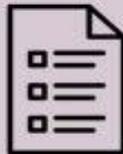
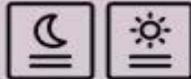
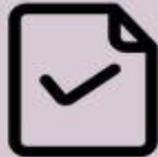


Knowledge Organisers

Year 9 – Half Term 5

Contents:			
How to use your Knowledge Organisers – a step by step guide			P2
English	P3-5	Music	P24
Mathematics	P6-10	Creative Media Production	P25
Science	P11-15	Business and Enterprise	P26-27
Geography	P16-17	Design Technology	P28
History	P18-19	Art	P29
Religious Studies	P20-21	Food Technology	P30-34
French	P22	P.E.	P35
Urdu	P23		

How to use a knowledge organiser – step by step guide

	Look, Cover, Write, Check	Definitions of Key Words	Flash Cards	Self Quizzing	Mind Maps	Paired Retrieval
Step 1	<p>Look at and study a specific area of your KO.</p> 	<p>Write down the key words and definitions.</p> 	<p>Use your KO to condense and write down key facts or information onto flash cards.</p> 	<p>Use your KO to create a mini quiz. Write down your questions using your KO.</p> 	<p>Create a mind map with all the information you can remember from your KO.</p> 	<p>Ask a friend or family member to have the KO or flash cards in their hands.</p> 
Step 2	<p>Cover or flip the KO over and write down everything you can remember.</p> 	<p>Try not to use your KO to help you.</p> 	<p>Add pictures to help support. Then self-quiz using the flash cards. You could write questions on one side, and answers on the other!</p> 	<p>Answer the questions and remember to use full sentences.</p> 	<p>Check your KO to see if there are any mistakes on your mind map.</p> 	<p>They can test you by asking you questions on different sections of your KO.</p> 
Step 3	<p>Check what you have written down. Correct any mistakes in green pen and add anything you have missed. Repeat.</p> 	<p>Use your green pen to check your work.</p> 	<p>Ask a friend or family member to quiz you on the knowledge.</p> 	<p>Ask a friend or family member to quiz you using the questions.</p> 	<p>Try to make connections, linking the information together.</p> 	<p>Write down your answers,</p> 

Year 9
Half Term 6
Women in Writing: The Brontes

Who were the Brontës?

The **Brontës** were a nineteenth-century literary family, born in the village of Thornton and later associated with the village of Haworth in the West Riding of Yorkshire, England. The sisters, Charlotte (1816–1855), Emily (1818–1848), and Anne (1820–1849), are well known as poets and novelists. Like many contemporary female writers, they originally published their poems and novels under male pseudonyms: Currer, Ellis, and Acton Bell.

Similar to	Different from
Alike	Different
Both	Differ
Same	Unlike
similar	Not alike
Like	Difference
In common	On the other hand
Also	However
Similarly	Although
In comparison to	Even though
As well as	In contrast to
	While
	but

Wuthering Heights	Jane Eyre	The Tenant of Wildfell Hall
<p>An 1847 novel by Emily Brontë, published under the pseudonym Ellis Bell.</p> <p>It concerns two rich families living on the West Yorkshire moors, the Earnshaws and the Lintons, and their turbulent relationships with Earnshaw's adopted son, Heathcliff. It was influenced by Romanticism and Gothic fiction.</p>	<p>A novel by Charlotte Brontë, published under the pen name Currer Bell, on 16 October 1847.</p> <p>As an orphaned child, Jane Eyre is first cruelly abused by her aunt, then cast out and sent to a charity school. Though she meets with further abuse, she receives an education, and eventually takes a job as a governess at the estate of Edward Rochester.</p>	<p>The second and final novel written by English author, Anne Brontë. It was first published in 1848 under the pseudonym Acton Bell.</p> <p>The novel is written as a series of letters from Gilbert Markham to his friend about the events connected with his meeting a mysterious young widow, calling herself Helen Graham.</p>

Gothic Literature elements:

- **suspense** - plot lines around suspenseful events, disappearances, unexplainable events, and frightening objects
- **terror and fear** - doors suddenly closing, baying of dogs, footsteps, moans, and eerie sounds
- **paranormal activity** - ghosts, giants and shadowy figures
- **omens and prophecies** - typically distressing dreams, visions or prophecy connected to the setting
- **emotion** - melodrama, inner turmoil, kidnappings, murders, and insanity
- **romance** - passionate relationships leading to tragedy
- **creepy settings** - haunted houses, graveyards, and dark forests
- **dark atmosphere** - rainy, storms, chill in the air, and howling wind
- **strong character traits** - women, tyrannical male characters (villains) and anti-heroes

enjoylearnsucceed

Gothic setting vocabulary:

abandoned, agonising, chilling, clammy, cramped, crumbling, darkening, deafening, decaying, dilapidated, deserted, disgusting, ear-splitting, eerie, filthy, frozen, gloomy, gruesome, haunting, horrendous, jagged, lifeless, looming, miserable, misty, mottled, murky, neglected, petrifying, repulsive, sickening, silent, silhouetted, sinister, smashed, solemn, stealthy, stale, stomach-turning, rotten, rusty, shadowy, weathered, terrifying, twisted

Year 9
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Similar to	Different from
Alike	Different
Both	Differ
Same	Unlike
similar	Not alike
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Forms	Definitions
Acrostic Poem	A structure of poem that begins with a word; each letter of this word forms the start of each line in the poem.
Leaflet	An informative piece of writing that focuses on a specific topic. It often provides key facts, statistics and pictures.
Diary Entry	A short, personal account of an event or experience.
Script	A script is a piece of dramatic writing. It includes stage directions, characters names and scenes descriptions.
Travel Writing	This type of writing involves a journey or travel to a different place. Quite often, this involves describing the place to a person.

DAFOREST Non-Fiction Writing Techniques

D	irect Address	Directing a statement towards the reader/audience.	You can be the change. You can make a difference.
A	djectives Illiteration	Describing words When words start with the same sound	Vicious, kind, green Tantalising the tastebuds.
F	acts	Correct pieces of information	School is an educational environment.
O	pinion	A view or perspective on something	Education is the key to a successful future.
R	hetorical Questions Repetition	A question that does not need an answer The repetition of key ideas or words	What on Earth are you doing? Happiness is the key to success. Happiness leads to a better life.
E	otive Language	Words/phrases that evoke an emotion	Life is excruciating for those suffering with serious illness.
S	tatistics	Percentage/Fractions	80% of Head and Shoulders users said their hair became very healthy after using the product.
T	riple	A list of three words or phrases	The world is being destroyed, devastated and ruined.

Key Words:

Altruism

World Heritage

Misanthropic

Industrial Revolution

Immigration

UNIT 3F – GRAPHS, TABLES AND CHARTS

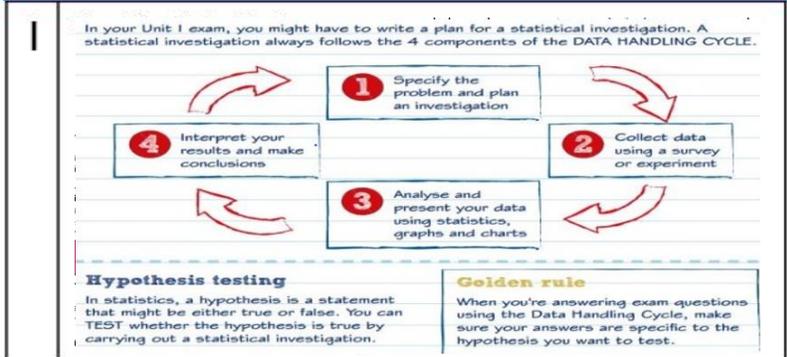
REPRESENTING DATA – Videos 401/425/427/428

<ul style="list-style-type: none"> Information you are collecting listed. Column for tallies. Column for frequency. 	<table border="1"> <tr> <td>Milk</td> <td> </td> <td>21</td> </tr> <tr> <td>Dark</td> <td> </td> <td>5</td> </tr> <tr> <td>White</td> <td> </td> <td>13</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total</td> <td>40</td> </tr> </table>	Milk		21	Dark		5	White		13	Total		40
Milk		21											
Dark		5											
White		13											
Total		40											

<p>2 Bar Chart</p> <ul style="list-style-type: none"> Frequency on y-axis. Information you are collecting on the x-axis. Bars same width. Equal gaps between bars. Title explaining what the chart shows. 	<p>Eye colours in a Year 8 Class</p> <table border="1"> <caption>Eye Colours in a Year 8 Class</caption> <thead> <tr> <th>Eye Colour</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>Green</td> <td>4</td> </tr> <tr> <td>Blue</td> <td>12</td> </tr> <tr> <td>Brown</td> <td>8</td> </tr> </tbody> </table>	Eye Colour	Frequency	Green	4	Blue	12	Brown	8
Eye Colour	Frequency								
Green	4								
Blue	12								
Brown	8								

<p>3 Pie Chart</p> <ul style="list-style-type: none"> Divided into sectors which shows the relative size of the data. Needs a key or labels to clearly show what each sector represents. Sectors calculated using parts of 360°. 	<table border="1"> <caption>Pet Preferences</caption> <thead> <tr> <th>Pet</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Dogs</td> <td>46%</td> </tr> <tr> <td>Cats</td> <td>25%</td> </tr> <tr> <td>Fish</td> <td>21%</td> </tr> <tr> <td>Hamsters</td> <td>8%</td> </tr> </tbody> </table>	Pet	Percentage	Dogs	46%	Cats	25%	Fish	21%	Hamsters	8%
Pet	Percentage										
Dogs	46%										
Cats	25%										
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REPRESENTING DATA – Videos 392/393



<p>2 Quantitative(number) Data that is numbers Discrete or continuous</p>	<p>Qualitative (worded) Data that in word. Eg. people's favourite colour.</p>
<p>3 Discrete Data that can only take certain values.</p>	<p>Continuous Data that can take any value within a range. Eg. height.</p>

SCATTER GRAPHS - Videos 453/454

1	Causality	When one variable influences another variable
2	Line of best fit	A straight line that best represents the data on a scatter graph
3	Positive, Negative or No Correlation	

TWO WAY TABLES- Videos 422/423

These are used to show how data falls into 2 different categories. For example gender and favourite sport to watch

What is your favorite sport to watch on television?			
	Football	Basketball	Baseball
Males	40	22	15
Females	12	16	45
Total	52	38	60

A two-way table divides data into groups in rows going across and columns going down the table

Vocabulary

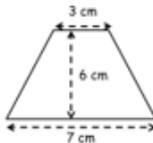
1	Data handling cycle	1) Specify the problem/ pick hypothesis 2) Collect data 3) Process the data and represent on a graph 4) Interpret and discuss the results
2	Correlation	The relationship between different sets of data.
3	Line of best fit	Shows the general direction a group of points seems to follow.
5	Frequency	The number of times something occurs.

