle Theory

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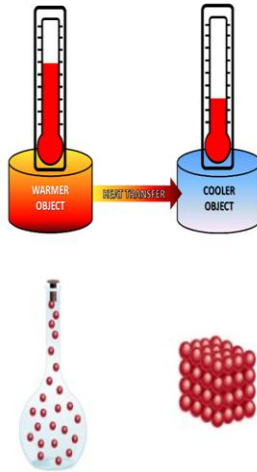
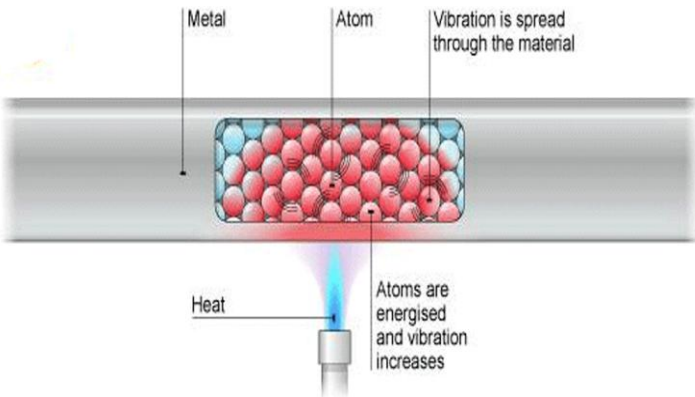
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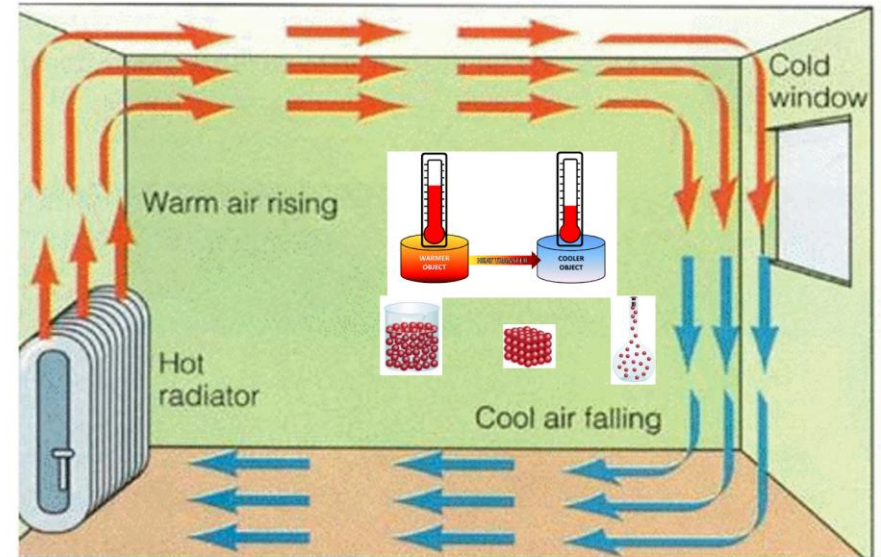
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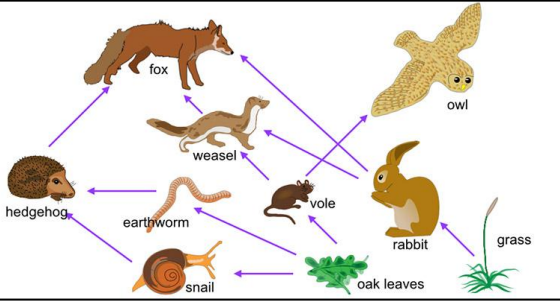


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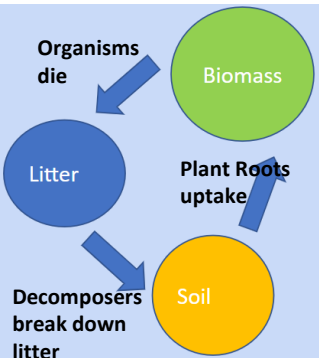
Year 8 Knowledge Organiser- Topic 1
Global Ecosystems

1. Food chains & Food webs



- Direction of arrow shows the transfer of energy (what is eaten by what)
- **Producer** - Gets energy from the sun (photosynthesis) E.g Grass
- **Primary Consumer** - An animal that eats producers E.g. Rabbit
- **Secondary Consumer** - An animal that eats primary consumers E.g Owl
- **Decomposer** - Breaks down the food chain and returns nutrients to the soil E.g. Fungi
- **Herbivore** - Only eats plants
- **Carnivore** - Only eats animals
- **Omnivore** - Eats both plants and animals.

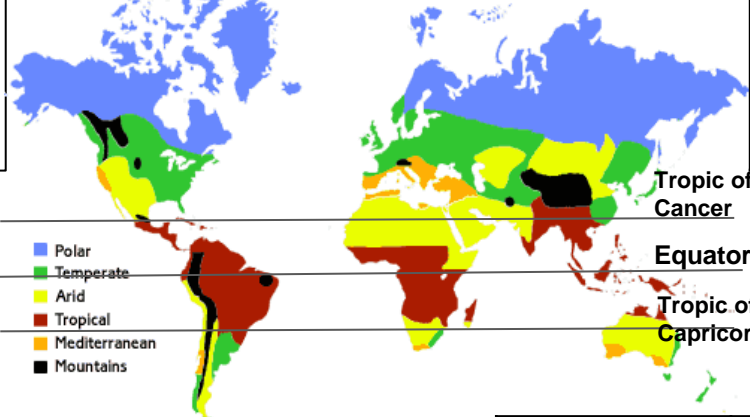
2. The Nutrient Cycle



Nutrients are needed to make every living thing (Biomass) grow and survive.
Nutrients move within a closed cycle between 3 nutrient stores.
Biomass - All living things (Plants and animals)
Litter - Dead things E.g. Fallen leaves
Soil - Top soil where vegetation grows

3. Global Climates

Climate = Temperature and precipitation rate of an area, over a 30 year period.
This is dependant on distance from the equator. This is because the equator receives the most focused amount of the sun's energy. When we move further north or south from the equator this energy is spread over a larger area due to the earth being round, and so is less focused, weaker, and leads to colder climates.



5. Fauna Adaptations to the desert climate

Fauna Adaptations

Giraffe:

Long neck
Thick lips and tongue

Sleeps only 30min a day

Gazelle

Conserves water by concentrating urine
Travels up to 60km/hr

Why?

Giraffe:

Reach food in high places
To protect it against thorns on flora
Protection from predators

Gazelle:

Lack of water, particularly in dry season
Evade predators



4. Flora adaptations to the desert Climate

Flora = Plant life **Fauna** = Animal life



Athel Tree



Flora Adaptation

Deep roots

Thorns

Small leaves

Allelopathy (Umbrella Thorn Acacia) or Salt (Athel Tree)

Why?

To get water from deep underground

To protect from being eaten by animals

To retain moisture and not lose it through transpiration

Released into to the soil around the main plant to stop competition from its own seeds, or other flora

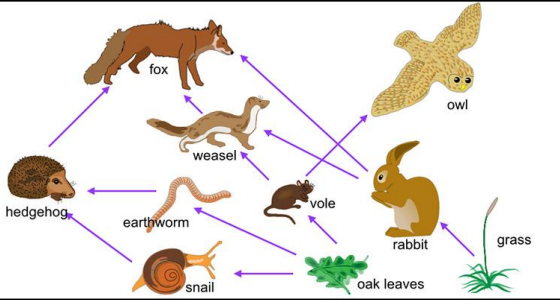
6. Interdependence

Most parts of an ecosystem rely on other parts to sustain themselves.

E.g Flora rely on Bees for pollination. An example in the desert is the Umbrella Thorn Acacia pollinating with other Acacia, by attaching pollen to the giraffe as it eats the tree, and then taking this pollen to another tree to pollinate it.

Year 8 Geography QUIZ YOURSELF
Global Ecosystems

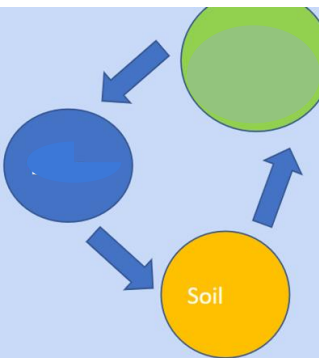
1. Food chains & Food webs



- 1) What does the direction of arrow show? _____
- 2) In this food web, name the:
Producers _____
Primary Consumers _____
Secondary Consumers _____
What is a decomposer? _____
 1) Give an example of a decomposer _____
 2) Define Herbivore _____
 3) Define Carnivore _____
 4) Define Omnivore _____

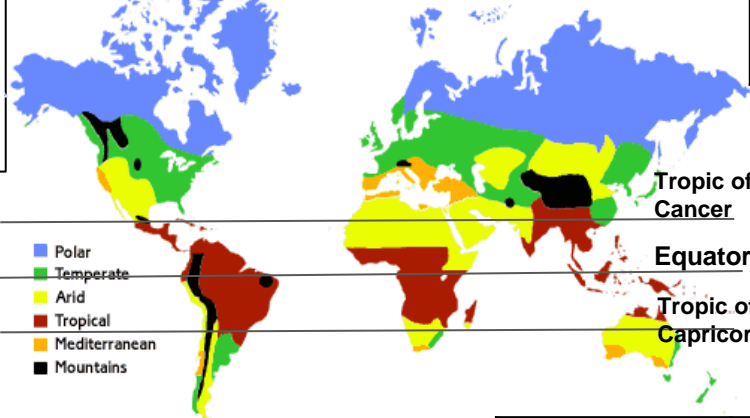
2. The Nutrient Cycle

- 1) Why do living organisms need nutrients? _____
- 2) Label the 2 other nutrient stores on the diagram, and define below: _____
- 3) Label how nutrients move from one store to another _____



3. Global Climates

- 1) Define Climate = _____ and _____ rate of an area, over a _____ year period.
- 2) The climate of an area is dependant on distance from _____. This is because the _____ receives the most focused amount of _____. When we move further _____ or _____ from the _____ this energy is spread over a larger area due to the earth being round, and so is less focused, weaker, and leads to _____ climates.



4. Flora adaptations to the desert Climate

Flora = _____ life Fauna = _____ life



Name 3 Flora Adaptation

- 1) _____
- 2) _____
- 3) _____
- 4) _____

5. Fauna Adaptations to the desert climate

Name 3 Fauna Adaptations

- 1) _____
- 2) _____
- 3) _____

What is the purpose of this adaptation?



What is the purpose of this adaptation?

6. Interdependence

Most parts of an ecosystem rely on other parts to sustain themselves.

- 1) Give an example of interdependence in an ecosystem _____

7. Where is Sudan

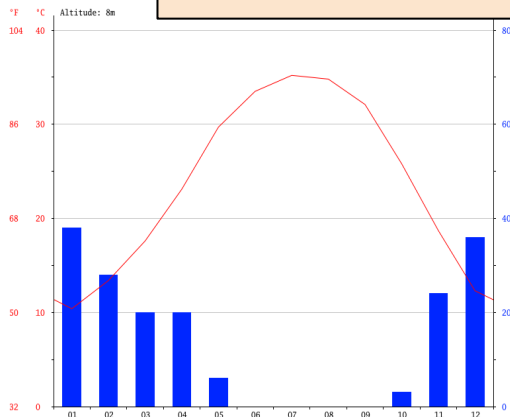


Fact File:
Continent: Africa (East)
Neighbouring countries: South Sudan, Ethiopia, Egypt, Chad
Capital: Khartoum
Climate: Arid/ Semi-Arid
Bodies of water: Red Sea, River Nile
 Part of The Sahel region

Arid = Dry climate, without enough precipitation to support vegetation

8. Climate

Bars = Precipitation (mm)
Lines = Temperature (°C)



9. Desertification

The process by which land becomes **drier and degraded** as a result of climate change, human activity or both



Causes:

Vegetation needs to grow in soil, so its roots can bind the soil and hold it in place. If the vegetation does not bind the soil it is vulnerable to soil erosion.

This can happen in 3 way

Over cultivation - when farmers do not give time for nutrients to return to the soil (think nutrient cycle) and so the soil becomes infertile. Vegetation can no longer grow in it, leading to no roots to bind the soil

Overgrazing - When nomads and farmers have to graze their cattle and goats on a smaller area of land, they eat all the young vegetation. This will leave no vegetation to bind the soil.

Population rise & deforestation -

An increased population will lead to more pressure on resources such as water, fertile soil, and trees that may be cut down for building or firewood. This loss of trees will lead to less binding of soil with their roots

Impact:

Dry or degraded soil can be blown, or washed away. This is called **soil erosion**. If good soil does not exist, vegetation can not grow. This includes crops which farmers grow for food.

This can lead to:

- Conflict over resources
- Higher food prices
- Habitat destruction
- Migration (people moving away)
- Famine



Management strategies: “Methods to help control a situation”
 2 methods to deal with desertification in Sudan

1) Use of appropriate technology

Cheap, sustainable and easily available materials to tackle desertification, while having a low impact on people’s lives
 E.g. - More efficient stoves, that use less firewood, such as Toyola Cooking Stoves, or Solar Stoves, so less trees are deforested

Benefits: Low cost, could provide jobs in making and selling,
Costs: Can be expensive compared with traditional methods of cooking, may not be available everywhere

Other example of appropriate technology

- Small rock walls to stop soil being washed or blown away and so reduce soil erosion

2) Afforestation - “ the planting of trees”

E.g. The Great Green Wall -

Benefits: Roots will bind soil and reduce soil erosion, leaf litter adds nutrients to soil, creates habitats

Costs: Trees may die quickly in hot climate, trees can take 30+ years to grow



7. Where is Sudan



Describe the location of Sudan

Continent: _____

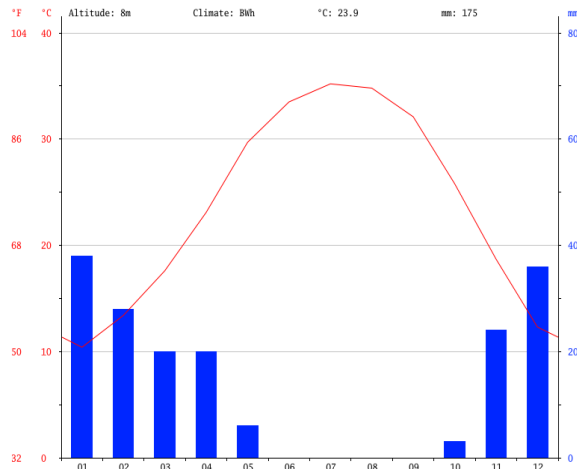
Neighbouring countries: _____

Capital: _____

Climate: _____

Bodies of water: _____

8. Climate



State the:
 Wettest month
 Driest month
 Coldest month
 Warmest month
 What is the range in temperature

9. Desertification

Define Arid:

Define desertification: The process by which land becomes _____ as a result of climate change, _____ or both.