UNIT 5F – EQUATIONS, INEQUALITIES AND SEQUENCES

EQUATIONS- Videos 217

1	Solving one-step and two-step equations	Using inverse (opposite) operations to find out a missing number. Example 1: $x + 6 = 11$ (subtract 6) $x = 5$ Example 2; $3x - 2 = 10$ (add 2) $3x = 12$ (divide by 3) $x = 4$
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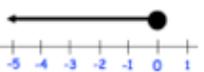
USING FORMULAE- Videos 287

1	Substitute numbers into a formula	Eg. Substitute numbers into the formula for the area of a trapezium:  $\frac{(a + b)h}{2} = \frac{(3 + 7) \times 6}{2} = 30$
2	Rearranging formula	Make a the subject of the formula $b = 5a + 21$ $\begin{array}{r} -21 \\ b - 21 = 5a \\ \hline \end{array}$ $\begin{array}{r} +5 \\ \frac{b - 21}{5} = a \end{array}$

SOLVING INEQUALITIES- Videos 269/270/271/272

1. Solve inequalities $\begin{array}{r} -3 \leq 2x - 1 \leq 5 \\ +1 \quad +1 \quad +1 \\ \hline -2 \leq 2x \leq 6 \\ \frac{-2}{2} \leq \frac{2x}{2} \leq \frac{6}{2} \\ \hline -1 \leq x \leq 3 \end{array}$	2. Find all the integer solutions which satisfy this inequality: $-1 \leq x \leq 3$ <p style="text-align: center; font-weight: bold;">-1, 0, 1, 2, 3</p>
3. Solve with unknown both sides $\begin{array}{r} 4m - 3 < 2m + 6 \\ \frac{-2m}{2m - 3} < \frac{-2m}{+6} \\ \hline \frac{-2m}{2m} < \frac{9}{2} \\ \hline m < \frac{9}{2} \end{array}$	

INEQUALITIES- Videos 266/267/268

1	Greater than (>) Less than (<)	Greater than or equal to (≥) Less than or equal to (≤)
2	Representing inequalities on a number line	$x > 1$  $x \leq 0$ 
Inequalities on a number line	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>An open circle means that the value is not included:</p> $x > 2$ x is greater than 2  </div> <div style="text-align: center;"> <p>A filled in circle means that the value is included:</p> $x \geq 3$ x is greater than or equal to 3  </div> </div>	

Vocabulary

1	Equation	is an expression equaling another. Eg) $3b + 2 = 2d$
2	Substitution	Replace letters with numbers.
3	Formulae	Show the relationship between two or more variables
4	Inverse	The reverse of something else.

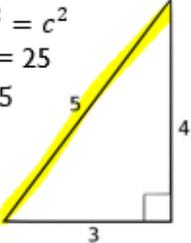
UNIT 5H – ANGLES AND TRIGONOMETRY

Properties of Quadrilaterals/ Interior and Exterior Angles of a Triangle – Videos 824/825/562/563

SPECIAL QUADRILATERALS (4 sided polygon) - Properties			
1	Square		4 equal sides 4 right angles 2 pairs of parallel sides Diagonals cross at right angles 4 lines of symmetry Rotational symmetry order 4
2	Rectangle		2 pairs of equal sides 4 right angles 2 pairs of parallel sides 2 lines of symmetry Rotational symmetry order 2
3	Rhombus		4 equal sides 2 pairs of equal angles 2 pairs of parallel sides Diagonals cross at right angles 2 lines of symmetry Rotational symmetry order 2
4	Parallelogram		2 pairs of equal sides 2 pairs of equal angles 2 pairs of parallel sides 0 lines of symmetry Rotational symmetry order 2
5	Kite		2 pairs of equal sides 1 pairs of equal angles 2 pairs of parallel sides Diagonals cross at right angles 1 lines of symmetry Rotational symmetry order 1
6	Trapezium		1 pair of parallel sides
7	Isosceles Trapezium		1 pair of parallel sides 1 pair of equal sides 2 pairs of equal angles 1 lines of symmetry Rotational symmetry order 1

2	Sum of interior angles	For an n-sided polygon Sum of interior angles = $180 \times (n - 2)$
3	Sum of exterior angles	For all polygons: Sum of exterior angles = 360
4	Regular polygons	<i>Exterior angle</i> = $360 \div \text{number of sides}$ <i>number of sides</i> = $360 \div \text{Exterior Angle}$ <i>Interior angle</i> = $180 - \text{Exterior angle}$

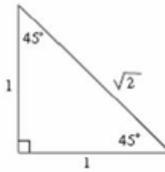
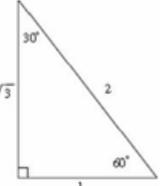
PYTHAGORAS – VideoSs 498/499

1	Finding the hypotenuse (longest side) $a^2 + b^2 = c^2$	$a^2 + b^2 = c^2$ $3^2 + 4^2 = 25$ $\sqrt{25} = 5$ 
2	Finding a shorter side	$a^2 = c^2 - b^2$
3	Proving with Pythagoras	If $a^2 + b^2 = c^2$ Then Triangle is RIGHT ANGLED

Vocabulary

1	Hypotenuse	the longest side of a right-angled triangle, opposite the right angle.
2	Interior	the inner part of something; the inside
3	Exterior	forming, situated on, or relating to the outside of something
5	Polygon	a plane figure with at least three straight sides and angles, and typically five or more

TRIGONOMETRY – Videos 508/509/51

1	Sine	$\sin \theta = \frac{O}{H}$	$\theta = \sin^{-1} \frac{O}{H}$			
	Cosine	$\cos \theta = \frac{A}{H}$	$\theta = \cos^{-1} \frac{A}{H}$			
	Tangent	$\tan \theta = \frac{O}{A}$	$\theta = \tan^{-1} \frac{O}{A}$			
2	Exact Values for Angles in Trigonometry			 		
	θ	0°	30°	45°	60°	90°
	Sin θ	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1
	Cos θ	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0
	Tan θ	0	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$	

UNIT 13F – PROBABILITY

ESTIMATED MEAN/MEDIAN FROM A TABLE–Videos

351/352/353/354/364/357/361

1	Estimate outcomes	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr style="background-color: #f2f2f2;"> <th>Colour</th> <th>Probability</th> </tr> </thead> <tbody> <tr><td>Blue</td><td>$\frac{1}{2}$</td></tr> <tr><td>Yellow</td><td>$\frac{1}{4}$</td></tr> <tr><td>Red</td><td>$\frac{1}{8}$</td></tr> <tr><td>Green</td><td>$\frac{1}{8}$</td></tr> </tbody> </table>	Colour	Probability	Blue	$\frac{1}{2}$	Yellow	$\frac{1}{4}$	Red	$\frac{1}{8}$	Green	$\frac{1}{8}$												
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		We calculate an estimate using: probability × number of tries In 20 spins, we would expect: Yellow → $\frac{1}{4} \times 20 = 5$ 5 yellows																						
2	Relative Frequency	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr style="background-color: #f2f2f2;"> <th>Item</th> <th>Frequency</th> <th>Relative frequency</th> </tr> </thead> <tbody> <tr><td>1</td><td>4</td><td>4/20 (or 20%)</td></tr> <tr><td>2</td><td>5</td><td>5/20 (or 25%)</td></tr> <tr><td>3</td><td>5</td><td>5/20 (or 25%)</td></tr> <tr><td>4</td><td>2</td><td>2/20 (or 10%)</td></tr> <tr><td>5</td><td>4</td><td>4/20 (or 20%)</td></tr> <tr style="background-color: #f2f2f2;"><td>Total</td><td>20</td><td></td></tr> </tbody> </table>	Item	Frequency	Relative frequency	1	4	4/20 (or 20%)	2	5	5/20 (or 25%)	3	5	5/20 (or 25%)	4	2	2/20 (or 10%)	5	4	4/20 (or 20%)	Total	20		
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Total	20																							
3	Independent & non-independent events	<div style="border: 1px solid black; padding: 5px;"> <p>is it possible for the events to happen in any order?</p> <p>NO → Dependent</p> <p>YES ↓</p> <p>does one event in any way affect the outcome (or the odds) of the other event?</p> <p>NO → Independent</p> <p>YES ↓</p> <p>Dependent</p> </div>																						

4	Successive independent events	What is the probability of 2 heads on 2 successive throws $P(h) \times p(h) = 0.5 \times 0.5 = 0.25$
5	Successive dependent events	
5	And Or Rule	And: multiply × Or: add +
6	Conditional probability	Probability which depends on a <u>previous</u> event. Eg if I choose a card but don't replace it and then choose another, the probability will change.

CALCULATING PROBABILITY/RELATIVE FREQUENCY/SAMPLE SPACE- Videos

359/356/357

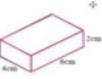
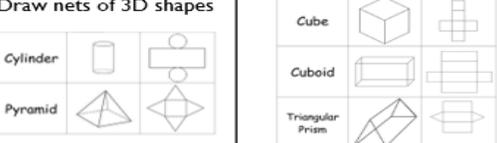
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1	Theoretical Probability	$\frac{\text{Number of Favourable Outcomes}}{\text{Total Number of Possible Outcomes}}$																																																	
2	Relative Frequency	$\frac{\text{Number of Successful Trials}}{\text{Total Number of Trials}}$																																																	
3	Sample Space	The set of all possible outcomes of an experiment. <table border="1" style="width: 100%; border-collapse: collapse; text-align: center; margin-top: 5px;"> <tr><td>+</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr> <tr><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr> <tr><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr> <tr><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr> <tr><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td></tr> <tr><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td></tr> </table>	+	1	2	3	4	5	6	1	2	3	4	5	6	7	2	3	4	5	6	7	8	3	4	5	6	7	8	9	4	5	6	7	8	9	10	5	6	7	8	9	10	11	6	7	8	9	10	11	12
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Vocabulary

1	Probability	The extent to how likely something is to occur.
2	Mutually Exclusive	Events are mutually exclusive if they cannot happen at the same time .

UNIT 17F – PERIMETER, AREA AND VOLUME 2

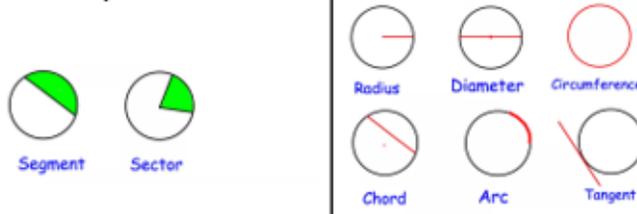
 SURFACE AREA OF PRISMS— Videos
585/584

1	Find the surface area of cubes & cuboids	Find the area of each surface and add together. $Surface\ Area = 2lw + 2lh + 2wh$
2	Find the surface area of triangular prisms & cylinders 	$Cylinder = 2\pi rh + 2\pi r^2$ $Triangular\ prism = bh + 2ls + lb$
3	Draw 3D shapes on isometric shapes 	
4	Draw nets of 3D shapes 	

 SURFACE AND VOLUME – Videos
587/588

1	Surface area sphere 	$s/a = 4\pi r^2$
2	Surface area cone 	$Full\ surface\ area = \pi r l + \pi r^2$ $Curved\ surface\ area\ only = \pi r l$ REMEMBER: sometimes you may need to calculate the slant of the cone (l) using Pythagoras.
3	Volume Pyramid 	$\frac{1}{3} \times (base\ area) \times height$

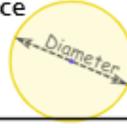
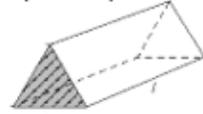
 CIRCUMFERENCE AND AREA OF A CIRCLE Videos
534/535/539/540

1	Know the parts of a circle 	Parts of a Circle Radius, Diameter, Circumference, Chord, Arc, Tangent
2	Area & circumference of a circle	$A = \pi r^2$ $C = \pi d$
3	Area & perimeter of a semicircle	$A = \frac{\pi r^2}{2}$ $p = \frac{\pi d}{2} + d$
4	Area of a sector & arc length	$A = \frac{angle}{360} \times \pi r^2$ $Arc\ length = \frac{angle}{360} \times \pi d$

Vocabulary

1	Perimeter	The distance around the outside of a shape
2	Volume	the amount of space that a substance or object occupies
3	Surface area	The surface area of a solid object is a measure of the total area that the surface of the object occupies

AREA AND VOLUME OF CIRCLES AND SECTORS – Videos 544/546/571

1	Circle (Area) $A = \pi r^2$ 	Circumference $C = \pi \times d$ 
2	Area & perimeter of a semicircle	$A = \frac{\pi r^2}{2}$ $p = \frac{\pi d}{2} + diameter$
3	Volume of any regular Prism 	Area of the cross section (shaded) x length
4	Area of a sector & arc length	$A = \frac{angle}{360} \times \pi r^2$ $Arc\ length = \frac{angle}{360} \times \pi d$

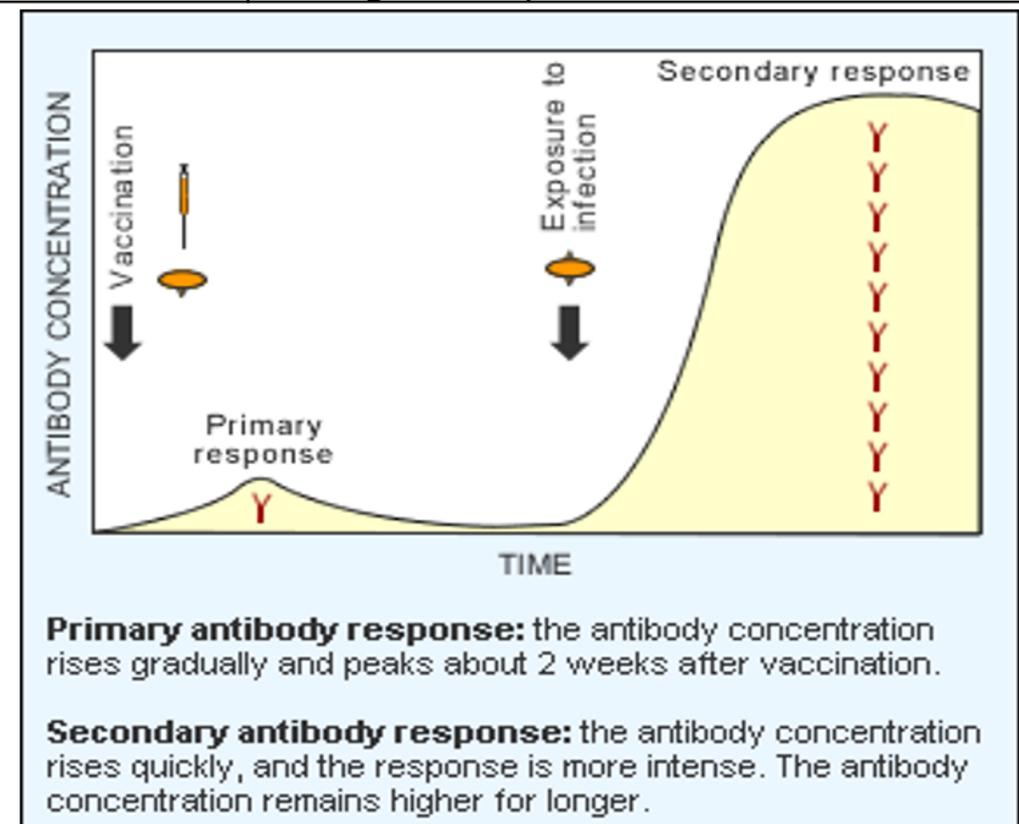
Key Terms

Knowledge Organiser – Infection and Response

Diagrams

Infectious	Describes a pathogen that can easily be transmitted, or an infected person who can pass on the disease.
Vector	An animal that spreads a communicable disease.
Antibiotic	A group of medicines, first discovered by Alexander Fleming, that kill bacteria and fungi but not viruses.
Chitin	A polymer made from sugars that forms the cell walls of fungi and the exoskeleton of insects.
Hyphae	Branching filaments of a fungus that spread out.
Malaria	A communicable disease, caused by a protist transmitted in mosquitos, which attacks red blood cells.
Insecticide	A chemical that kills insects.
Lysozymes	Antibacterial enzymes found in your tears to prevent eye infections.
Cilia	Tiny hair-like projections from ciliated cells that waft mucus out of the gas exchange system.
Antigen	A protein on the surface of a pathogen that your antibodies can recognize as foreign.
Antitoxin	A protein produced by your body to neutralize harmful toxins produced by pathogens.
Vaccine	A medicine containing an antigen from a pathogen that triggers a low level immune response so that if you become infected later your body can respond more quickly to the pathogen.
Antiseptic	A substance applied to the skin or another surface to destroy pathogens.
Anaesthetic	A drug that stops all pain sensation and can be local or general.
Efficacy	How effective a drug is.

Double blind trials	A medical experiment in which the patient and doctors do not know who has been given the drug and who has been given the placebo.
Placebo	A medicine that has only psychological effects.
Phagocytes	A type of white blood cell that engulf pathogens.
Lymphocytes	A type of white blood cell that produce antibodies.
Antibodies	Highly specific Y-shaped proteins that are produced by the immune system to help stop intruders from harming the body.



History

Early periodic tables arranged in order of **atomic weight**

☹ Some elements were in the wrong groups so didn't follow the pattern



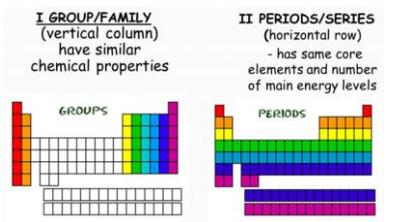
Mendeleev **left gaps** for undiscovered elements.

☺ The elements were discovered that filled the gaps and proved him right.

☺ **Isotopes were discovered** which explained why order based on weight didn't work.



Modern periodic table – order of **atomic (proton) number**.
Elements with similar properties in columns (**groups**).
Elements in same group have the same number of electrons in their outer shell and so have similar chemical properties.