Causes:

Vegetation needs to grow in soil, so its roots can _____. If the vegetation does not bind the soil it is vulnerable to _____

This can happen in 3 way

1) Explain Over cultivation - when farmers do not _____ and so the soil becomes _____. Vegetation can no longer grow in it, leading to no roots to bind the soil

2) Explain overgrazing -

3) How can deforestation cause desertification?

Impact:

Dry or degraded soil can be blown, or washed away. This is called _____

If good soil does not exist, vegetation can not _____

This includes crops which farmers grow for food.

1) State 4 impacts of desertification

- _____
- _____
- _____
- _____

Define Management strategies:

2 methods to deal with desertification in Sudan

1) State an appropriate technology used to tackle desertification

2) State 2 Benefits: ,

3) State 2 costs:

Other example of appropriate technology

- Small rock walls to stop soil being washed or blown away and so reduce erosion

Explain how Afforestation can tackle desertification

1. The Census and the population of the United Kingdom

The Census is a national survey of all households.

It collects information on:

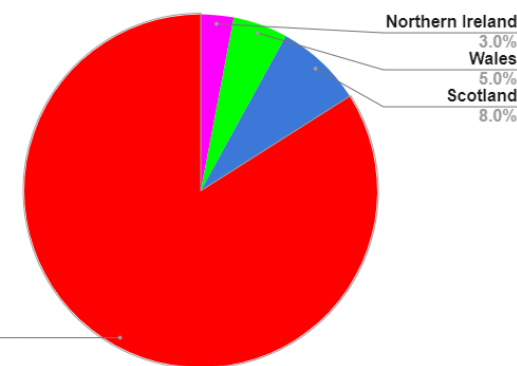
- Population
- Age
- Education
- Household income

It supports planners in decision making around:

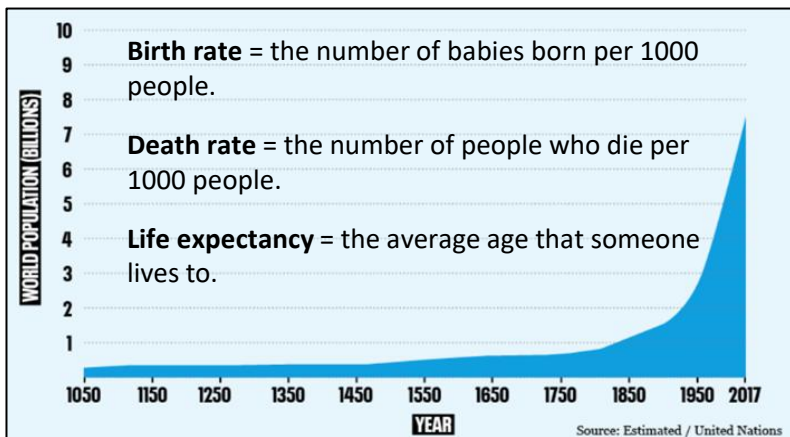
- Where to build schools, hospitals and libraries,
- Which parts of the country need roads and rail,



UK nations and population amounts



2. World Population Growth



World **population** (the number of people) has increased rapidly in the last 200 years.

Reasons:

- **Reduced infant mortality**
= fewer children dying before they are 5.
- **Improved healthcare and medicines.**
- **Improved standard of living**
= better housing and food & water supplies.



3. Population Pyramids

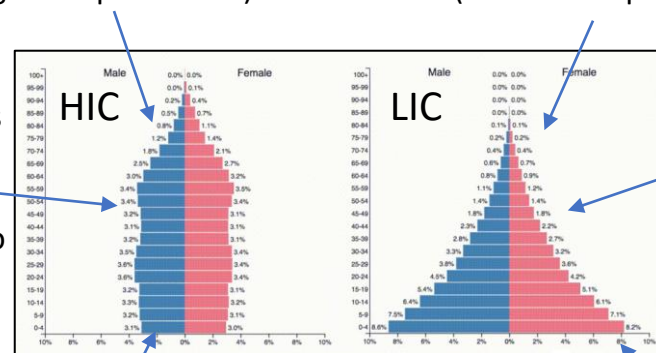
Population pyramids show information about a country's population. Their shape tells us about that country's birth rate, death rate, and life expectancy.

Wider top
= Ageing population
(long life expectancies)

Narrow top
= Youthful population
(short life expectancies)

Straight sides
= Low death rate (most people live to old age)

Steeply sloping sides
= High death rate (many people die young)



Narrow base = Low birth rate

Wide base = High birth rate

Urban = a built up, densely populated area (e.g. a city)



Rural = an area that is not built up, so is sparsely populated (e.g. the countryside)



Migration = the permanent movement of People to another place.





Push factor = something that makes you want to leave the area.



Pull Factor = something that makes you want to move to the area.



4. Migration: Push and Pull Factors

	Push Factors	Pull Factors
Rural 	Lack of facilities Isolation Lack of jobs	Quiet Larger gardens Cheaper housing
Urban 	Congestion Crowded space Expensive housing	More services Entertainment Job opportunities

National migration = people moving within a country.

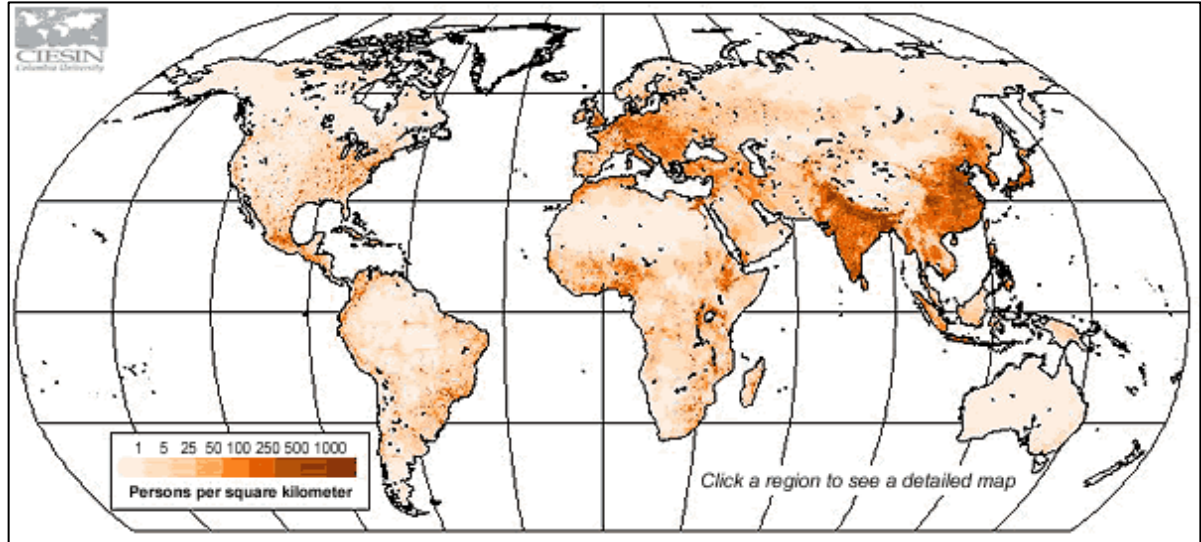


International migration = people moving between countries.



5. Global Population Distribution




Distribution = where things are.



Sparsely Populated = not many people living there. People are spread out.






Reasons:

- **Mountainous** areas are hard to build on and difficult to travel through. 
- **Harsh environments** = difficult areas to live, e.g. deserts with little water. 
- **Landlocked** = not by the sea, so it's harder to trade (buy and sell things). 

Densely populated = lots of people living there. People live close together.

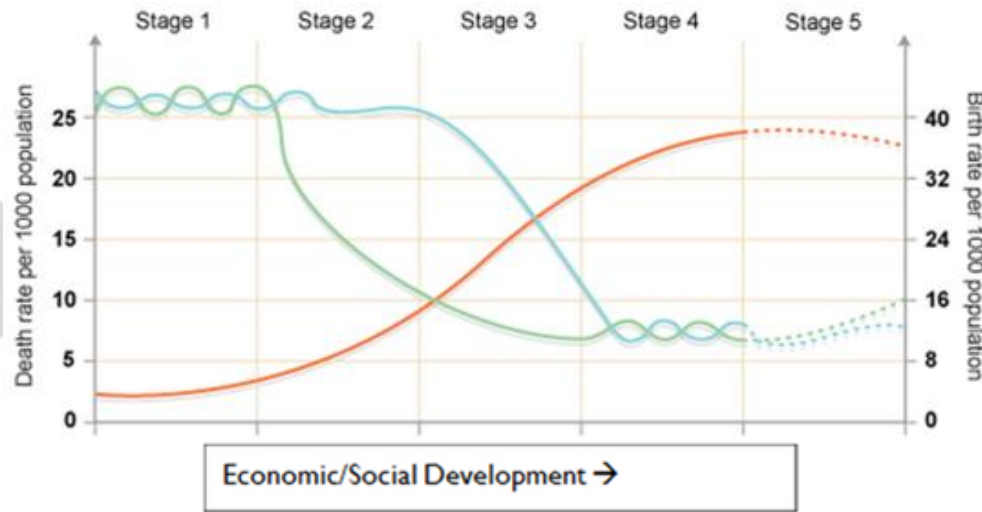


Reasons:

- **Flat land near a river** is good for building on and gives a water source and way to trade. 
- **Fertile soil** = soil that is good for growing crops. 
- **Coastal** = by the sea, which allows easy trade by ship and food sources (fish). 


6. The Demographic Transition Model (DTM)


The DTM is a graph which shows how a country's birth rate, death rate, and total population change over time as it develops.



	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
Birth rate	High	High	Falling	Low	Low
Death rate	High	Falling	Falling	Low	Increasing
Total population	Low	Increasing	Increasing	High	Falling
Development	Remote tribes	LIC	NEE	HIC	Ageing HIC

7. Ageing and Youthful Populations

Ageing population = large percentage of older people in the population. 

Youthful population = a large percentage of younger people in the population. 

Dependent population = one with high costs, e.g. ageing or youthful populations.

	Ageing (Japan)	Youthful (Mexico)
Causes	<ul style="list-style-type: none"> • Low birth rates due to women choosing careers and having children later. • Long life expectancy due to improved medicine and housing. 	<ul style="list-style-type: none"> • High birth rate due to young people having many children without cheap contraception. • Short life expectancy due to poor health care facilities and housing.
Impacts	<ul style="list-style-type: none"> • Strain (pressure) on the healthcare system and high costs. 	<ul style="list-style-type: none"> • Strain (pressure) on schooling and high costs.
Costs	<ul style="list-style-type: none"> • Increased demand for housing and jobs. 	<ul style="list-style-type: none"> • Racial tension between migrants and locals.

Impacts of International Migration for the UK:

Benefits

- More workers, so UK businesses can expand.
- Cultural advantages for the UK, e.g. new restaurants.

Costs

- Increased demand for housing and jobs.
- Racial tension between migrants and locals.

8. Population control

To manage the population numbers in a country, so that it can function properly, and there are enough resources that everyone can live comfortably.

Country	Population control method
China - Decrease pop.	One Child Policy ran from 1980 - 2015.
Denmark - Increase	Do it for Denmark adverts
Scandinavia & France - Increase	Very good maternity pay
Singapore - Decrease	Stop at two campaign - propoganda

9. Causes and Impacts of Voluntary and forced migration

	Causes	Impacts
Voluntary Migration	Search for better jobs, better services	Larger skilled workforce, cultural diversity, potential for strain on local services
Forced Migration	Fleeing discrimination or persecution due to religion, sexual orientation, gender or ethnicity Fleeing conflict or natural disaster	Increased cultural diversity (languages, food, music, etc) Increased pressure on public services or finances E.g food aid or management of a refugee camp

9. Types of migration

Migrant - Moving from one place to another for work or a better standard of living (this can be temporary)

Immigrant - A person who comes to live permanently in a foreign country

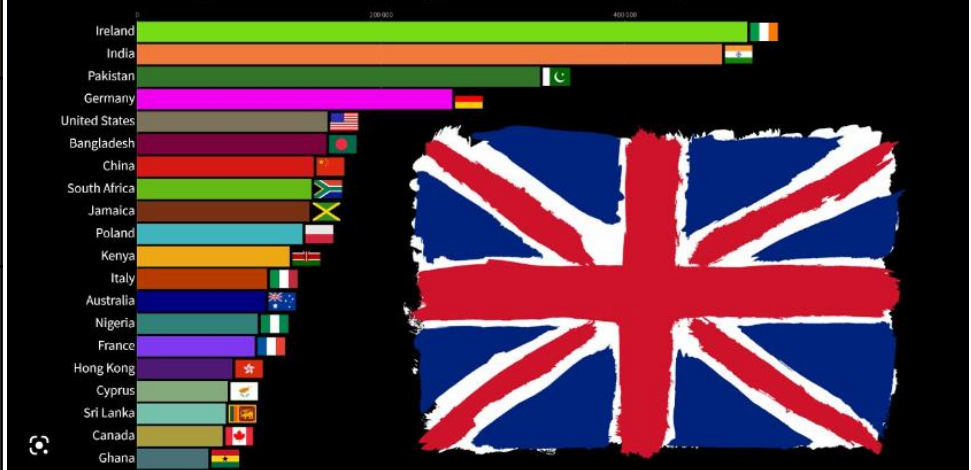
Refugee - A person seeking safety in another country, fleeing from persecution or conflict.

10. Migration in the UK

The population of the UK is made of migrants from all over the world. Because of this it is known as being diverse and multicultural.