Metals vs Non-metals

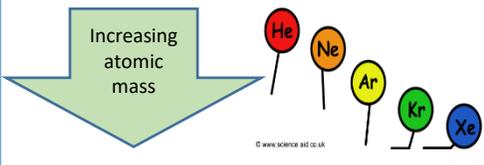
Non-metals: Many electrons in outer shell so form **negative ions**.
Low melting and boiling points.

										Metal			Metalloid			Nonmetal				
H																	He			
Li	Be											B	C	N	O	F	Ne			
Na	Mg											Al	Si	P	S	Cl	Ar			
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr			
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe			
Cs	Ba	La-Ce	Hf	Ta	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn				
Fr	Ra	Ac-Th																		

Metals: Few electrons in outer shell so form **positive ions**.
Hard, high melting and boiling points.

Group 0

Noble gases.
Unreactive (due to full outer shell)

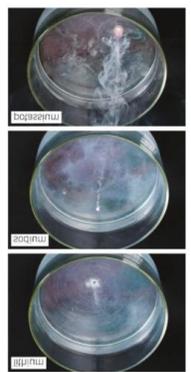


Periodic Table of the Elements

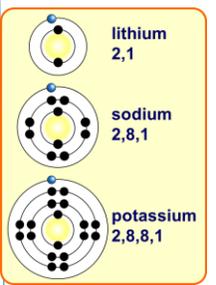
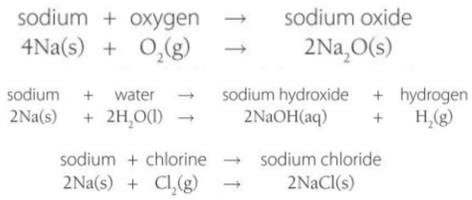
C2 Periodic Table

Group 1

Alkali Metals
Very reactive (due to single electron in outer shell)



- Metals
- React with oxygen to form **oxides**
- React with water to form the **hydroxide and hydrogen**
- React with chlorine to form **chlorides**



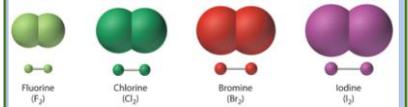
Alkali metals get **MORE reactive**

The Periodic Table of Elements

Group 7

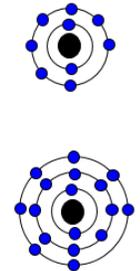
Halogens
Very reactive (due to having 7 electrons in outer shell)

- Non- metals
- Exist in pairs as molecules (diatomic molecules)



- React with metals to form white solid crystals
- React with non-metals to form small molecules

Halogens get **MORE reactive**



Key Terms

Knowledge Organiser – Bonding, structures and the properties of matter

Diagrams

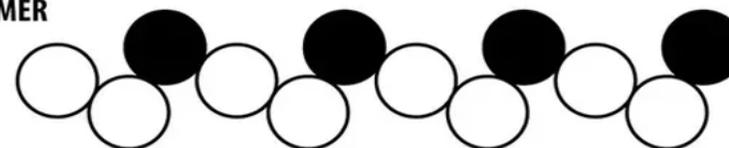
Giant Lattice	Ionic substances are made up of a giant lattice of positive and negative ions in a regular structure.
Ionic bonding	The electrostatic attraction between positive and negative ions
Molecule	Particle made from atoms joined together by covalent bonds
Covalent bond	Two shared electrons joining atoms together
Intermolecular forces	Weak forces between molecules
Polymer	Long chain molecule made from joining lots of small molecules together by covalent bonds
Monomer	The building block (molecule) of a polymer
Delocalised	Free to move around
Metallic bonding	The attraction between the nucleus of metal atoms and delocalized electrons
Malleable	Can be hammered into shape
Alloy	A mixture of a metal with small amounts of other elements, usually other metals
States of matter	These are solid, liquid and gas
Fullerenes	Family of carbon molecules each with carbon atoms linked in rings to form a hollow sphere or tube
Catalyst	Substance that speeds up a chemical reaction but is not used up in it

Structure of Monomers and Polymers

MONOMER

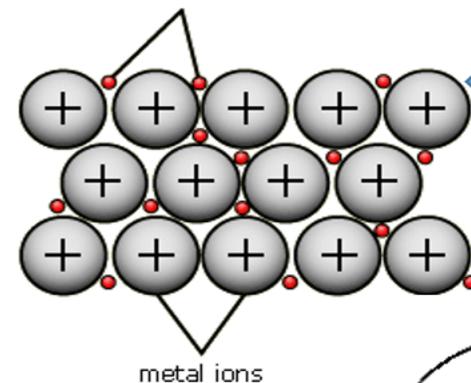


POLYMER



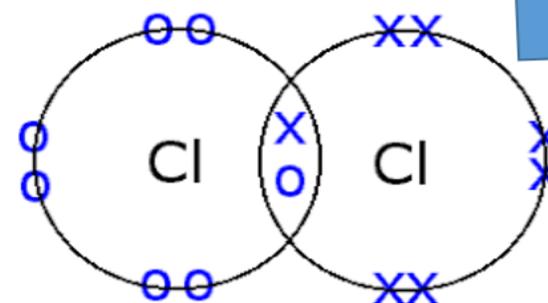
A polymer is a long-chain molecule made up of a repeated pattern of monomers.

free electrons from outer shells of metal atoms

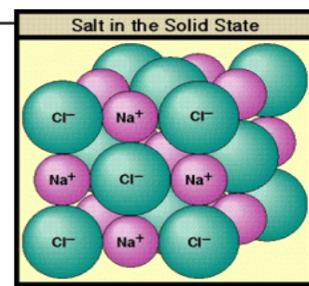
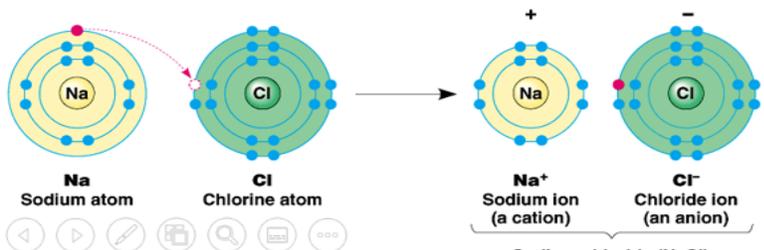


Metallic structure

Covalent bonding

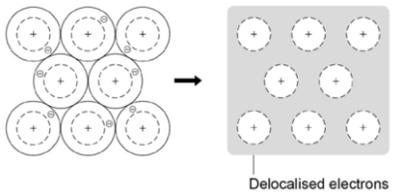


Ionic bonding and structure



Metallic bonding

Metals LOSE ELECTRONS to form POSITIVE IONS

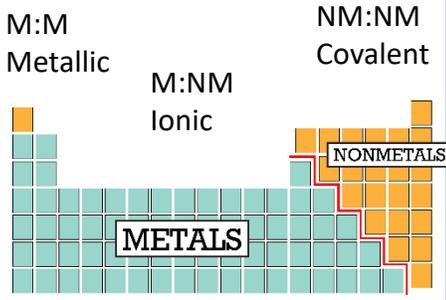


GIANT structures of atoms in a REGULAR pattern

Delocalised electrons are free to move.

What is a metallic bond?
Sharing delocalised electrons – STRONG metallic bonds.

Which type of bonding is it?



Ionic bonding

Metals LOSE ELECTRONS to form POSITIVE IONS
Non-metals GAIN ELECTRONS to form NEGATIVE IONS

Electrons transferred from metal to non-metal



Ions have electronic structure of a noble gas

What is an ionic bond?
STRONG electrostatic force of attraction between oppositely charged ions

How do we quickly work out the charges on ions?

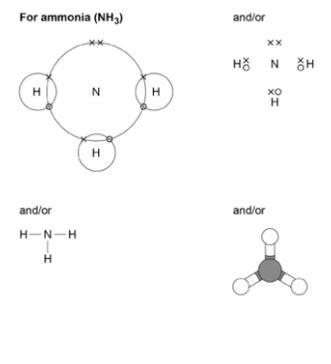
Group	Electrons in outer shell	Charge on ion
1	1	1+
2	2	2+
6	6	2-
7	7	1-

C3 Structure and Bonding

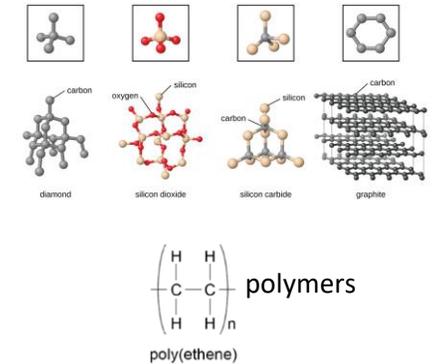
Covalent Bonding

Two non-metals will SHARE pairs of electrons
STRONG bond formed.

Small molecules
A small group of atoms sharing electrons



Giant Structures
Many atoms sharing electrons



Limitations of these models

Model	Limitations
Dot and cross	Looks like electrons aren't identical Electrons look like they are in fixed positions
Displayed formula	Doesn't show true shape of the molecule
Ball and stick	Can attempt to show 3D shape but doesn't show electrons

Properties of Metallic Substances

Metals have high melting and boiling points because...

...they are **giant structures** of atoms with **strong metallic bonding**

Can be bent or shaped because...

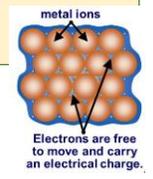
...atoms are arranged in **LAYERS** which can **SLIDE** over each other

Alloys are harder than pure metals because...

Alloys are a mixture of two or more elements, at least one of which is a metal

...the layers are **DISTORTED** so can't slide over each other

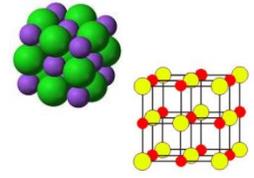
Metals are good conductors of electricity and thermal energy because...