Multicultural = A society that contains several cultural or ethnic groups

The Largest Immigrant Groups in The UK



How might populations change into the future?

As the world develops, the DTM predicts that population growth will slow due to increases in wealth, education and healthcare
The UN predicts that the world will never see its 12 Billionth child born.

Year 8 Geography QUIZ YOURSELF -- Population and Migration

The Census and the population of the United Kingdom

1) What does the Census collect information on?

- .
- .
- .

2) Recall 2 things that this information can support.

- .
- .

UK nations and population amounts

1) State the 4 nations of the United Kingdom

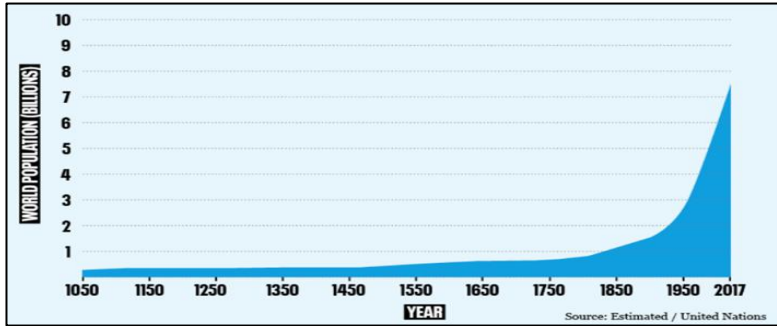
2) Which country has the highest population?

Birth rate = the number of _____ per 1000 people.

Death rate = the number of _____ per 1000 people.

Life expectancy = the average _____

2. World Population Growth



1) What has happened to global population over the last 200 years? _____

State 3 reasons for this:

- Reduced ...
- Improved...



3. Population Pyramids

Label what these parts of these pyramids represent

Wider top
= Ageing population
(long life expectancies)

Narrow top
=

Straight sides
=

Steeply sloping sides
=

Narrow base =

Wide base =

Define Urban =



Define Rural =



Define Migration =



Define Push factor =



Define Pull Factor =



Recall Push and Pull Factors for rural and urban areas

	Push Factors	Pull Factors
Rural		
Urban		

Define National migration =

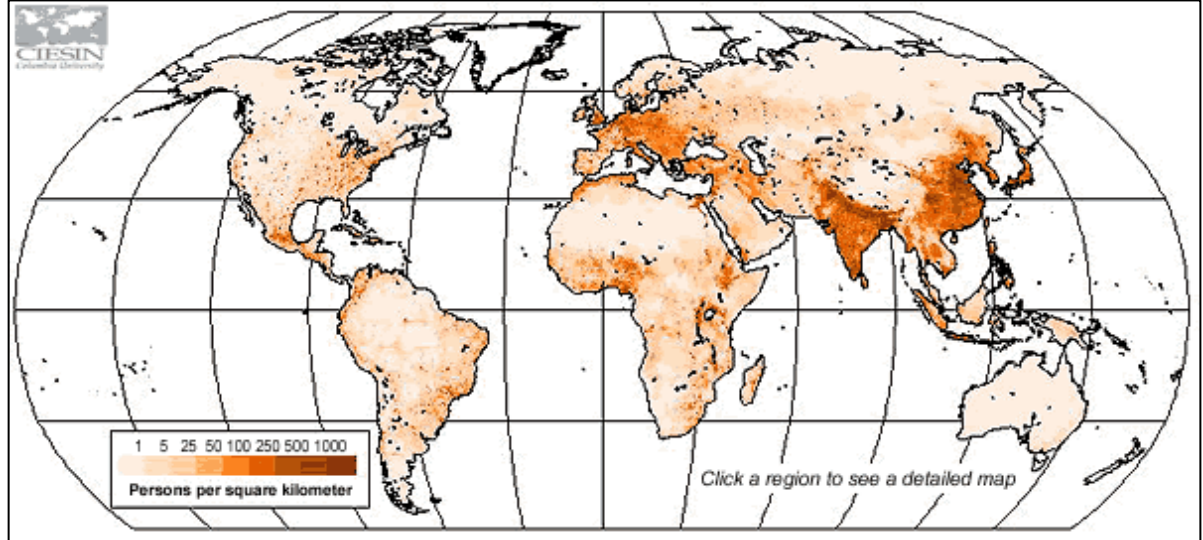


Define International migration =



5. Global Population Distribution

Distribution = where things are.



Define Sparsely Populated =



Give Reasons why the following will lead to sparsely populated areas:

● Mountainous



● Harsh environments =



● Landlocked



Define Densely populated =



Give Reasons why the following will lead to densely populated areas:

● Flat land near a river



● Fertile soil =

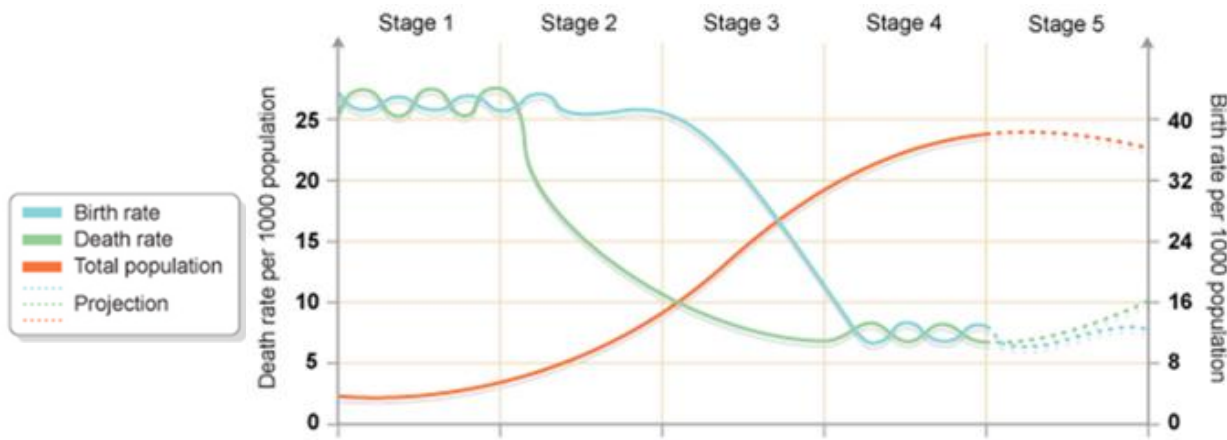


● Coastal =



6. The Demographic Transition Model (DTM)

1) What is the DTM?



2) Complete the following table with the Birth/Death and population levels at different stages of development.

	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
Birth rate	High	High	Falling	Low	Low
Death rate	High				
Total population	Low				
Development	Remote tribes				Ageing HIC

Economic/Social Development →

Complete 2 benefits of international migration to the UK

Complete 2 costs

7. Ageing and Youthful Populations

Define Ageing population =



Define Youthful population =



Define Dependent population =

1) Complete the causes and impacts of a youthful or aging population in the table

	Ageing (Japan)	Youthful (Mexico)
Causes		
Impacts		

8. Population control

To manage the _____ in a country, so that it can _____, and there are enough _____ that everyone can live comfortably.

1) Which countries did what as methods of population control?

Country	Population control method
China	
Denmark	
	Very good maternity pay
	National No Condom Day

What are the causes and impacts of Voluntary and forced migration

	Causes	Impacts
Voluntary Migration	Search for better jobs, better services	
Forced Migration		Increased cultural diversity (languages, food, music, etc)

9. Types of migration

Define Migrant -

Define Immigrant -

Define Refugee -

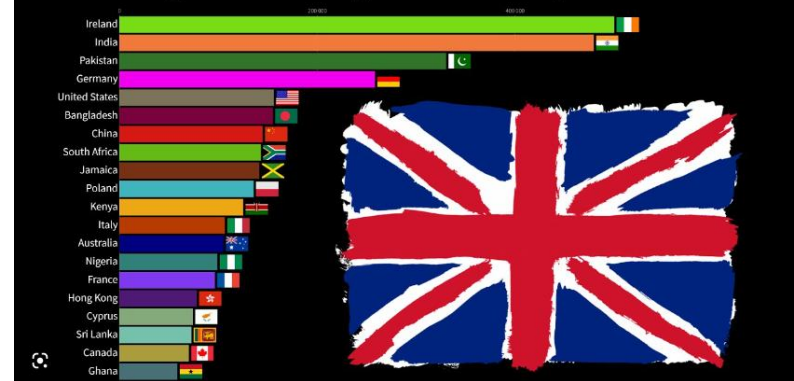
10. Migration in the UK

The population of the UK is made of _____

Because of this it is known as being _____ and multicultural.

Define Multicultural =

The Largest Immigrant Groups in The UK



How might populations change into the future?





As the world develops, the DTM predicts that population growth will _____ due to

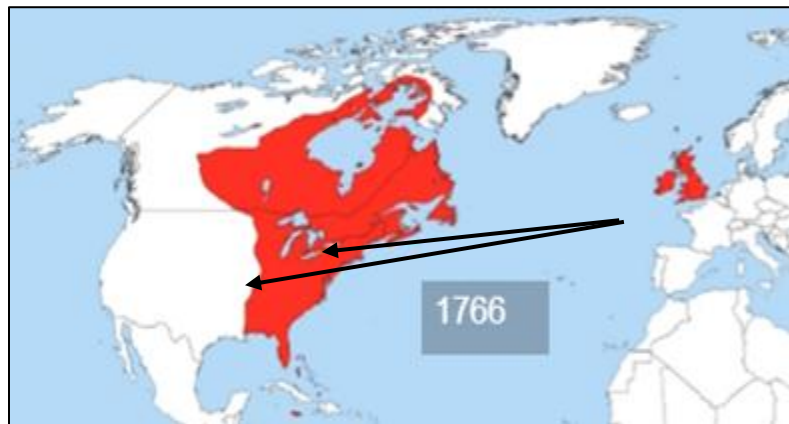
_____ and healthcare
The UN predicts that the world will never see its 12 Billionth child born.

British Empire in North America

Empire: colonisation: *to occupy, settle and rule*

Why did Britain develop an Empire?

Conflict	<ul style="list-style-type: none"> Strategy, occupy military advantageous places like the Caribbean Compete against other Empires like Spain and France 	
Economy	<ul style="list-style-type: none"> Cotton, pepper, silk, dyes, spices, tea, gold, tobacco Trading routes across the world 	
Society	<ul style="list-style-type: none"> 'Civilising' mission to make other people like White Britons 	
Religion	<ul style="list-style-type: none"> 'Civilising' mission to make people worship God in the right way 	

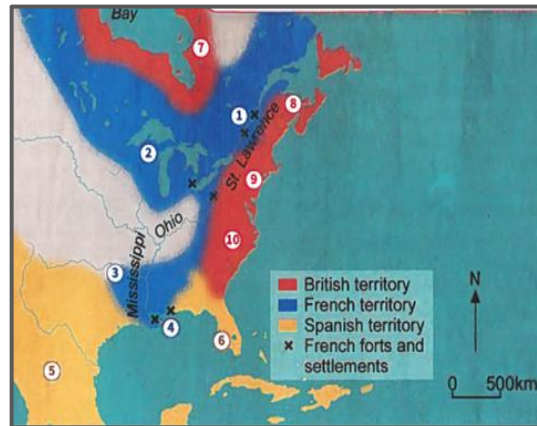


Why did people leave Britain?

- Religious freedom:** such as Quakers, Puritans and Catholics were persecuted in Britain
- New Start/ Fresh opportunity** - settlers could start a new life as farmers
- Poor social conditions:** starvation, overpopulation, poorly paid work in Britain
- Punishment** - the colonies became a place to transport criminals out of Britain

Relationships with Native Americans

- **Economic** -
 - Trade opportunities, positive
 - Mayflower/Puritans in 1620, worked with Tisquantum to survive
- **Conflictual** - war over land
 - John Smith : 'We now have just means to destroy them by any means'
 - Opechancanough's attacks on the British
- **Social** - smallpox wiped out Indian communities, forced many communities to adapt to farming
 - Algonquian people 70% wiped out by disease
- **Social** - cultural transference between Indians and White people
 - Metacombet was killed by Indians who also converted to English dress, culture and religion after he fought the English



French Indian War 1754-63

Causes:

- French and British competing for fur trading in the Continent
- British colonists asked Britain for support against French attacks
- France built Fort Duquesne which threatened the British
- France invaded George Washington's own Fort

Events

- France winning: committed the 1757 massacre at Fort William Henry
- William Pitt reorganised the British military with more troops and money
- General Wolfe's military tactics managed to defeat the French at Quebec





Consequences

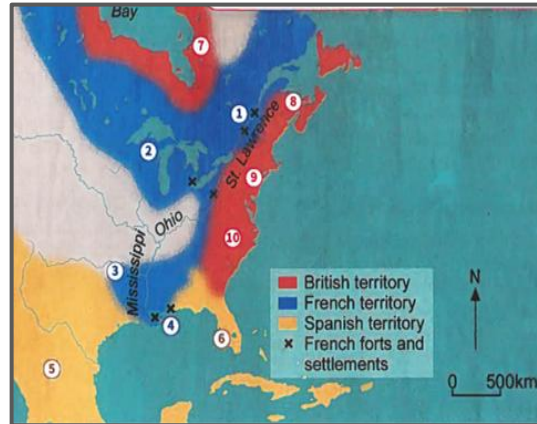
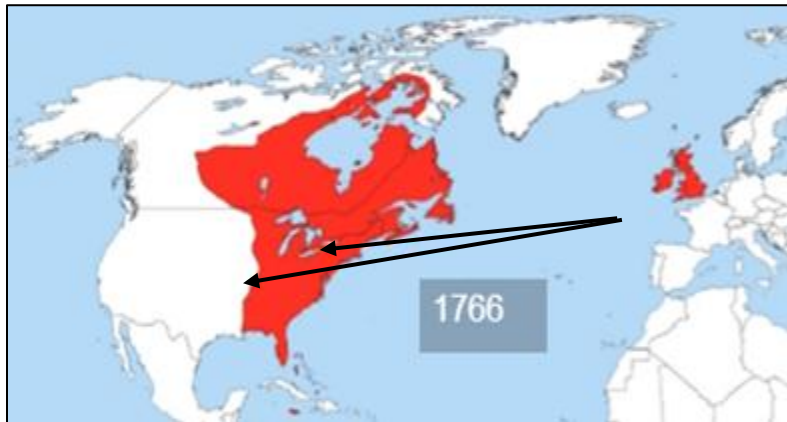
- Treaty of Paris: France gave up all North American land.
- British Empire in massive debt
- British colonists suffered massive casualties
- Royal Proclamation of 1763 stopped settlement beyond Appalachians
- New taxes for the British colonists

British Empire in North America

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Why did Britain develop an Empire?

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French War 1754-63

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- France built Fort _____ which threatened the British
- _____ invaded George Washington's own Fort

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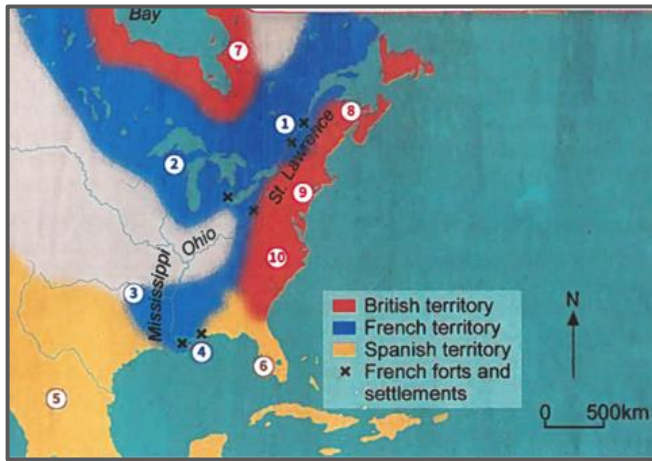
Consequences

- _____: France gave up all North American land.
- British Empire in massive _____
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Why did people leave Britain?

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2. **New Start/ Fresh opportunity** - settlers could start a new life as _____
3. **Poor _____ conditions**: starvation, _____, poorly paid work in Britain
4. _____ - the colonies became a place to transport criminals out of Britain

British Empire in North America



Pontiac's Rebellion 1763-66

- 1. 400 Native Americans set up alliances and attacked British forts in Ohio, killing 2000 colonists
- 1. British unleash Germ Warfare in June 1763 forcing the Indians to sign a Peace Treaty
- 1. Britain renewed trade and negotiations with the Indians and agreed the Proclamation of 1763
- 1. The Colonists were angry Britain was defending the Indians
- 1. The Paxton Boys murdered 6 Indians after they attacked some frontier settlers
- 1. Indians (140) fled to the authorities in 1764 for protection
- 1. The Paxton Boys met at Germantown and agreed a peace treaty, where they were forgiven and offered protection from Indians on the Frontier



The event was **significant** because:

- The colonists and Indians tensions increased
- The government of Pennsylvania looked weak
- Led to the Frontier Settlers (colonists) doing what they wanted

Causes of the War of American Independence

Economic (tax, money)

- Stamp Act of 1765
- No Taxation Without Representation
- Townshend Duties 1767 - glass, paint, paper, cards, lead, tea

Social (freedom, liberty)

- Enlightenment : reason over dogma, democracy and liberal values

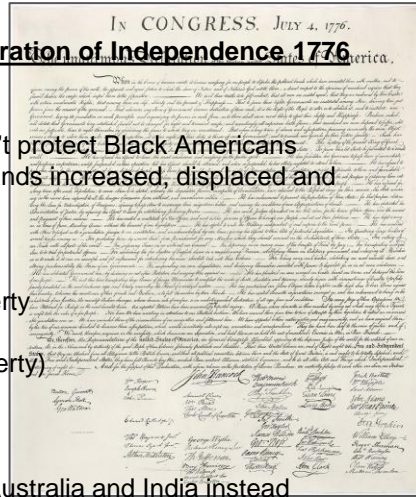
Conflict (War, violence)

- Seven Years War caused massive debt (\$132m) which Britain charged the colonists
- Boston Massacre - brutal repression of colonists March 1770
- Boston Tea Party - colonists pour expensive tea into harbour, led to martial law and control of Boston's harbour, town meetings also banned

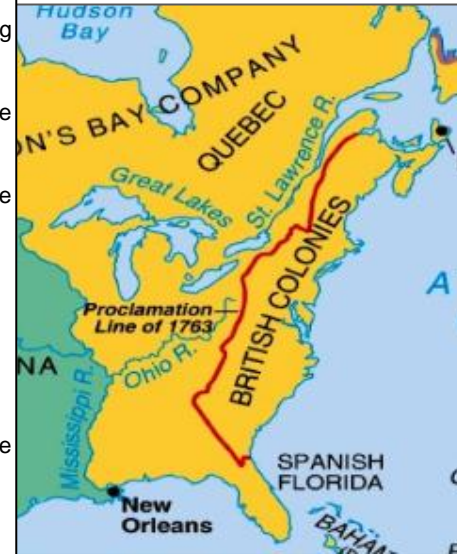
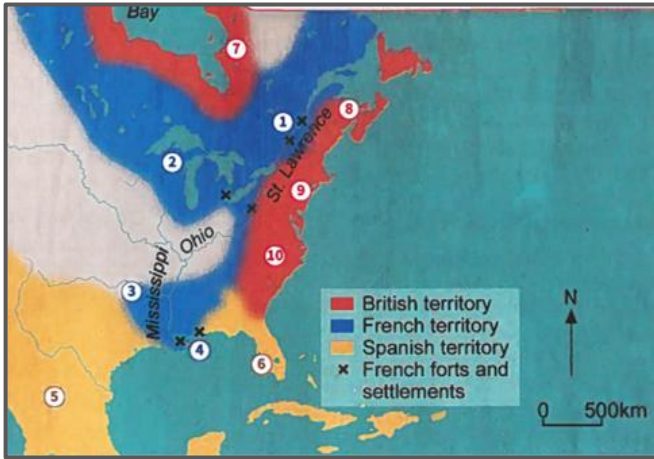


Consequences: American Declaration of Independence 1776

- **Social**
 - Slavery increased as the DoI didn't protect Black Americans
 - Expansion into American Indian lands increased, displaced and killed thousands
- **Political**
 - Guaranteed some men with property
 - No women could vote
 - 20% of men could vote (with property)
 - Immigration increased
- **Conflict**
 - Britain focussed their Empire on Australia and India instead



British Empire in North America



Rebellion 1763-66

1. 400 Native Americans set up alliances and attacked British forts in Ohio, killing _____ colonists
1. British unleash _____ Warfare in June 1763 forcing the Indigenous to sign a Peace Treaty
1. Britain renewed trade and negotiations with the Indians and agreed the _____ of 1763
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Causes of the War of American Independence



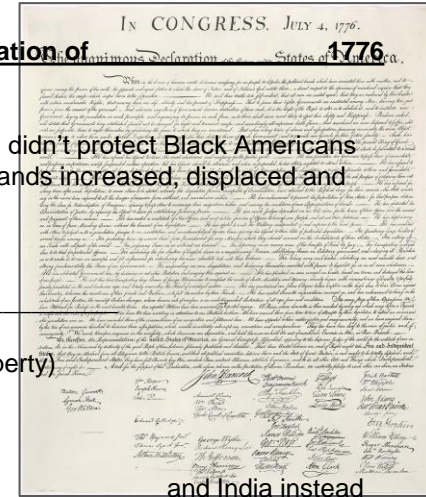
_____ (tax, money)

- Stamp Act of 1765
- No Taxation Without _____
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Consequences: American Declaration of _____ 1776

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Social (freedom, liberty)

- _____: reason over dogma, _____ and liberal values



Conflict (War, violence)






- _____ caused massive debt (\$132m) which Britain charged the colonists
- Boston _____ - brutal repression of colonists March 1770
- Boston Tea Party - colonists pour expensive tea into harbour, led to martial law and control of Boston's _____, town meetings also banned



French Revolution Timeline

- **June, 1789:** Third Estate declares itself the National Assembly
- **July 14, 1789:** A mob in Paris storms the Bastille and steals weapons
- **August, 1789:** National Assembly writes the Declaration of the Rights of Man and Citizen
- **1791:** France adopts a Constitution, National Assembly becomes the Legislative Assembly
- **April, 1792:** France declares war on Austria and Prussia
- **September, 1792:** The Legislative Assembly becomes the Convention, writes a new Constitution, and abolishes the monarchy
- **January 1793:** Louis XVI executed
- **April, 1793:** The leader of the Jacobins, Robespierre, becomes the leader and begins the Reign of Terror. Nearly 40,000 Frenchmen are executed
- **August, 1795:** France makes a new Constitution, the Directory is the new gov't of France

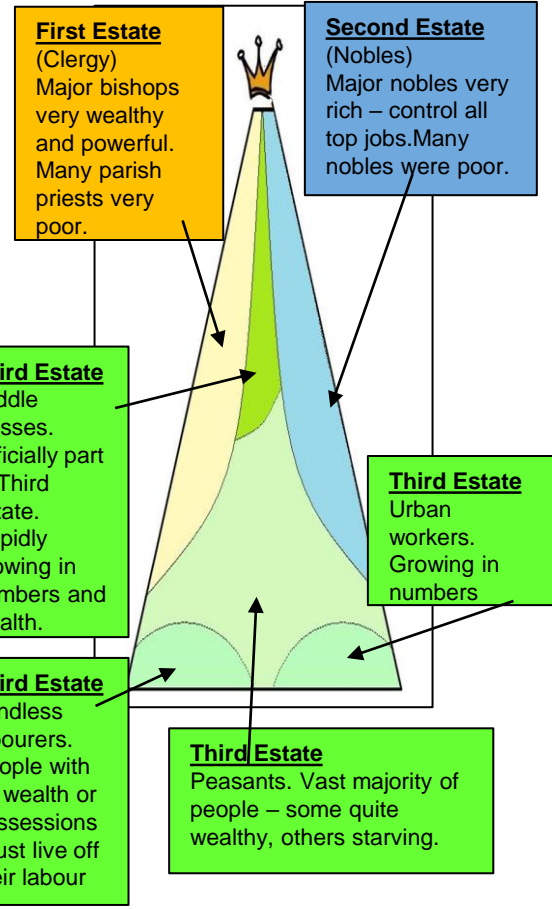
Causes of French Revolution

Power	Old <i>ancien</i> system of Estates was unfair: 1st and 2nd Estate have same number of votes as 97% of the population in the Third Estate.	
Conflict	Seven Years War against Britain put France in debt. Peasants are taxed more than nobles and Church.	
Economic	Poverty - the people are starving as poor harvests mean starvation. Peasants spend 88% of their wages on bread.	
Social	Age of Enlightenment led to new ideas about freedom and democracy, challenging the Church and King. France took inspiration from the American Revolution of 1775	
Power	Poor Kingship - Louis XVI was unwise, lazy, ignorant and unproactive	

King
Claims great power, but finds it hard to enforce his wishes.

VOCABULARY

Riot	A violent disturbance of the peace by a crowd.
Reaction	Something done in response to a situation or event.
Rebellion	An act of armed resistance to authority
Revolution	A forcible overthrow of a government or social order, in favour of a new system.
Revolutionary Groups	<i>Jacobins, Girondins, San Cullottes</i>
Military Dictatorship	Military commands the country
Constitutional Monarchy	King has some powers, but mainly ruled by a Parliament or National Assembly
Republic	No monarch - ruled by a President under a democracy
Fraternity	Group/ community with common interests
Equality	Fair representation and rights amongst all







French Revolution Timeline

- **June, 1789:**

- _____: A mob in Paris storms the Bastille and steals weapons
- **August, 1789:** National Assembly writes the _____
- _____ France adopts a Constitution, National Assembly becomes the Legislative Assembly
- **April, 1792:**

- _____: The Legislative Assembly becomes the Convention, writes a new Constitution, and abolishes the monarchy
- **January 1793:**

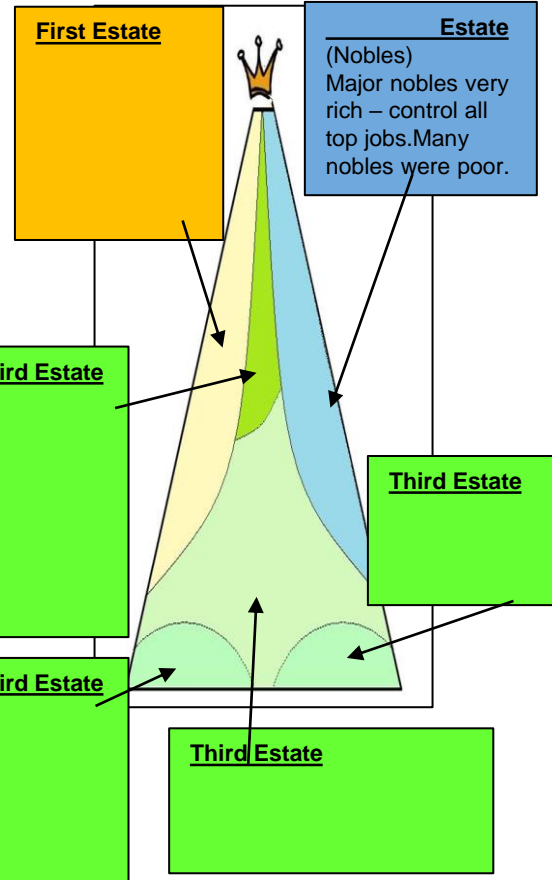
- _____ The leader of the Jacobins, Robespierre, becomes the leader and begins the Reign of Terror. Nearly 40,000 Frenchmen are executed
- **August, 1795:**

Causes of French Revolution	
	<p>Old <i>ancien</i> system of Estates was unfair: 1st and 2nd Estate have same number of votes as 97% of the population in the Third Estate.</p> 
	<p>_____ against Britain put France in debt. Peasants are taxed more than nobles and Church.</p> 
Economic	
	<p>Age of Enlightenment led to new ideas about freedom and democracy, challenging the Church and King. France took inspiration from the American Revolution of 1775</p> 
Power	<p>_____ - Louis XVI was unwise, lazy, ignorant and unproactive</p> 

VOCABULARY

	<p>A violent disturbance of the peace by a crowd.</p> <p>Something done in response to a situation or event.</p> <p>An act of armed resistance to authority</p> <p>A forcible overthrow of a government or social order, in favour of a new system.</p> <p><i>Jacobins, Girondins, San Cullottes</i></p> <p>Military commands the country</p> <p>King has some powers, but mainly ruled by a Parliament or National Assembly</p> <p>No monarch - ruled by a President under a democracy</p> <p>Group/ community with common interests</p> <p>Fair representation and rights amongst all</p>
--	---

King



Vocabulary

Interpretations
Opinions of evidence

Manufacturing
Turning raw resources into products

Industrial Revolution
Britain's age of mass production and social change 1750-1900

Infrastructure
Systems of the country e.g. hospitals, roads

Mughal
An Empire of the 1500s from Persia

Welfare
Standard and quality of life

Garrisons
Military bases

Tax
Money paid by businesses and individuals to the government

Puppet Ruler
Pretend ruler, no real authority

Governor General
In charge of British rule in India

Interpretations of Empire

Why is the Empire important to study?
1. It can be controversial / provocative
2. Covers lots of different people's experiences
3. Covers lots of different places
4. Covers lots of different time periods

Why do historians' interpretations differ?