...the **electrons are free** to move and carry thermal energy and charge

Properties of Ionic Substances

Ionic compounds have high melting and boiling points because...



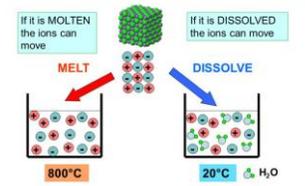
...they are giant structures of atoms (giant ionic lattice) with **strong electrostatic forces** of attraction in **ALL DIRECTIONS** between oppositely charged ions.

A large amount of **energy** is needed to break the many strong bonds.

Only conduct electricity when melted or dissolved in water because...

...the **ions are free** to move and so charge can flow.

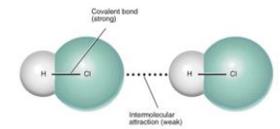
As ionic compounds are made of CHARGED IONS, they can CONDUCT ELECTRICITY but ONLY if the ions can MOVE.



C3 Structure and Bonding

Small molecules

Small molecules have relatively low melting and boiling points because...



...intermolecular forces are overcome on melting and boiling and these are weak forces.

The bigger the size of the molecule the higher the melting and boiling point because...

...intermolecular forces increase with the size of the molecules.

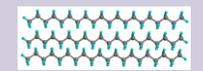
Don't conduct electricity because...

...the molecules have **no overall electric charge**.

Properties of Covalent substances

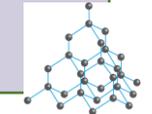
Giant Structures

Polymers are solids at room temperature because...



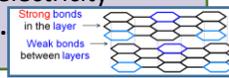
...intermolecular forces increase with the size of the molecules and polymer molecules are **very large**.

Diamond is very hard, has a very high melting and boiling point and doesn't conduct electricity because...



...each carbon is bonded to **4** other carbons by **strong covalent bonds**. There are **no free electrons**.

Graphite is very hard, has a very high melting and boiling point and does conduct electricity because...

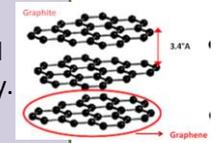


...each carbon is bonded to **3** other carbons by **strong covalent bonds**. It forms **layers of hexagonal rings** with no covalent bonds between layers. There are **free electrons**.

Giant covalent compounds have high melting and boiling points because...

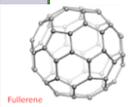
...all of the atoms linked by **strong covalent bonds**.

Graphene is strong, light and an excellent conductor of thermal energy and electricity because...



...it is a single layer of graphite so has **free electrons**.

Fullerenes (e.g. carbon nanotubes) are extremely strong and are excellent conductors of thermal energy and electricity because...



The physical landscape of Russia



Year 9 Russia

Russia can be divided into several vast physical regions.
 The Ural Mountain range splits Russia into two – it runs north to south from the Arctic Ocean into Kazakhstan.
 The North European **Plain** lies west of the Urals and the Siberian Plain to the east.



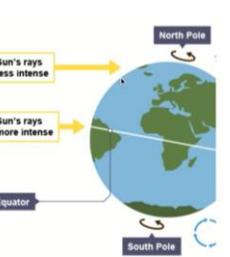
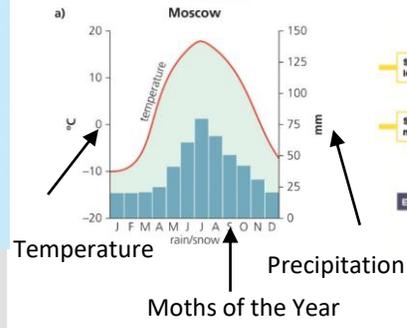
In the east part of Russia the Kamchatka region is a very volcanic region, with 70 volcanoes forming the spine of the **peninsula**.



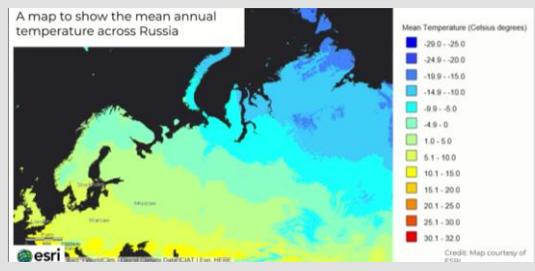
Most of the coastline of Russia lies along waters that are frozen for many months of the year. As a result Russia has few ocean ports that are free of ice all year round.



The West Siberian Plain is a huge lowland which stretches 1,600km across and 2,400km from north to south. This is the largest plain in the world. It is a vast frozen area in winter and huge marshland in summer.



What is the climate of Russia?



Most of Russia experiences a **continental climate**. This is characterised by 2 main seasons : long dark cold winters with brief, often warm summers. Russia experiences a very wide range of average temperature between summer and winter depending on location.

Factors that influence temperature
 Latitude- The higher the latitude the colder the climate this is because the sun is at a lower angle meaning heat energy is spread over a larger surface area.

Factors that influence precipitation (rain, hail, snow, sleet)
 Prevailing winds- Westerlies pick up moisture over the Atlantic and exhaust the moisture over the land meaning rainfall decreases as you move east.

The Taiga Biome

Animals and plants have to adapt (alter) to survive very cold temperatures, lack of sunlight and short days in the winters.



ptarmigans are well-insulated against the cold temperatures, they have thick downy feathers to keep them warm.



Caribous are migratory and move over large distances at different points of the year to find food (mosses).

Plant adaptations to the taiga: coniferous trees

Adapted to snow: cone shaped which helps the trees to shed heavy snowfall

Adapted to the short growing season: trees are evergreen and do not shed their leaves in the winter, allowing them to photosynthesise when temperatures rise above 3°C

Adapted to the climate: needles rather than flat leaves reduce the surface area of the leaves, reducing water loss

Adapted to the lack of sunlight: roots are shallow but wide, which supports the trees and allows them to collect nutrients over a large distance

Coniferous trees such as pine, fir and spruce are narrow and form a dense canopy

Biomes in Russia

4 Biomes (large ecosystems) can be found in Russia

-**Temperate Forest** . Trees are deciduous (they lose their leaves in winter).

-**Steppe Temperate Grassland**. Vegetation (trees/ plants) is low in height and sparsely populated.

-**Tundra** Trees are densely populated near lakes and rivers. Generally vegetation are shrubs and grasses and are low in height.

Taiga Forest . Trees are coniferous (don't lose their leaves) . Vegetation is dense and tall.

Threats to the Taiga

Deforestation (cutting down of trees) to allow;

- Hydroelectric power
- Gas and oil extraction
- Logging for timber (wood)
- Mineral extraction e.g. Nickel, Iron and Gold.
- Paper /pulp
- Tar Sands – digging up the ground to get to the sands beneath.

- + economic development
- + invest money on infrastructure
- +employment opportunities (jobs)
- environmental impacts – washes nutrients out of soil , damages animal habitats.



Opportunities and challenges of Mineral extraction (mining) in the Tundra Biome

Norilsk City.
 -Found in the north of Russia
 -120,000 people live there.
 - It is the 2nd biggest city on the Arctic Circle
 -Covered in **permafrost**(permanently frozen ground)
 -Largest amounts of Nickel in the world can be found here- which is mined and sold.

Challenges
 -**Inaccessibility** (difficult to get there/ transport goods)
 -Difficult to build and maintain **infrastructure** (structures and road networks)
 -Extreme cold temperatures
 -Limited day light hours
 -Mining creates environmental damage through industrial waste / fuel spills.

Opportunities
 +Plenty of space for development
 +Provides economic opportunities to support economic development
 +Contributes to the **Gross Domestic Product** (amount of money a country makes)
 +Provides **employment opportunities** (jobs)



Population Distribution and Density

There are about 144 million people living in Russia.
 The population of Russia is unevenly **distributed** (spread).
Population density = the number of people living in a given area e.g. square kilometre.

Densely populated =high population density
Sparsely populated = low population density



Russia is by far the largest country in the world by area, but is ranked only ninth largest worldwide by population.

Russia is one of the most sparsely populated countries in the world.

70% of Russia's population live in the European part of the country , west of the Ural Mountains.

People usually choose to live in places that have positive features that make life easy and mean communities can grow. These include
 -rich soils for farming
 -good communication e.g. ports
 -temperate weather conditions
 -land that can be built upon / not extreme land such as mountains.

Russia and economic activity.

-Russia has an abundance of natural resources.
 -Russia produces 20% of the world's natural gas and is the world's leading producer of oil.
 -Russia is self sufficient in all major industrial raw materials.
 -Russia exports steel and aluminium
 -20% of the worlds timber (wood) comes from Russia.
 -60% of Russia's **GDP** is supported by natural resource exportation (selling goods to other countries)
 However the vastness of the country along with its harsh physical geography creates problems for economic growth. Much of the natural resources are found in the north and Siberia.

Rank	Country	Crude oil production: barrels per day
1	Russia	10 550 000
2	Saudi Arabia	10 460 000
3	USA	8 853 000
4	Iraq	4 452 000
5	Iran	3 981 000
6	China	3 679 000
7	Canada	3 106 000
8	United Arab Emirates	2 924 000
9	Kuwait	2 515 000
10	Brazil	2 277 000

-Russian transportation has to move raw material vast distances from the empty areas in the east to the manufacturing cities in the west.
 Russia depends on railways including the Trans- Siberian rail road.