Historians' interpretations differ because:
A) They use different sources
B) They focus on different areas, e.g. people, time, themes



Thraroor: "Empire made India a third-world country"

Ferguson: "British Empire enhanced global welfare"

Why is India remembered as a place of economic exploitation?



- 1. Stealing natural resources from India, **manufacturing** them in Britain (**Industrial Revolution**), and selling them back to India and the colonies
 - a. India had to buy from British businesses
- 1. Selling stolen products to consumers in Britain for high profits. The Tea trade was worth £30m a year by 1850.
- 1. The British **taxed** Indians, profits which were then used to buy Indian products to be sold back to India. Overall Britain stole \$45 trillion during their rule
- 1. Britain built the infrastructure of India (e.g. farming, telegraphs, schools and hospitals) to benefit British rule

India before the British Empire

India was ruled by the **Mughal Empire** in the 1500s.

- India was rich in **natural resources** like cotton, silk, and spices.
- Culture flourished with science, technology and art.
- In 1600 Britain was producing 2% of the world's goods, but India was producing 25%

The East India Trade Company (EITC)

- Was a huge company that profited from the trade of natural resources in the colonies
- Acted as a powerful ruler on behalf of the British government, and had a private army of 160'000 soldiers. They set up **garrisons**, factories, and warehouses in Surat (1612), Madras in (1638) and Bombay in (1668)



Why is India remembered as a place of conflict?

Empire Builders:

1. **Robert Clive (East India Trade Company, Military Commander in Chief)**
 - a. Formed an alliance with Mir Jafar to defeat the Nawab at the Battle of Plassey 1757
 - b. The Second Puppet ruler (Mir Qasim) was overthrown as he didn't do what the British wanted
2. **Wellesley (Governor General)**
 - a. Defeated the Mysore and Marathas in battle
 - b. Made military deals: traded titles with Indian princes in exchange for setting up garrisons of British troops and collecting tax
3. **James Ramsey (Governor General)**
 - a. Doctrine of Lapse = British inheriting lands if there is no Indian heir
 - b. Wars against the Sikhs in the Punjab



Interpretations of Empire

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Vocabulary

Interpretations

Turning raw resources into products

Industrial Revolution

Infrastructure

Systems of the country e.g. hospitals, roads

An Empire of the 1500s from Persia

Standard and quality of life

Garrisons

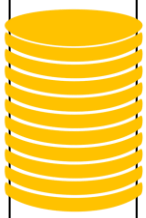
Money paid by businesses and individuals to the government

Puppet Ruler

Governor General

Why is India remembered as a place of _____ exploitation?

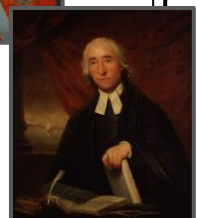
1. Stealing ...
1. Selling ...
1. The British **taxed**
1. Britain built the infrastructure of India (e.g.



Why is India remembered as a place of conflict?

Empire Builders:

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India before the British Empire

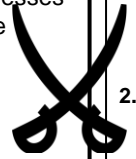
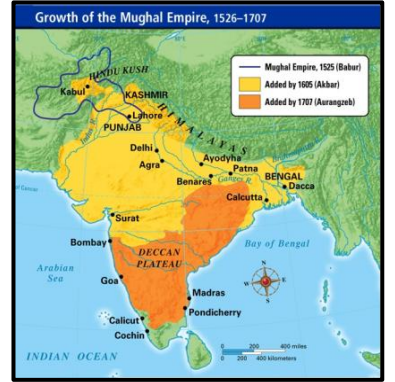
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Why is India remembered as a place of resistance?

	Causes of 1857 Mutiny	Events of 1857 Mutiny	Consequences of 1857 Mutiny
Violent 	<p>Long term: Economic exploitation , land changing ownership to Britain, cultural imperialism (controlling views on education and religion), control of the law</p> <p>Short Term:</p> <p>1857 all soldiers were given rifles greased with pig and beef fat - offending Hindus and Muslims</p>	<p>85 Sepoys refused to fight with rifles and were jailed for 10 years</p> <p>Conflict was bloody - rioters rose up In North India (Delhi, Cawnpore and Lucknow), lasting 18 months</p> <p>Britain eventually won the rebellion by using loyal Sepoy soldiers</p>	<ul style="list-style-type: none"> • Britain took over from the East India Trade Company. India was now controlled by the Raj (office of Indian affairs). • Britain interfered less with education and religion, giving Indians more say in local government. <p>By 1900 only 1 in 10 government jobs belonged to Indians. Sikhs were banned from lots of jobs.</p>




India as a place of social divide and transference




On Britain	On India
<ul style="list-style-type: none"> • British officers ate local food and dressed in local fashion, married Indian women • Britain became wealthy: ¼ of all exports were sent to India • Britain became wealthy: had the right to collect taxes • Britain had large numbers of Indian soldiers (sepoys): 1.5 million fought in WWI for Britain 	<ul style="list-style-type: none"> • Indians were divided by the caste system • English becomes the language of government • English architecture and schools introduced • English sports like cricket introduced • Indian businesses taxed higher rates • Cash crops - cotton and tea replaces local food • No right to vote



Peaceful	Indian National 1885 Congress	Partition of Bengal	Delhi Durbar
	<ul style="list-style-type: none"> • Targeted upper and middle class Indians • Asked for political participation <p>Muslim League 1906</p> <ul style="list-style-type: none"> • Thought Congress (government) was made up of too many Hindus 	<ul style="list-style-type: none"> • 1906 Local elections won giving locals some representation • Lord Curzon wanted Bengal to be split to divide resistance • Protest movement called Swadeshi rose up in protest • Hindus boycotted British goods • Muslims supported partition because they would be better represented 	<ul style="list-style-type: none"> • 1911 • Celebrating loyalty to the British Empire • Partition of Bengal undone by George V, disappointing Muslims but making Hindus happy

Why is India remembered as a place of resistance?

	Causes of 1857 Mutiny	Events of 1857 Mutiny	Consequences of 1857 Mutiny
	<p>_____ term: Economic exploitation, land changing ownership to Britain, cultural _____ (controlling views on education and religion), control of the law</p> <p>Short Term:</p> <p>1857 all soldiers were given _____ greased with pig and _____ fat - offending Hindus and _____</p>	<p>85 _____ refused to fight with rifles and were jailed for 10 years</p> <p>Conflict was _____ - rioters rose up in North India (_____, Cawnpore and Lucknow), lasting 18 months</p> <p>Britain eventually won the _____ by using loyal Sepoy soldiers</p>	<ul style="list-style-type: none"> • Britain took over from the East India Trade _____. India was now controlled by the _____ (office of Indian affairs). • Britain interfered less with _____ and religion, giving Indians more say in local government. <p>By ___ only 1 in 10 government jobs belonged to Indians. _____ were banned from lots of jobs.</p>




India as a place of social divide and transference



On Britain	On India
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	<p>Indian _____ 1885 Congress</p> <ul style="list-style-type: none"> • Targeted upper and _____ Indians • Asked for political participation <p>Muslim _____ 1906</p> <ul style="list-style-type: none"> • Thought Congress (government) was made up of too many _____ 	<p>Partition of _____</p> <ul style="list-style-type: none"> • 1906 Local elections won giving locals some _____ • Lord _____ wanted Bengal to be split to divide resistance • Protest movement called _____ rose up in protest • Hindus _____ British goods • Muslims supported partition because they would be better _____ 	<p>Delhi Durbar</p> <ul style="list-style-type: none"> • 1911 • Celebrating loyalty to the British Empire • Partition of Bengal _____ by George V, disappointing Muslims but making _____ happy
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The Slave Trade

Britain became the leading nation in the so-called **triangular trade**.

- By 1760, 42,000 Africans were carried by British ships every year.



African kingdoms such as **Dahomey** took other Africans as slaves after a battle. African kingdoms were rich and successful: the King of Mali was once the richest man in the world. Around **90%** of transported slaves were captured by African communities. Around **15-30%** of slaves died being marched to the coast.

British **merchants** exchanged goods such as guns and cloth for **enslaved people** in West Africa, encouraging kingdoms such as **Dahomey** to capture more slaves

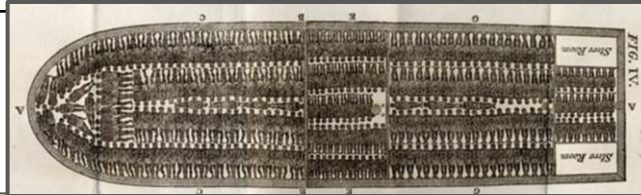


British ships transported the **enslaved people** to **colonies** in the **Caribbean** and America, where they worked on farms in terrible conditions, receiving no pay. The rice, tobacco, and sugar produced on the slave **plantations** was sold back to Europe for huge profits. None of this money reached the **enslaved** Africans.

The Middle Passage

The journey of slaves from African to Americas

- 12-15 million made the journey
- 2 million died (10-20%)
- Chained together
- Fed one or two meals a day
- Diseased
- Abuse, whipping common
- Seven week journey
- Rebellions infrequent but did happen



VOCABULARY

Abolition	Getting rid of slavery
Abolished	Got rid of
Caribbean	Islands to the South of America, including Jamaica and Cuba
Chattel	Property
Colony	An area of land controlled by an Empire
Colonised	Took over
Colonist	Someone who takes over land
Dahomey	A powerful African kingdom
Deteriorated	Got worse
Empire	When a powerful country takes over other areas of land
Enlightenment	A period of new ideas, rejecting religion and old thinking
Enslaved People	Slaves (but his term suggests that they were people, firstly)
MP	A member of Parliament
Mutiny	When a soldier refuses to follow orders
Parliament	Part of the British government that votes on new laws
Plantations	Farms
Profitable	Something that makes money

The Slave Trade

Britain became the leading nation in the so-called _____

- By 1760, _____ Africans were carried by British ships every year.



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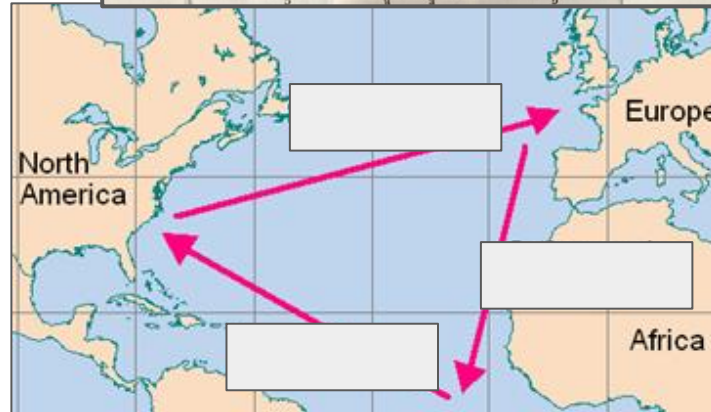
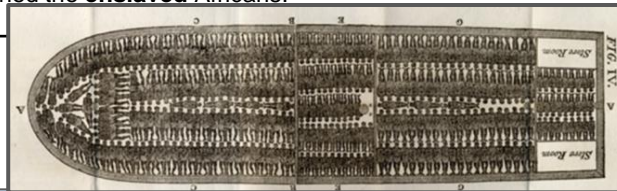


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The journey of slaves from African to Americas

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VOCABULARY

Abolition

Abolished

Caribbean

Chattel

Colony

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Colonist

Dahomey

Deteriorated

Empire

Enlightenment

Enslaved People

MP

Mutiny

Parliament

Plantations

Profitable

Year 8 Religious Studies Knowledge Organiser - Hinduism

Key vocab:

Polytheistic - The belief in multiple Gods

Monotheistic - The belief in one God

Brahman - The supreme being/entity which is part of everything

Trimurti - The 3 Gods of creation, preservation and destruction

Reincarnation - The belief that you will be born again after death

Vedas - The 4 most significant Hindu texts

Shruti - Scripture that was originally passed down through recitation. Originally from God

Moksha - Where the atman goes after breaking the cycle of samsara to be reunited with Brahman

Atman - The soul

Samsara - The cycle of reincarnation

Mantra - A chant used during worship

Murti - A sacred image or statue of a God

Puja - Any act of Hindu worship

Hindu rituals

Hindu weddings are elaborate and sacred ceremonies that celebrate the union of two individuals and their families. Rich in tradition, they often span several days and include rituals like the "baraat" (groom's procession), "mandap" (wedding altar), and the exchange of vows around a sacred fire. These weddings are vibrant affairs with music, dance, feasts, and blessings, emphasizing love, respect, and spiritual connection.

Hindu funerals focus on honoring the deceased and facilitating their soul's journey to the afterlife. The body is typically cremated, often at a riverbank, symbolizing the release of the soul from the physical form. Rituals include prayers, offerings, and the "antyeshti" ceremony, aimed at ensuring peace for the departed and guiding their soul toward liberation (moksha).

Reincarnation: Hindus believe that the soul (atman) is eternal and undergoes reincarnation (samsara) through many lifetimes. The actions (karma) from past lives determine one's future births. Liberation (moksha) is achieved when the soul breaks free from the cycle of rebirth.

The Trimurti: The Trimurti consists of three principal deities—Brahma (the creator), Vishnu (the preserver), and Shiva (the destroyer). Together, they represent the cyclical process of the universe: creation, maintenance, and dissolution, which are essential for maintaining cosmic order and balance.

Brahman: Brahman is the ultimate, unchanging reality in Hinduism, beyond all forms and attributes. It is the source of everything, both immanent and transcendent. The realization of Brahman as one's true self (Atman) leads to spiritual enlightenment and liberation (moksha).

Hindu symbols:

Important Hindu symbols include the "Om," representing the sound of the universe and ultimate reality, and the "Swastika," symbolizing auspiciousness and prosperity. The "Trishul" (trident) represents Lord Shiva's power, while the "Lotus" signifies purity and spiritual enlightenment. These symbols embody core spiritual values and divine energies.

Hindu worship

A mandir is a Hindu temple, a sacred space for prayer, worship, and spiritual reflection. It houses idols of deities, where devotees offer prayers, light lamps, and participate in rituals. Mandirs are often architecturally intricate, symbolizing divine presence and fostering a sense of community and devotion.

A Hindu may worship through rituals like "puja," offering prayers, flowers, incense, and food to deities at home or in a temple. Worship can include chanting mantras, reciting scriptures, lighting lamps, and making symbolic gestures such as bowing. Devotion, reverence, and seeking blessings for spiritual growth are central.

Hindu festivals

Diwali: Diwali, also known as the Festival of Lights, is a major Hindu celebration symbolizing the triumph of light over darkness and good over evil. It commemorates the return of Lord Rama to his kingdom after defeating the demon king Ravana. Families celebrate by decorating homes with oil lamps (diyas), bursting fireworks, exchanging sweets, and offering prayers to deities, especially Lakshmi, the goddess of wealth. The festival fosters joy, togetherness, and renewal of hope.

Holi: Holi, the Festival of Colors, is a vibrant Hindu celebration marking the arrival of spring and the victory of good over evil. It commemorates the burning of the demoness Holika and the protection of Prahlad, a devout child. People celebrate by throwing colorful powders, dancing, singing, and enjoying festive foods. Holi promotes unity, joy, and the breaking down of social barriers, bringing communities together in a spirit of fun, renewal, and harmony.

Year 8 Religious Studies Knowledge Organiser - Hinduism

Key vocab:

_____ - The belief in multiple Gods

_____ - The belief in one God

Brahman - _____

Trimurti - The 3 Gods of _____

_____ - The belief that you will be born again after death

Vedas - The ___ most significant Hindu texts

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YEAR 8 FRENCH KNOWLEDGE ORGANISER

Term 1 - Sentence Builder 1

my best friend (m.)	mon meilleur ami
my best friend (f.)	ma meilleure amie
is called	s'appelle
he has/ she has	il a /elle a

12 years old	douze ans
13 years old	treize ans
14 years old	quatorze ans
15 years old	quinze ans

blue eyes	les yeux bleus
green eyes	les yeux verts
brown eyes	les yeux marron
short hair	les cheveux courts
red hair	les cheveux roux

white hair	les cheveux blancs
black hair	les cheveux noirs
a dog	un chien
a cat	un chat

he is/she is	il est /elle est
tall	grand(e)
average height	de taille moyenne
beautiful	beau/belle

only child (m.)	fil unique
only child (f.)	fille unique
happy	content(e) heureux/euse
nice	agréable

more...than	plus...que
less...than	moins...que
as...as	aussi...que

hardworking	travailleur/euse
kind	gentil/gentille
nice/kind	sympa
self-confident	sûr de lui/sûre d'elle

Practice Translations

My best friend (m.) is (has!) 14 years old.

He has a dog and he is an only child.

My best friend is called Mary and she has green eyes

My best friend is hardworking and he has short hair.

My best friend (f.) is kinder (more kind) than my sister

YEAR 8 FRENCH KNOWLEDGE ORGANISER

Term 1 - Sentence Builder 1

my best friend (m.)	
my best friend (f.)	
is called	
he has/ she has	

12 years old	
13 years old	
14 years old	
15 years old	

blue eyes	
green eyes	
brown eyes	
short hair	
red hair	

white hair	
black hair	
a dog	
a cat	

he is/she is	
tall	
average height	
beautiful	

only child (m.)	
only child (f.)	
happy	
nice	

more...than	
less...than	
as...as	

hardworking	
kind	
nice/kind	
self-confident	

Practice Translations

My best friend (m.) is (has!) 14 years old.	
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My best friend is called Mary and she has green eyes	
My best friend is hardworking and he has short hair.	
My best friend (f.) is kinder (more kind) than my sister	

YEAR 8 FRENCH KNOWLEDGE ORGANISER

Term 1 - Sentence Builder 2

sometimes	parfois/quelquefois
from time to time	de temps en temps
usually	d'habitude
often	souvent

my (step) dad	mon (beau-) père
my (step) brother	mon (demi-) frère
my uncle	mon oncle
my friend (m.)	mon copain

I (don't) get on well	je (ne) m'entends (pas) bien
I argue with	je me dispute avec
I'm interested in	je m'intéresse à
I depend on	je dépends de

my (step) mother	ma (belle-) mère
my (step) sister	ma (demi-) soeur
my aunt	ma tante
my friend (f.)	ma copine

my role model is	mon modèle c'est
I can't stand	je ne supporte pas
he is/ she is	il est/elle est
they are (m.)/ they are (f.)	ils sont/elles sont

strong	fort(e)(s)
weak	faible(s)
sad	triste(s)
loyal	fidèle(s)

he/she understands me	il/elle me comprend
they understand me	ils/elles me comprennent
he/she invites me to parties	il/elle m'invite aux fêtes
they invite me to parties	ils/elles m'invitent aux fêtes
he/she keeps my secrets	il/elle garde mes secrets
they keep my secrets	ils/elles gardent mes secrets

Practice Translations

Sometimes I argue with my brother because he is sad	
Usually I get on well with my mother because she is kind	
I depend on my friend because she keeps my secrets	
My model is my step sister because she understand me	
I love my uncle because he invites me to parties	

YEAR 8 FRENCH KNOWLEDGE ORGANISER

Term 1 - Sentence Builder 2

sometimes	
from time to time	
usually	
often	

I (don't) get on well	
I argue with	
I'm interested in	
I depend on	

my (step) dad	
my (step) brother	
my uncle	
my friend (m.)	

my (step) mother	
my (step) sister	
my aunt	
my friend (f.)	

my role model is	
I can't stand	
he is/ she is	
they are (m.)/they are (f.)	

strong	
weak	
sad	
loyal	

he/she understands me	
they understand me	
he/she invites me to parties	
they invite me to parties	
he/she keeps my secrets	
they keep my secrets	

Practice Translations

Sometimes I argue with my brother because he is sad	
Usually I get on well with my mother because she is kind	
I depend on my friend because she keeps my secrets	
My model is my step sister because she understand me	
I love my uncle because he invites me to parties	

YEAR 8 FRENCH KNOWLEDGE ORGANISER

Term 1 - Sentence Builder 3

in my house	dans ma maison
at mine	chez moi
to stay in good health	pour rester en bonne santé

for breakfast	pour le petit-déjeuner
for lunch	pour le déjeuner
for dinner	pour le dîner
after lessons (school)	après les cours

pour commencer	to start
comme entrée	as a starter
comme plat principal	for the main meal
comme dessert	as dessert

I eat/ we eat	je mange/on mange
I drink/ we drink	je bois/on boit
I have/ we have (I take/ we take)	je prends/on prend

bread	du pain
cheese	du fromage
fish	du poisson
cake	du gâteau

meat	de la viande
ice-cream	de la glace
eggs	des oeufs
vegetables	des légumes

milk	du lait
water	de l'eau
tea	du thé
coffee	du café

I'm hungry	j'ai faim
I'm thirsty	j'ai soif

Practice Translations

At mine for dinner, we eat meat and vegetables	
To start, I eat some eggs	
In my house we drink tea but we don't drink coffee	
After school, I eat some cake	
Usually at the restaurant, I have some bread and some cheese.	

YEAR 8 FRENCH KNOWLEDGE ORGANISER

Term 1 - Sentence Builder 3

in my house	
at mine	
to stay in good health	

for breakfast	
for lunch	
for dinner	
after lessons (school)	

pour commencer	
comme entrée	
comme plat principal	
comme dessert	

I eat/ we eat	
I drink/ we drink	
I have/ we have (I take/ we take)	

bread	
cheese	
fish	
cake	

meat	
ice-cream	
eggs	
vegetables	

milk	
water	
tea	
coffee	

I'm hungry	
I'm thirsty	

Practice Translations

At mine for dinner, we eat meat and vegetables	
To start, I eat some eggs	
In my house we drink tea but we don't drink coffee	
After school, I eat some cake	
Usually at the restaurant, I have some bread and some cheese.	

YEAR 8 FRENCH KNOWLEDGE ORGANISER

Term 1 - Sentence Builder 4

to stay healthy	pour rester en bonne santé
to be in shape	pour être en bonne forme

I try	j'essate de (d')
I tend	j'ai tendance à
I'm going to	je vais

to eat	manger
to drink	boire
to have (to take)	prendre
to buy	acheter
to order	commander
to cook	cuisiner

rice	du riz
pasta	des pâtes
beer	de la bière
a baguette/French stick	une baguette

to sleep well	bien dormir
to run	courir
to walk	marcher
to rest	me reposer

to move more	bouger plus
to be outside	être dehors
to take medicine	prendre les médicaments
to drink a lot of water	boire beaucoup d'eau

to avoid...	éviter...
sugary food	les sucreries
sugary drinks	les boissons sucrées

an unhealthy diet	un régime malsain
being tired	d'être fatigué(e)
being ill	d'être malade

Practice Translations

To stay healthy I tend to drink a lot of water	
To be in shape I avoid sugary food	
To stay healthy I'm going to sleep well	
To stay healthy I try to cook vegetables and rice	
To stay in shape I tend to avoid an unhealthy diet	

YEAR 8 FRENCH KNOWLEDGE ORGANISER

Term 1 - Sentence Builder 4

to stay healthy	
to be in shape	

I try	
I tend	
I'm going to	

to eat	
to drink	
to have (to take)	
to buy	
to order	
to cook	

rice	
pasta	
beer	
a baguette/French stick	

to sleep well	
to run	
to walk	
to rest	

to move more	
to be outside	
to take medicine	
to drink a lot of water	

to avoid...	
sugary food	
sugary drinks	

an unhealthy diet	
being tired	
being ill	

Practice Translations

To stay healthy tend to drink a lot of water	
To be in shape avoid sugary food	
To stay healthy I'm going to sleep well	
To stay healthy I try to cook vegetables and rice	
To stay in shape tend to avoid an unhealthy diet	

YEAR 8 SPANISH KNOWLEDGE ORGANISER

Term 1 – Sentence Builder 1

Mi major amigo/a	My best friend
Mi novio/novia	My boyfriend/girlfriend
Mi hermano	My brother
Mi hermana	My sister
Mi hermana mayor	My older sister

Se llama	Is called
tiene	has
es	is
Me llamo	I'm called

los ojos azules	blue eyes
los ojos verdes	green eyes
los ojos marrones	brown eyes
el pelo rubio	blonde hair
el pelo rojo	red hair

el pelo gris	grey hair
el pelo blanco	white hair
el pelo negro	black hair
el pelo castaño	brown hair

el pelo negro	black hair
el pelo moreno	dark hair
el pelo corto	short hair
el pelo largo	long hair

un animal	an animal
un gato	a cat
un caballo	a horse
un conejo	a rabbit

Tengo un pez naranja	I have an orange fish
Tengo un gato blanco	I have a white cat

(El) es bajo	He is short
(Ella) es baja	She is short
Alto/a	tall
Religioso/a	religious

Practice Translations

My brother is called Miguel.	
My sister is tall.	
My older sister is called Sofia.	
My boyfriend has green eyes and short hair.	
She has long and blond hair.	

YEAR 8 SPANISH KNOWLEDGE ORGANISER

Term 1 - Sentence Builder 2

once	11
doce	12
trece	13
catorce	14

años	hay
tiene	He/she has (is)
quince	15
dieciséis	16

hijo único	Only child (m)
hija única	Only child (f)
Gay	gay
Me llevo bien	I get on well

heterosexual	straight
lesbiana	lesbian
discapacitado/a	disabled
divertido	fun

muy	very
demasiado	too
un poco	a little
bastante	quite

simpático/a	kind
bonito/a	beautiful
fuerte	strong
monótono/a	boring

contento/a	happy
alegre	happy
triste	sad
feliz	happy

más....que menos ...que	more....than less....than
enfadado	angry
trabajador/a	hard working

Practice Translations

She is very beautiful and kind.	
He isn't too strong but he is active.	
She is a little hard working and disabled.	
He is more boring than my brother	
I get on well with my sister.	

YEAR 8 SPANISH KNOWLEDGE ORGANISER

Term 1 - Sentence Builder 3

Por lo general	en mi pueblo...
A veces	hay
De vez en cuando	me gustaria tener

generalmente	pero por desgracia
normalmente	no hay (don't add un(os)/una(s))

Me llevo bien	I get on well with
No me llevo bien	I don't get on
Me peleo con	I fight with
Mi madrastra	My stepmum
Mi padrastro	My stepdad

Mi padre	My dad
Mi tío/a	Mu uncle/ aunty
Mi primo/a	My cousin (m) (f)
Mi hijo/a	My son/ daughter
Mi vecino/a	My neighbour

Mi modelo (a seguir) es = My role model is	Me apoya = he/she supports me
La persona que admires = the person I admire is	Confío en = I confide in
Admiro a = I admire	Dado que = because puesto que = because
Me gusta (n) = I like (plural)	Porque = because

Mi marido/ mujer	My husband/wife	Me hace reir	He/she makes me laugh
Mi abuelo/a	My grandma/pa	Me hacen reir	They make me laugh
Mis abuelos	My grandparents	Son	They are
(no)	does not	No son	They aren't
nunca	never		

Practice Translations

Sometimes I get on well with my aunt because she is fun.	
I never argue with my cousin because he is very social.	
From time to time I confide in my stepmum because she is unique.	
The person I admire is my grandad because he is usually kind.	
My role model is my dad because he makes me laugh and is hard working.	