Economic sector	% of jobs
Primary	9.4
Secondary	27.6
Tertiary	63

Knowledge Organiser: American West

Tribe A distinct community of Indians for example the Sioux	Great Plains Large grassland in the West of America, home of the Plains Indians.	Social relating to society/group/community/country you live in.	Tipi Home of the plains Indians, made out of Buffalo Hide (skin).
Frontier a line or border separating two countries.	Ceremonies a formal religious or public occasion, especially one celebrating a particular event, achievement, or anniversary.	Nomadic When a group of people move around and do not settle to live in one place.	Polygamy When a man has more than one wife.
Chief leader of a tribe/ band but not elected. The tribe did not have to follow his orders.	Migration The movement of people from one area to another.	Mormon A branch of Christianity which was started by Joseph Smith in 1830.	Manifest Destiny Idea it was God's plan that white Americans should settle over all of America.
Missionary a person sent on a religious mission, to convert people to the Christian faith.	Prairie a large open area of grassland, especially in North America.	Cannibalism When one human eat another human such as the Donner party.	Reservation An area of land to live on given to the Indian's by the Federal (American) government.

Indian Society

Tribes were made up of bands (10-50 families), they would often meet once/twice a year for the Buffalo hunt.

Chiefs were the leaders of Indian society and they were chosen for their skill (leadership, spiritual, wisdom or fighting).

Famous chiefs include Red Cloud and Sitting Bull. Chiefs had no actual power as everything had to be agreed by the well respected tribal council - these were a group of elders, medicine men and chiefs.

Warrior brotherhoods, were trained young fighters who led the buffalo hunt and went to war. They did not have to follow council orders - which caused problems.



Indian Warfare

Real honour came not from killing but from **counting coup**. This was getting close enough to touch an enemy without being hurt.



Taking scalps of enemies or stealing horses was evidence of success. White people saw scalping this as evidence of Indians being savages.

Indians mainly fought to protect their hunting grounds or to steal horses and not for land. War parties would even run away from a fight if they were losing.



Indian Beliefs

Dances were used when the whole tribe needed to contact the spirits e.g. Buffalo dances.



Some land was sacred, such as the Black Hills to the Sioux - they were burial grounds.



Land was sacred - 'the mother'. They believed it could not be bought or owned by anyone as it belonged to everyone. Farming or mining was seen as disrespectful.

Survival on the Plains

Survival was based on hunting buffalo and the following of their migration across the plains. Survival relied on hunting skills.



The Indians lived a travelling 'nomadic' lifestyle - they constantly moved camps. Living in tipis allowed them to pack up camp and move within minutes.



Tipis were perfect for the Plains, made from wood and buffalo skin they were warm in winter, cool in summer. Some lived in wooden lodges during winter.

Indians also lived off the land, they were hunter-gatherers - eating wild fruits and berries. They did not farm.



Family life

Each person also had a role equally important as the other. Working together was key to survival on the Plains.

Women (squaws) were responsible the home and families. They also turned buffalo remains into hides and meat.



Men were responsible for hunting, looking after the horses and protecting the bands.



Elders were often members of the tribal council and their opinions were respected.



The role of Horses

Horses were essential to the plains Indians, they were needed to hunt buffalo and for the constant travel.

They also were important for status - men measured wealth with horses, the Comanches had over 8000 horses in a tribe of 3000

Horses were key to warfare and Indians would often raid others to steal horses. Also, horsemanship was a sign of warrior bravery.



forced to leave in 1838 after riots.



The Mormons decide to move West

Following Joseph Smith's murder in 1845, the new leader, Brigham Young, decided the Mormons should move West to the Great Salt Lake Valley. He decided this because; it was isolated, it supposedly had water and farming land, the Mormons could live freely and importantly it was not part of the United States.

The Journey West



The Donner Party

In May 1846, the Donner party, led by Jacob and George Donner, left Missouri for California with 60 wagons and 300 people.



The wagons train was well equipped and they chose to follow the Oregon Trail, however they were more women, elderly and children than usual.



By July 1846, they reached Fort Bridger in the Rocky Mountains and a small group decided to take a 'short cut' using a leaflet (no-one had ever gone this way!)

It proved to be a fatal mistake.



The party got lost and were delayed by a month leading to them reaching the Sierra Nevada mountains late. By then they had lost 4 wagons and 300 cattle, whilst one man murdered another.

They then became trapped in heavy snow storms in the mountains. All the cattle died and the group turned to cannibalism to survive.

Only 46 survived the journey to California after being eventually rescued in January 1847

Impact of reservations on Plains Indians

By the mid 1870s, the government had forced most Indians onto reservations, the Indians were virtually prisoners there which effectively took away their independence.

The reservations were usually lands not wanted by whites. It was not fertile, did not contain minerals and would make survival difficult. These lands were gradually made smaller as whites took over more land.



Living Conditions

Indians were no longer allowed to leave reservations to hunt the buffalo meaning they couldn't independently feed, clothe or shelter themselves. Indians struggled to learn to farm and as the lands were unfertile, most of the crops failed due to droughts, pests and diseases. Indian skills were lost Disease (Flu), alcoholism and depression spread through the reservations

Control

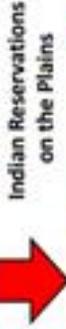
The government removed the power of Indian councils and chiefs by setting up US federal law courts in 1885. This meant that Plains Indians lost the power to govern themselves. Some Plains Indians were bribed into joining the Indian Agency Police to keep order amongst the Indians. Feast, ceremonies and dances were banned to end their spirituality and reliance on medicine men. Christian missionaries were sent to convert

Civilising Indians

Plains Indian children were sent to schools off reservation, if they refused food was cut off. At school they were taught Christianity, punished if they spoke Indian or danced. By 1887 there were over 2020 Indians in 110 boarding schools. The motto was 'Kill the Indian in them, save the man'



Reservations destroyed the remains of the traditional Plains Indian way of life



Indian Reservations on the Plains



• Metta	loving kindness	• Extreme Poverty	inability to meet basic needs for survival.
• Agape	unconditional Love from God	• Relative Poverty	Have the basics and lead a decent live but are in the bottom 20% of their region/area.
• Ahimsa	Doing no harm	• Moderate Poverty	Can meet their basic needs but not much more
• Ahava	giving love in return for nothing. No expectation	• LEDC	Less Economically Developed Countries which are usually the poorest in the world.
• discriminate	to act on prejudice, often negatively against someone	• MEDC	more Economically Developed Countries'- which are wealthier countries generally found in the West
• equality	the state of being equal in rights, status or opportunities	• Middle Way	Living a life of balance. Not Rich but also not Poor.
• ethnicity	the state of belonging to a particular social group which has a common national or cultural tradition	• Sadhu	Buddhists monks and nuns
• Fairtrade	logo applied to products for which the grower/manufacturer has been paid a fair price	• Zakkah	Charity or alms giving in Islam.
• inequality	unfairness, e.g. a difference of opportunity, education, wealth, etc.	• Enlightenment	freedom from the cycle of suffering and the wheel of life for Buddhists.
• injustice	lack of fairness or justice	• Langar	a free meal at the end of Sikh services and ceremonies that anyone can attend. Anyone of any religion, race, financial circumstance etc.
• oppression	cruel treatment over a long time	• justice	fairness; bringing greater equality to the lives of people
• sacred	special; applied to life, we are all special so we are all equal	• race	the separation of humans according to their distinct physical characteristics
• sponsor	a person who contributes money for the welfare of a child or animal or a particular project in a developing country	• developing country	a country deemed to be low or middle income, so that its industrial base is less developed, its infrastructure and services less advanced, and its people poorer in relation to other countries
• poverty	lacking the basic essentials of life so that living each day is difficult; World Health Organization lists these essentials as adequate food, clean water, adequate shelter, good healthcare, good education, good job	• compassion	loving kindness
• Golden Rule	the principle that people should treat others in ways they would want to be treated	• natural disaster	natural event which causes devastation, such as tsunami, earthquake, famine, flood tsunami: huge wave caused by shifts in sea bed (due to a shift of tectonic plates or sudden influx of material from landslide)

Year 9 RE- Wealth and Poverty

Poverty is a lack of the basic essentials for living. The World Health Organisation lists six essentials:

- adequate food
- clean water
- adequate shelter
- good healthcare
- a good education
- a good job.

[Source: World Health Organisation]

In **developing countries**, there is a lot of inequality, so while some people are very rich, many people live in poverty. However, there are many people who live in poverty in wealthy countries like the UK, too.

Different types of poverty

Although there is an absolute level of poverty that applies around the world (currently set at people living on \$1.90 a day or less), poverty is also *relative*. That means that people in the UK who have a lot more than \$1.90 a day to live on are still poor because they aren't able to afford the things that most people in the country can afford. For example, a family in the UK might have a home, even be in work, but still earn very little, whereas a family in a developing country might have a rough shelter, no water or electricity, and work in the fields for many hours each day. Both cases count as poverty.

Each of these is an example of poverty. Can you work out why?

- A family of four who live in a one-room shack without running water or electricity. They have a field to grow crops, which gives them most of what they need to eat.
- A homeless person who sells *The Big Issue*.
- A family in the UK who depend on income support and other benefits.
- A family living in a small village whose income is only £300 per year while the national average is £3500 per year.

There are lots of causes of poverty. In the UK, poverty often comes from having no job or a very low paid one. However, the UK does have a welfare system which helps people without jobs to find work and provides some financial support for them while they are looking. In some developing countries, the facilities are not good – this means that some people have to walk many miles to obtain clean water, or they might only have electricity sometimes and receive no help from the government when they have no money. Some of the things we in the UK take for granted are luxuries elsewhere – we are lucky to have been born in this country. So, in an unequal world, how can we make things better for more people and how can we share our good fortune? What could individuals in the UK do to make life better for some of those in developing countries?

I always try to buy **Fairtrade** items. This way I know that the farmers who grew those things get a decent amount of money for their efforts and they aren't exploited.

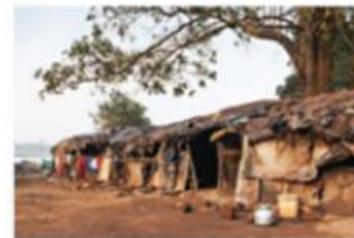
I sponsor a child in Bangladesh. The charity is also paying for school teachers and nurses and is training the local women to make and sell their own handicrafts.

I went out to a very remote part of an African country as a volunteer teacher in a high school. I helped train some teachers as well, so they could help students get better grades. Grades are important, as they lead to better jobs and better pay.

I work for an aid agency, assessing project requests. This includes going to the communities to see what they are asking for and helping them get what they need. Often those communities come back again for more aid, as they get so much confidence from their successful projects.

Christianity and poverty

A lot of religious groups do aid work, which means they help provide resources like food and medicine to people in need – Christian Aid, CAFOD and Tear Fund are just three of the many Christian ones. Christians believe that all humans are made in the image of God, so we are all special. They also believe that God has given us a duty to look after the world (stewardship) and look after each other ('love thy neighbour'). For many Christians this means they have a responsibility to help the poorest people in the world. This is especially true for wealthier Christians as they have the means to be able to do something. Christian aid agencies fund projects that have usually been requested by communities and which allow them to improve the lives of people living there. Examples include building water pipe systems into villages, building schools, funding training for nurses and so on.



▲ Poverty is the lack of basic essentials for living.

Me, My Family and Friends GCSE Foundation Tier French Knowledge Organiser

Key Vocabulary

Les noms

l'amour (m)	love
la barbe	beard
le beau-père	step-father/father in law
la belle-mère	step-mother/mother in law
les cheveux (m)	hair (on head)
le copain / la copine	friend, mate
le demi-frère	half-brother/step-brother
la demi-sœur	half-sister/step-sister
la femme	wife
la fille	daughter
le fils	son
le frère	brother
la grand-mère	grandmother
le grand-père	grandfather
les grands-parents (m)	grandparents
les lunettes (f)	glasses/spectacles
le mari	husband
la mort	death
la naissance	birth
le nom	name/surname
l'oncle (m)	uncle
le / la partenaire	partner
le petit ami	boyfriend
la petite amie	girlfriend
la petite -fille	granddaughter
le petit-fils	grandson
le prénom	first name

les rapports (m)	relationships
le sens de l'humour	sense of humour
la sœur	sister
la tante	aunt
les yeux (m)	eyes

Les adjectifs

aimable	kind
aîné(e)	elder
bavard(e)	chatty/talkative
beau / belle / bel	beautiful
bête	stupid/silly
bouclé(e)	curly
célibataire	single
court(e)	short
égoïste	selfish
fâché(e)	angry
frisé(e)	curly
généreux / généreuse	generous
gentil / gentille	kind/nice
gros / grosse	fat
heureux / heureuse	happy
injuste	unfair
jeune	young
joli(e)	pretty
laid(e)	ugly
long / longue	long
méchant(e)	naughty/nasty

mi-long	medium length
mort(e)	dead
né(e) le...	born on the...
paresseux / paresseuse	lazy
pénible	annoying
raide	straight
séparé(e)	separated
sportif / sportive	sporty
sympa	kind/nice
de taille moyenne	medium height
timide	shy
tranquille	quiet/calm
travailleur / travailleuse	hard-working
triste	sad
unique (fils / fille unique)	only (child)
vieux / vieil / vieille	old

Les verbes

s'appeler	to be called
avoir...ans	to be...years old
se disputer	to argue
dire	to say/tell
s'entendre avec	to get on with
se faire des amis	to make friends
se marier	to get married/to marry
partager	to share
sortir	to go out

Key Ideas

- La composition de ta famille
- Les relations avec ta famille et tes amis
- Les qualités d'un bon ami / d'une bonne amie
- Ce que tu fais avec ta famille et tes amis
- Ton opinion du mariage

Key Phrases

je m'appelle	my name is
j'ai ...ans -	I have ...years (age)
dans ma famille il y a	in my family there is/are
je m'entends avec -	I get on with
je ne m'entends pas avec	I don't get on with
je me dispute avec	I argue with
j'ai les cheveux....	I have hair... (description of hair colour, style etc)
mon père / ma mère est.....	my father/mother is...
mon meilleur ami / ma meilleure amie est...	my best friend (m/f) is...
mes parents sont	my parents are...
un bon ami / une bonne amie est	a good friend (m/f) is....
à mon avis le mariage c'est...	in my opinion marriage is...



Urdu	English	Urdu	English
بچانا استعمال کرنا رابطہ کرنا	To save To use To connect	امیر لوگ طلباء غریب لوگ نوجوان	Rich people... students Poor people Young people
بہتر کرنا بچانا برقرار رکھنا پاشنا	To improve To avoid To maintain To share	سے روزگاری سماجی مسائل فائدے اور نقصانات اثر	Unemployment Social issues Adv & dis adv Impacts
کم کرنا علیحدہ کرنا	To reduce To separate	خاندانی زندگی قریب کرنا	Family life Bring close
مدد کرنا	To help	غلط استعمال	Mistreat
بند کرنا قبول کرنا	To close To accept	صحت مند ناصحت مند	Healthy Unhealthy

Key questions to answer

آپ ٹیکنالوجی میں کیا استعمال کرتے ہیں؟
آپ کے خیال میں ٹیکنالوجی کے کیا فائدے اور کیا نقصانات ہیں؟
آپ کے خیال میں ٹیکنالوجی نے کون سے سنگین مسئلے حل کیے ہیں؟
ٹیکنالوجی تعلیم میں آپ کی کس طرح مدد کرتی ہے؟
ٹیکنالوجی کب اور کیسے شروع ہوئی؟
ٹیکنالوجی کا ثقافت پر کیا اثر پڑا اور کیوں؟
ٹیکنالوجی سے ہماری سماجی زندگی میں کیا تبدیلی آئی؟
ٹیکنالوجی سے ہماری صحت پر کیا اثرات مرتب ہوئے؟



Subtopics

- Modern technology and our Life style.
- Technology use in Education.
- Future of technology
- History of technology
- Technology and culture.
- Use of technology in Pakistan
- Social problems

Key grammar:

- Reasons
- Pros and cons
- Modal verbs
- Comparisons



Vocab for Technology

سماجی نیٹ ورک۔ پیغام۔ متن۔ اشتراک۔ شناخت۔
ہراساں۔ مباحثے۔ گزشتہ۔ خطرات۔ انسٹاگرام۔
ٹوئٹر۔ لپ ٹاپ۔ اسکاٹپ۔ تحقیق۔ سرگرمیاں۔ ڈائون
لوڈ۔ ڈیلیٹ۔ انسٹیپ چیٹ۔ ایپ لوڈ۔ مضحکہ خیز۔ گیمز۔
اشتراک۔ کمپیوٹر۔ تریخ۔ موبائل فون۔ سمارٹ گھڑی۔
کی بورڈ۔ قمیص بجک۔ نظام زندگی۔ سمٹ۔ مرتب۔ سنگین۔
رویوٹ۔ مواصلاتی نظام۔ رابطے برقرار۔ وقت کا ضائع۔
معلومات میں اضافہ۔ جدید تعلیم۔

Question words

کب۔ کیا۔ کہاں۔ کس۔ کیسے۔ کیوں۔

Opinions

میں محبت کرتا ہوں
یہ مجھے پریشان کرتا ہے
اس سے مجھے + تکلیف ہوتی ہے۔
میرے نظر نہیں۔
یہ مجھے تکلیف دیتا ہے
مجھے پسند ہے
یہ میرے لئے اہمیت رکھتا ہے
مجھے پرہیز نہیں

**Module 8
Technology**



Fancy Phrases

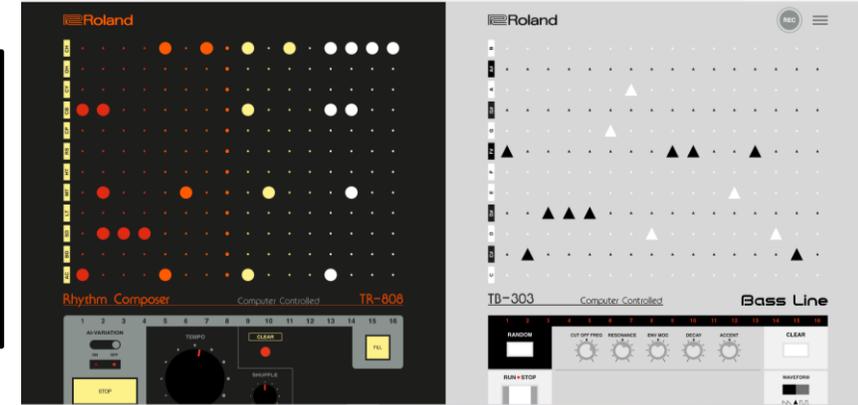
میرے خیال سے ٹیکنالوجی نے دنیا تبدیل کر دی ہے۔
یہ اس وجہ سے ہے کہ دنیا سمٹ گئی ہے۔
میں ٹیکنالوجی کا روزمرہ زندگی میں استعمال۔۔۔۔
مستقبل میں میں چاہوں گا کہ ٹیکنالوجی کا استعمال۔
پچھلے سال میں نے ایک لیا۔۔۔۔۔
ہمارا خاندانی نظام زندگی۔۔۔۔۔
دوستوں اور رشتہ داروں سے۔۔۔
کوئی بات اب چچی نہیں رہ سکتی کیوں کہ