YEAR 8 SPANISH KNOWLEDGE ORGANISER

Term 1 - Sentence Builder 4

En mi casa	At home
Generalmente	Generally
A menudo	often
A veces	sometimes

Para el desayuno	For breakfast
Para el almuerzo	For lunch
Para la cena	For dinner

como	I eat
tomo	I have (take)
bebo	I drink
comemos	We eat

Despues del insti	mucho(s)/ mucha(s)
Por la noche	In the evening
Para la merienda	For a snack

tomamos	We have (take)
cocinamos	We cook

(el) pan	bread
(el) jamón	ham
(el) queso	cheese
(el) pescado	fish
(el) arroz	rice
(el) helado	Ice cream
(los) churros	churros
agua	water

un bocadillo	a sandwich
un pastel	a cake
(el) chocolate	chocolate
(los) huevos	Churros
(la) paella	paella
(la) fruta	fruit
(la) tortilla	omelette
(las) tapas	tapas

Practice Translations

At home for breakfast <i>eat omelette</i> .	
After school I have a sandwich, and I drink water.	
In the evening, sometimes we cook chocolate and churros.	
Normally for lunch I have a ham sandwich and fruit.	
For dinner I eat eggs and bread.	

Year 8 Space & Organisation Knowledge

Keywords associated with space

Area
Capacity
Place
Room

Keywords associated with organisation

Structure
Team
management
Order

Space definition - space refers to the 'unoccupied areas on the field or court where a player can move, receive the ball or execute a play without immediate pressure from opponents'.

Organisation definition - Organisation in sport allows you to consider how best to place individuals in specific games, set out tactics and strategies and the overall plan you want your team to follow.

How to create space

Cut	a change of direction maneuver to deceive an opponent
Drive	a dynamic, explosive movement to a space or the ball, often used to create an opening to receive a pass or to gain a strategic position on the court
Roll	It involves a player driving out with the ball, then pivoting and spinning around so their back is to the defender before driving back towards the ball in a new space
Hip Direction	Hips face the direction of movement
Step	Push off on the outside foot

What is passing? the intentional transfer of a ball from one teammate to another to maintain possession, advance the play, and create scoring opportunities

Passing equipment in our sports

Football	<ul style="list-style-type: none"> Position your non-kicking foot next to the ball. keep your eyes on the target, and use the inside of your foot for a short pass or the instep for a long pass
Hockey	<ul style="list-style-type: none"> Shift your weight from your back foot to your front foot while stepping forward, and follow through with your stick towards the target. keep your head up to see where you are passing Use the flat side of your stick.
Netball/ basketball	<ul style="list-style-type: none"> keeping elbows tucked in use body weight to generate power, Aim for accuracy with a well-timed release.
Rugby	<ul style="list-style-type: none"> hold the ball with both hands underneath the ball, then use a quick, upward flick of your fingertips
Volleyball	<ul style="list-style-type: none"> Get into a low, ready position with your feet behind your head and arms relaxed in front. Position your forearms by placing one hand on top of the other. Bringing the thumbs together, and locking your elbows to create a solid platform.

Year 8 Space & organisation Knowledge

Keywords associated with space

Keywords associated with organisation

Space definition -

Organisation definition -

How to create space

Cut	
Drive	
Roll	
Hip Direction	
Step	

What is passing?

Passing equipment in our sports

Football	•
Hockey	• •
Netball/ basketball	• •
Rugby	•
Volleyball	• •

What is dribbling? the act of maneuvering a ball with a player's body while moving, typically to advance down the field and avoid defenders

What is tackling? a defensive action to dispossess an opponent of the ball, stop their forward movement, or both.

How does dribbling link to space and organisation?

Creating & finding space	<ul style="list-style-type: none"> Running into open space Creating space for others Exploiting space
Manipulating space with tight control	<ul style="list-style-type: none"> Beating defenders in tight spaces Changing direction Creating new angles
Dribbling at Speed	<ul style="list-style-type: none"> Exploiting large spaces Using speed to stretch play

How does tackling link to space and organisation?

Creating space (offensive)	<ul style="list-style-type: none"> Individual movement Team tactics Breaking the defensive structure Player positioning
----------------------------	---

Examples of dribbling in activities

Football	<ul style="list-style-type: none"> Use light, consistent touches with the inside and outside of your feet Keeping the ball close to your body with a low center of gravity and bent knees
Hockey	<ul style="list-style-type: none"> Maintain a low stance with bent knees and a slight forward lean. Keep the ball in front of you, slightly to the right. Use small, controlled taps with the bottom half of the stick to move it forward.
Basketball	<ul style="list-style-type: none"> keep your head up, eyes on the game. Use your fingertips to push the ball firmly down with a flexed wrist

Examples of tackling/stealing or intercepting in activities

Football	<ul style="list-style-type: none"> When you are close enough, use your leading foot to make contact with the ball to stop the attacker Use your body to remain balanced and in control.
Hockey	<ul style="list-style-type: none"> Maintain a low, balanced stance Use your stick to jab or block the ball away from the opponent
Basketball/netball	<ul style="list-style-type: none"> Use quick feet to cut of the passing line Eyes on the ball Go for the ball with two hands Lead with your outside arm for a clean contact
Rugby	<ul style="list-style-type: none"> Align with the opponent's "safe" side Drive forward to meet them below the sternum Place your right shoulder into their mid-thigh with your head on the opposite side of the ball. Wrap your arms around their legs, squeeze, and drive forward Use your leg drive to bring them to the ground

What is dribbling?

How does dribbling link to space and organisation?

	<ul style="list-style-type: none"> • Running into open space • Creating space for others • Exploiting space
	<ul style="list-style-type: none"> • Beating defenders in tight spaces • Changing direction • Creating new angles
	<ul style="list-style-type: none"> • Exploiting large spaces • Using speed to stretch play

Examples of dribbling in activities

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What is tackling?

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	<ul style="list-style-type: none"> • Individual movement • Team tactics • Breaking the defensive structure • Player positioning
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Examples of tackling/stealing or intercepting in activities

Football	<ul style="list-style-type: none"> •
Hockey	
Basketball/ netball	
Rugby	

Food & Nutrition Knowledge Organiser – Working Safely in the Kitchen KS3

Personal Hygiene

- Wash hands with hot, soapy water for 30 seconds before cooking.
- Tie back long hair; remove jewellery.
- Wear a clean apron.
- Cover cuts with a blue waterproof plaster.
- Avoid touching your face or hair during food preparation.

Food Safety

Preventing Food Poisoning

- **Keep raw and cooked foods separate** to avoid cross-contamination.
- Use **separate chopping boards**:
 - **Red** – raw meat
 - **Green** – fruit & vegetables
 - **Yellow** – cooked meat
 - **Brown** – bakery/bread
- Cook food thoroughly; check it is piping hot.

Common Kitchen Hazards

- **Slips and trips** – clean spills immediately.
- **Burns and scalds** – use oven gloves; take care with hot water.
- **Cuts** – handle knives properly; store safely.
- **Fire risks** – keep flammable items away from heat sources.

Safe Cooking Practices

- Read the recipe before starting.
- Set up a **clean, organised workstation**.
- Use the correct tool for the job.
- Clean as you go to keep your area safe.
- Wash equipment in hot, soapy water after use.

Equipment Safety

Using Knives

- Use the **claw grip** for holding food.
- Use the **bridge hold** for cutting larger items.
- Always carry knives with the blade pointing down.
- Never leave knives in a sink of water.

Using Heat Sources

- Keep pan handles turned inwards.
- Use oven gloves, not tea towels.
- Open oven doors slowly to avoid steam burns.

Food & Nutrition Knowledge Organiser – Working Safely in the Kitchen KS3

Personal Hygiene

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- Tie back long hair; remove
- Wear a clean.....
- Cover cuts with a plaster.
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Food Safety

Preventing Food Poisoning

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Equipment Safety

Using Knives

- Use the for holding food.
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- Always carry knives with the blade pointing down.
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Using Heat Sources

- Keep pan handles turned.....
- Use, not tea towels.
- Open oven doors slowly to avoid

Food & Nutrition Knowledge Organiser – Working Safely in the Kitchen KS3

What Are Organoleptic Properties?

Organoleptic properties are the characteristics of food that we experience using our **senses**:

- **Sight** (appearance)
- **Smell** (aroma)
- **Taste** (flavour)
- **Touch** (texture and mouthfeel)
- **Sound** (e.g., crunch)

Key Vocabulary

Organoleptic – using the senses to evaluate food

Aroma – smell of food

Texture – feel or mouthfeel of food

Flavour – taste + aroma

Mouthfeel – texture sensed in the mouth

These properties help us judge the quality, freshness, and appeal of

Appearance

Colour, shape, size, glossiness, evenness, visible ingredients

Helps us decide if food looks appealing or fresh

Aroma (Smell)

First sense used before eating

Can indicate freshness or spoilage

Examples: sweet, spicy, burnt, sour, fragrant

Flavour (Taste)

The five main tastes:

- **Sweet**
- **Salty**
- **Sour**
- **Bitter**
- **Umami (savoury)**

Flavour is also influenced by smell.

Texture (Mouthfeel)

What food feels like when touched or eaten:

Crunchy, crispy, chewy, smooth, creamy, soft, firm, sticky, crumbly

Sound

The noise food makes when eaten or handled

Examples: crunch of crisps, snap of chocolate, fizz of drinks

Food & Nutrition Knowledge Organiser – Working Safely in the Kitchen KS3

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- (aroma)
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What food feels like when touched or eaten:

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.....
.....
.....




Sound

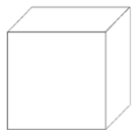
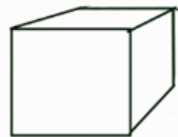
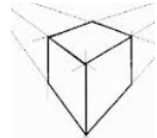
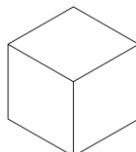
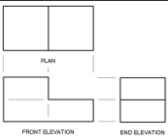
The noise food makes when eaten or handled

Examples:




.....
.....
.....
.....
.....

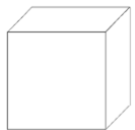
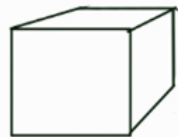
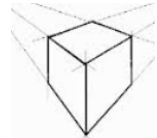
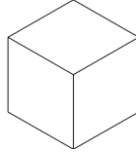
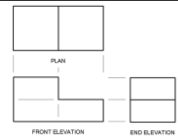
Design and Technology Year 8 - Knowledge organiser

The 3 Wood Groups		
<p>Hardwoods</p> 	<p>Hardwoods usually grow in warm climates and are slow growing so they're generally more expensive than softwoods. The trees have broad, flat leaves and are deciduous (they lose their leaves in autumn). The wood tends to have a tighter grain and be denser and harder than softwoods, although there are exceptions to this, e.g. balsa.</p>	<p>Examples are: oak, mahogany, ash, balsa and beech</p>
<p>Softwoods</p> 	<p>Softwoods grow in colder climates and are fast-growing. This makes them fairly cheap and readily accessible. The trees have leaves like needles, have cones (e.g. pine) and are coniferous, meaning they keep their leaves all year round.</p>	<p>Examples are: pine, spruce and larch</p>
<p>Manufactured Boards</p> 	<p>Processed pieces of wood can be combined with glue and pressed into panels. This forms new materials called manufactured boards or manufactured timbers.</p>	<p>Examples are: MDF (medium density fibreboard), plywood, chipboard</p>

Drawing Techniques used in DT	
	<p>Oblique Will have a 45 degree angle. The oblique sketching is a pictorial representation of an object, in which the diagram is intended to depict the perspective of objects in three dimensions.</p>
	<p>1 Point perspective Will have 1 vanishing point where 1 side of the object will get smaller as it goes towards the vanishing point</p>
	<p>2 Point perspective Will have 2 vanishing points where both sides of the object will get smaller as it goes towards the vanishing points</p>
	<p>Isometric Isometric illustration is a form of 3D drawing set out using 30-degree angles. and there is no perspective.</p>
	<p>Orthographic Projection An orthographic projection is a way of representing a 3D object by using several 2D views of the object.</p>


Design and Technology Year 8 - Knowledge organiser

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Drawing Techniques used in DT	
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	<p>!..... Isometric illustration is a form of 3D drawing set out using 30-degree angles. and there is no perspective.</p>
	<p>Orthographic Projection An orthographic projection is a</p>

Design and Technology Year 8 - Knowledge organiser


The Metal Groups	
Ferrous metals	Ferrous metals refer to any metal that contains iron. Ferrous metals are hard, heavy, have high density, fragile, not malleable, ductile, magnetic, and rust.
Non-ferrous metals	Non-ferrous metals or alloys are defined as materials that are not iron-based like their ferrous counterparts. Common non-ferrous metals include copper, aluminum and lead. Ferrous metals contain iron making most of these metals have a magnetic property. Non-ferrous metals are found in the Earth as chemical compounds. Non-ferrous metals are light, malleable, not magnetic, and more expensive.
Alloy	An alloy is a combination of a metal with at least one other metal or nonmetal. Alloys are stronger, harder, more durable, and sometimes more corrosion-resistant than their pure metal counterparts.

DT Key Words in y8	
Rendering	Adding shading, texture and colour to make the object look like the material it will be made in eg woodgrain
Adhesives	A substance used for sticking objects or materials together; eg Epoxy resin, Synthetic resin, wood glue, PVA
PVA	Polyvinyl acetate , commonly known as wood glue, PVA glue, white glue, carpenter's glue, school glue
CAD	Computer Aided Design
CAM	Computer Aided Manufacture
Iron 	Iron is a chemical element in the periodic table that has the symbol Fe and atomic number 26.

Areas of DT
<u>Resistant materials</u> - the study of the design and make process with a particular interest in using woods, metals and plastics and product manufacturing.
<u>Product design</u> - the process of imagining, creating and iterating products that solve users' problems or address specific needs in a given market.
<u>CAD/CAM</u> - computer aided design and computer aided manufacture. The process of designing and making using computers and machinery.
<u>Electronics</u> - the designing and making of electronic products. Engineering - the application of science and maths to design.
<u>Textiles</u> - the process of designing and making products using cloth and different fabrics.

Design and Technology Year 8 - Knowledge organiser

The Metal Groups	
.....	Ferrous metals refer to any metal that contains iron. Ferrous metals are hard, heavy, have high density, fragile, not malleable, ductile, magnetic, and rust.
Non-ferrous metals	Non-ferrous metals or alloys are defined as materials that are not iron-based like their ferrous counterparts. Common non-ferrous metals include copper, aluminum and lead. Ferrous metals contain iron making most of these metals have a magnetic property. Non-ferrous metals are found in the Earth as chemical compounds. Non-ferrous metals are
.....	An alloy is a combination of a metal with at least one other metal or nonmetal. Alloys are stronger, harder, more durable, and sometimes more corrosion-resistant than their pure metal counterparts.

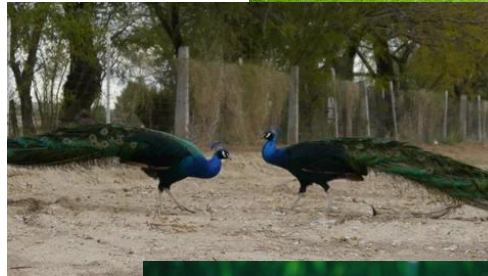
DT Key Words in y8	
.....	Adding shading, texture and colour to make the object look like the material it will be made in eg woodgrain
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Areas of DT
<p><u>Resistant materials</u> - the study of the design and make process with a particular interest in using woods, metals and plastics and product manufacturing.</p> <p><u>Product design</u> - the process of imagining, creating and iterating products that solve users' problems or address specific needs in a given market.</p> <p><u>CAD/CAM</u> - computer aided design and computer aided manufacture. The process of designing and making using computers and machinery.</p> <p><u>Electronics</u> - the designing and making of electronic products. Engineering - the application of science and maths to design.</p> <p><u>Textiles</u> - the process of designing and making products using cloth and different fabrics.</p>

Stage Combat

Key Vocabulary

- **Trust:** Having confidence in someone, believing in them and what they say/do
- **Trust exercise:** Exercises to build trust, e.g. trust falls and counter balances
- **Safety measures:** An action or procedure to lower the risk of injury e.g. doing a move in slow motion first
- **Reassuring:** Trying to remove someone's fears and doubts. This might be through talking to them and practicing.
- **Tension:** A build up of pressure, the feeling that something is going to happen -in our case, that there is going to be a fight
- **Proxemics:** The distance between people on stage
- **Knap:** The sound effect created to make a stage combat move seem more realistic
- **Sightlines:** What the audience can and cannot see
- **Sell the move:** Using your physical and vocal skills to make the move look realistic
- **Blocking:** Setting where you are going to stand and move on stage



Moves we've looked at:

- Slap
- Punch
- Hair Pull
- Kick to the abdomen
- Kick on the ground
- Head smash

Trusting

- In stage combat it's so important that you trust each other. If you do not, this can be dangerous and lead to injury.
- You can tell someone isn't trusting you if:
 - They are giggling
 - They are not talking to you
 - They are messing around
 - They refuse to try a move
- To help people trust you, you can reassure them and talk to them. Make sure you go through the moves in slow motion and until both of you are comfortable and confident before going at full speed.

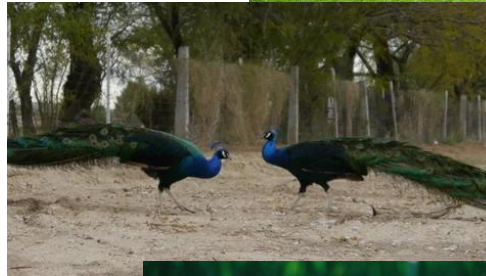
Key Takeaways

- The 'victim' always leads the move
- You must do the move in slow motion at least 3 times before a normal speed
- Proxemics will get closer before a fight -often people will circle each other

Stage Combat

Key Vocabulary

- _____: Having confidence in someone, believing in them and what they say/do
- **Trust exercise:** Exercises to build trust, e.g. _____ and _____
- _____: An action or procedure to lower the risk of injury e.g. doing a move in slow motion first
- **Reassuring:** Trying to remove someone's _____ and _____. This might be through talking to them and practicing.
- _____: A build up of pressure, the feeling that something is going to happen -in our case, that there is going to be a fight
- _____: The distance between people on stage
- _____: The sound effect created to make a stage combat move seem more realistic
- _____: What the audience can and cannot see
- **Sell the move:** Using your _____
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- _____: Setting where you are going to stand and move on stage



Moves we've looked at:

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Trusting

- In stage combat it's so important that you trust each other. If you do not, this can be _____ and lead to _____
- You can tell someone isn't trusting you if:
 - They are _____
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 - They are _____
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Key Takeaways

- The _____ always leads the move
- You must do the move in slow motion at least _____ times before a normal speed
- Proxemics will get _____ before a fight -often people will _____ each other

Stanislavski

Naturalism

- Naturalism in drama refers to the belief that a play should try to represent reality as closely as possible.
- Stanislavski's techniques created the foundation of modern, realistic acting.
- When an actor plays the role and tries to make it as realistic as possible, this is naturalism
- Naturalism should create a world that could almost be our own. Everything in the play should also be as realistic as real life.
- Naturalism is a *style of acting*

Realism

Realism in the theatre was a *theatre movement* that began in the 19th-century theatre, around the 1870s, and remained present through much of the 20th century.

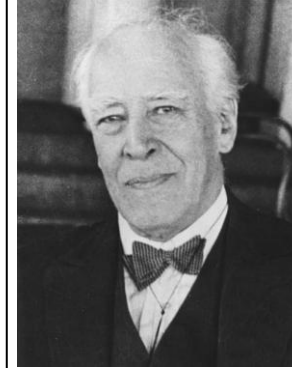
Realism, in theatre, demands that the performance represent life as truthfully as possible and requires actors to behave as if the play is happening in real time.

Konstantin Stanislavski

Born: 1863 | Died: 1938.

Konstantin Stanislavski was a Russian practitioner who created the serious theatre style of Naturalism.

Stanislavski was born into a very wealthy family and founded the Moscow Art Company in 1898. He didn't like the melodrama performances which were popular at that time and instead wanted to create something which was emotionally real.



Key Vocabulary

Characterisation: How a character appears, thinks, moves and speaks

Theatre Practitioner: A person who creates theatre

Sense memory: Using your past senses to influence your acting - touch, smell, hear, taste, see

Ensemble: A group of actors

Stanislavski Method

Stanislavski thought actors were becoming lazy so he invented the Stanislavski Method to allow actors to hone their craft.

1. **Given Circumstance:** the information about the character that you start off with from the play. Stanislavski had 7 main questions for Given Circumstance: Who am I? Where am I? When is it? What do I want? Why do I want it? How will I get it? What do I need to overcome?
2. **Magic If:** The technique where an actor puts themselves in the character's place and asks 'What would I do if I was in this situation?'
3. **Units and Objectives: Units-** when the mood or atmosphere changes. **Objective -A** character's goal for a scene.
4. **Super Objectives:** an objective which runs throughout the whole play. The main objective for a character.
5. **Emotional Memory:** Using previous emotions and memories to influence your acting so that you are not pretending but actually feeling those emotions.
6. **Subtext:** Subtext is the actual meaning and motivation behind the lines that are spoken. It's what a character really wants to say.

Stanislavski

Naturalism

- Naturalism in drama refers to the belief that a play should try to represent reality _____.
- _____
- Stanislavski's techniques created the foundation of _____, realistic acting.
- When an actor plays the role and tries to make it as realistic as possible, this is _____.
- Naturalism should create a world that could almost be our own. Everything in the play should also be as _____.
- Naturalism is a _____.

Realism

Realism in the theatre was a _____ that began in the 19th-century theatre, around the 1870s, and remained present through much of the 20th century.

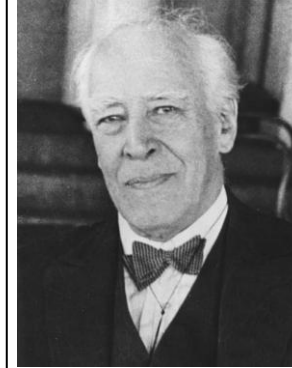
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Key Vocabulary

_____ : How a character appears, thinks, moves and speaks
Theatre Practitioner: A person _____

_____ : Using your past senses to influence your acting - touch, smell, hear, taste, see

Ensemble: _____

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5. _____ : Using previous emotions and memories to influence your acting so that you are not pretending but actually feeling those emotions.
6. **Subtext:** Subtext is the _____. It's what a character really wants to say.

Devices of a computer

_____ = **Personal Computer**

Peripherals – devices you plug into a computer.

Send data *into* the computer

Keyboard, mouse, **microphone**, scanner

Computer sends data *out*

Monitor/screen, **printer**, speakers, headphones

Storage & Data Units

_____ – smallest data unit: **0 or 1**

_____ – **8 bits**

Converting between units

KB = 1,000 _____

_____ = 1,000,000 Bytes

GB = _____ Bytes

_____ \approx 1,000,000,000,000 Bytes

Remember: as you go from:

bits \rightarrow bytes \rightarrow KB \rightarrow MB \rightarrow GB \rightarrow TB, the amount of data gets **1000 \times bigger** each step.

Networks – Basics

Network

A **group of** _____ that share resources

Resources can be files, printers, internet connection, etc.

Why use _____?

Share information quickly

_____ (email, messaging)

Share hardware devices (e.g. _____)

IP Addresses & Wireless

IP address

Stands for _____

Uniquely identifies a device on a network

Connecting to networks

_____ – used to connect to a **wireless** network

Ethernet cable – used for _____ connections



Boolean Logic & Conditions

Used to create conditions that are either _____ or _____

Logic operators

_____ – both conditions must be True

_____ – at least one condition is True

_____ – reverses the condition

IF is a programming statement, not a logic operator.

Devices of a computer

PC = Personal Computer

Peripherals – devices you plug into a computer.

Input devices

Send data *into* the computer

Keyboard, mouse, **microphone**, scanner

Output devices

Computer sends data *out*

Monitor/screen, **printer**, speakers, headphones

Storage & Data Units

Bit – smallest data unit: **0 or 1**

Byte – **8 bits**

Converting between units

KB = 1,000 Bytes

MB = 1,000,000 Bytes

GB = 1,000,000,000 Bytes

TB ≈ 1,000,000,000,000 Bytes

Remember: as you go from:

bits → bytes → KB → MB → GB → TB, the amount of data gets **1000× bigger** each step.

Networks – Basics

Network

A **group of connected computers** that share resources

Resources can be files, printers, internet connection, etc.

Why use networks?

Share information quickly

Communicate (email, messaging)

Share hardware devices (e.g. printers)

IP Addresses & Wireless

IP address

Stands for **Internet Protocol address**

Uniquely identifies a device on a network

Connecting to networks

Wi-Fi – used to connect to a **wireless** network

Ethernet cable – used for **wired** connections



Boolean Logic & Conditions

Used to create conditions that are either **True** or **False**

Logic operators

AND – both conditions must be True

OR – at least one condition is True

NOT – reverses the condition

IF is a programming statement, not a logic operator.

Computer Systems & OS

Physical parts of the computer (you can touch)

Keyboard, monitor, CPU, RAM, hard drive, network card

Programs that run on hardware

Apps, games, web browsers, operating systems

(OS)

Main software that manages the computer

Examples: **Windows, Linux, Android, iOS**

USB is not an OS – it is a type of connection/storage

Programming – Data & Variables

Common data types

- _____ – text in quotation marks, e.g. "Hello", "42"
- _____ – whole numbers, e.g. 42, -3
- _____ – decimal numbers, e.g. 3.14
- _____ – True or False

Variables

- _____ – a memory location that stores data which may change whilst a program runs
- Example: score = 0

File Types & Cloud Storage

File extensions

_____ – Word document

.txt – Plain _____ file

_____ – Video file

.exe – Windows _____

Files stored on the internet instead of your own device

Example: _____

Use a _____ to capture a photo into a computer

Key Components & RAM

(Random Access Memory)

- Temporarily stores the data you are currently working with
- Fast, volatile storage

_____ – main circuit board connecting components

- _____ (**NIC**) – connects computer to a network

Network Hardware

- Connects multiple computers within the _____

- Sends data between _____ (e.g. your home network and the internet)

- **NIC (Network Interface Card)** – lets a computer join a network

Memory & Storage

(Main Memory)

_____ – data lost when power is off

Used by the _____ as short-term working space

Stores running programs & data currently in use

(Non-volatile)

Keeps data when computer is turned off

_____ (**HDD**)

_____ (**SSD**)

USB stick, DVD, memory card, etc.

Computer Systems & OS

Hardware
Physical parts of the computer (you can touch)
Keyboard, monitor, CPU, RAM, hard drive, network card

Software
Programs that run on hardware
Apps, games, web browsers, operating systems

Operating System (OS)
Main software that manages the computer
Examples: **Windows, Linux, Android, iOS**
USB is not an OS – it is a type of connection/storage

Programming – Data & Variables

Common data types

- **String** – text in quotation marks, e.g. "Hello", "42"
- **Integer** – whole numbers, e.g. 42, -3
- **Float** – decimal numbers, e.g. 3.14
- **Boolean** – True or False

Variables

- **Variable** – a memory location that stores data which may change whilst a program runs
- Example: score = 0

File Types & Cloud Storage

File extensions

- **.docx** – Word document
- **.txt** – Plain text file
- **.mp4** – Video file
- **.exe** – Windows program

Cloud storage
Files stored on the internet instead of your own device
Example: **Google Drive**

Capturing images
Use a **Digital Camera** to capture a photo into a computer

Key Components & RAM

RAM (Random Access Memory)

- Temporarily stores the data you are currently working with
- Fast, volatile storage

Other components

- **Motherboard** – main circuit board connecting components
- **Network Card (NIC)** – connects computer to a network

Network Hardware

Switch

- Connects multiple computers within the **same network**

Router

- Sends data between **different networks** (e.g. your home network and the internet)

Other devices

- **NIC (Network Interface Card)** – lets a computer join a network

Memory & Storage

RAM (Main Memory)

- **Volatile** – data lost when power is off
- Used by the **CPU** as short-term working space
- Stores running programs & data currently in use

Secondary Storage (Non-volatile)
Keeps data when computer is turned off

- **Hard Disk Drive (HDD)**
- **Solid State Drive (SSD)**
- USB stick, DVD, memory card, etc.