Infinitive	English	Present	Perfect / past I have.../ I did	Imperfect I used to...	Future I am going to...	Conditional I would...
کام کرنا	To work	کام کرتا/تی ہے	کام کرچکا/ چکی	کام کرتا تھا/ کرتی تھی	کام کروں گا/ گی	کام کرتا چاہوں گا/ گی
سیکنا	To learn	سیکتا / سیکھتی ہے	سیکھ چکا / چکی	سیکھتا تھا / سیکھتی تھی	سیکھوں گا / گی	سیکھتا چاہوں گا / گی
استعمال کرنا	To use	استعمال کرتا/ کرتی ہے	استعمال کرچکا / چکی	استعمال کرتا تھا / کرتی تھی	استعمال کروں گا / گی	استعمال کرتا چاہوں گا / گی
لطف اٹھانا	To enjoy	لطف اٹھتا / اٹھتی	لطف اٹھ چکا / چکی	لطف اٹھاتا تھا / اٹھتی تھی	لطف اٹھائوں گا / گی	لطف اٹھاتا چاہوں گا / گی

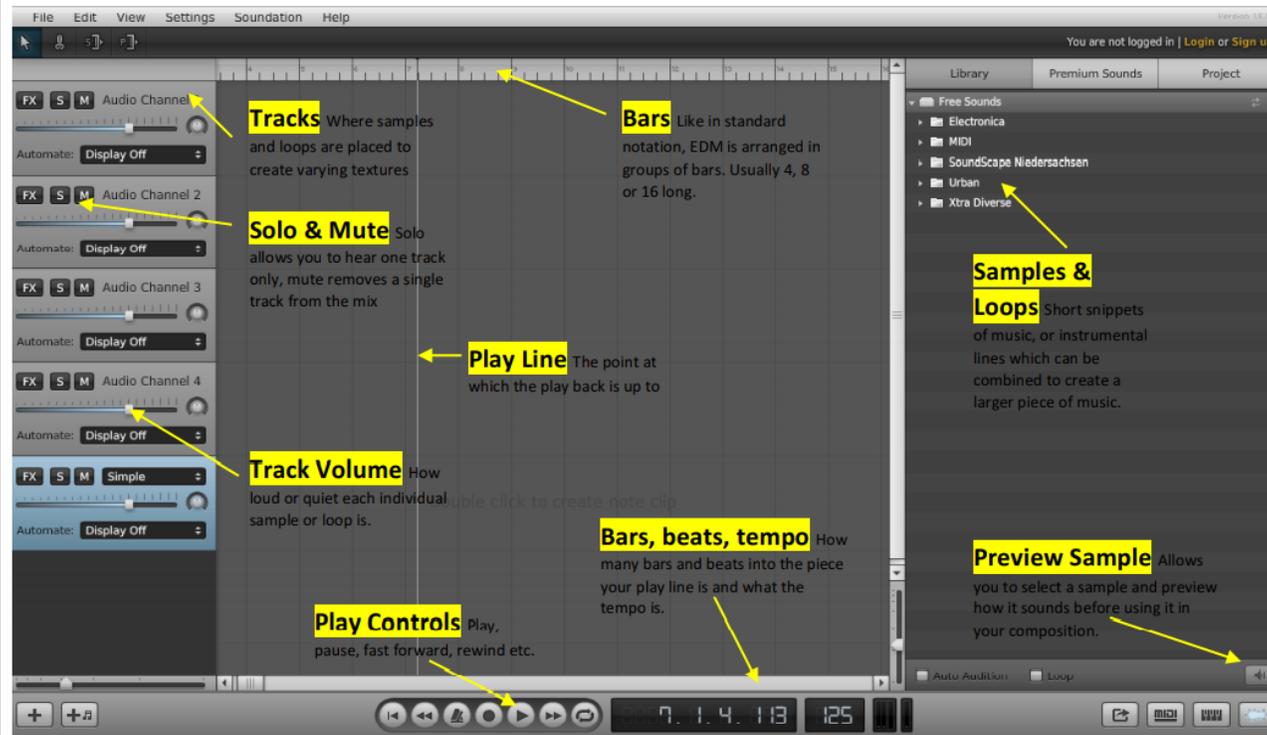
Electronic Dance Music

EDM: Music made from a series of loops and samples which are layered up to make complex textures and structures. EDM can use a vocalist, but is often instrumental.

www.808303.studio online Drum and bass machine:



www.Soundation.com online studio:



Context	
DJ (Disk Jockey)	A disc jockey , often abbreviated as DJ , is a person who plays existing recorded music for a live audience.
Producer	A producer oversees and manages the sound recording and production of a band or performer's music. A producer has many, varying roles during the recording process.
Genres	<p>1970's—Disco Funk, R N B & Hip Hop</p> <p>1980's—New Wave, Techno & Electro</p> <p>1990's—Techno, Drum & Bass, Garage</p> <p>2000's—Dubstep, Grime & Hardstyle</p> <p>2010's—House Revival, Trap & Moombahton</p>

Listening examples:
 Da Funk – Daft Punk
 Sandstorm – Darude
 Scylla – RL Grime
 Alone – Marshmello
 Soundclash – Flosstradamus & Troyboi

Music and Technique	
Sample	Sampling is the reuse of a sound recording in another recording. This could be a melody, drum beat or any other recorded sound.
Beats Per Minute (BPM)	A way of measuring the tempo of a piece of music. Dance music often has a high BPM.
Beat	The beat is the basic measure of time that you would tap your feet to.
Bass-line	The low-pitched instrumental part that gives dance music its drive and groove.
Four to the Floor	A technique where the drummer (or drum machine) just plays four kick drum beats in a bar of four.
Synthesizer	A fully electronic musical instrument that produces audio signals. The synthesizer is often a lead instrument in Dance tracks.

Structure	
Loop	A repeating section of recorded music.
Break	A break is where all the elements of a song (e.g., synth pads, basslines, vocals), <i>except for percussion</i> , disappear.
Drop	A point in a dance track where a sudden change of rhythm or bass line occurs, which typically is preceded by a build section and break.
Intro	The opening section of a piece of music which usually goes before a verse.
Outro (Coda)	The ending section of a piece of music.

Component 1: Learning Aim A: MEDIA PRODUCTS, AUDIENCE & PURPOSE

Media SECTORS

Audio/Moving Image	Print/Publishing	Interactive
<i>Film Trailer</i>	<i>Newspaper</i>	<i>Website</i>
<i>TV Show</i>	<i>Magazines</i>	<i>Mobile Apps</i>
<i>Music Video</i>	<i>Comics</i>	<i>Games</i>
<i>Animation</i>	<i>Brochures</i>	<i>E-Magazines</i>
<i>Radio</i>	<i>Advertisements</i>	<i>Advertisements</i>

PRIMARY & SECONDARY AUDIENCES

The audience that the media producer targets is called the **PRIMARY** audience. This is the audience they intend to target – i.e. Children are the primary audience for Disney

Audiences that engage with the product who are NOT who the media producer intends to target is called the **SECONDARY** audience – i.e. parents are the secondary audience for Disney



SOCIO-ECONOMIC Groups

A - Higher managerial, administrative, professional e.g. Chief executive, senior civil servant, surgeon

B - Intermediate managerial, administrative, professional e.g. bank manager, teacher

C1- Supervisory, clerical, junior managerial e.g. shop floor supervisor, bank clerk, sales person

C2 - Skilled manual workers e.g. electrician, carpenter

D - Semi-skilled and unskilled manual workers e.g. assembly line worker, refuse collector, messenger

E - Casual labourers, pensioners, unemployed e.g. pensioners without private pensions and anyone living on benefits

PURPOSES of Media Products

Producers might create media products for:

Information, Entertainment, Escapism

Profit, Community benefit, Raising Awareness

Critical acclaim, Inspiration, Experimentation

*One way media producers express their target audience is by writing a lifestyle profile, which explains the interests, opinions, behaviours and lifestyle choices of the audience, FOR EXAMPLE:
"Teenage girls living in the inner city who tend to idolize pop stars and buy items that boost their status among their peers."*

Autumn 1 (*Promotional Mix*)

Advertising: Where a business pays to have their product displayed in public spaces / in the media.

Direct Marketing: Where a business pays specialist sales staff to contact customers in order to push a product out to them.

Personal Selling: Where customers in a shop would be approached by sales staff who will help them choose the right product.

Public Relations: Where a business contacts media outlets (newspapers) to share a “newsworthy” story with them in the hope the newspaper will cover it.

Special Offers: Discount cards / money off sales etc. Used to attract more customers.

Autumn 2 (*Types of Market*)

Business to Customer: This is a market where a business will sell their goods direct to the customer. This requires lots of individual purchases for the business to be profitable, and the product must appeal personally to the customer.

Business to Business: This a market where businesses sell directly to one another. Less individual sales need to be made to stay profitable, as Businesses are usually repeat customers. Price and impact on their own operations are more important selling points for business customers.

Push Strategy: Going out an marketing at customers.

Pull Strategy: Making a product seem desirable so customers seek it out.

Spring 1 (*Financial Documents*)

(1) Purchase Order: The document sent from a customer to a supplier, requesting goods.

(2) Delivery Note: The document sent from a supplier to a customer, accompanying goods delivered and stating what they are.

(3) Invoice: Sent from a supplier to a customer outlining what they must pay for goods received.

(4) Receipt: Confirmation from the supplier to the buyer of what has been paid for.

(5) Credit Note: Sent by the supplier, outlining money the customer is owed if goods delivered were faulty.

(6) Statement of Account: Outlines past and outstanding payments from the customer over the past few months.

Spring 2

Revenue: This is used to refer to any money received by an enterprise.

Turnover: This is revenue received within a certain period of time. For example Annual Turnover,

Profit: When a business has made more money than they initially spent.

Loss: When a business has made less money than they initially spent.

Gross Profit: This is the money made by the business once they have sold their products. It is calculated by subtracting the cost of sales from the turnover.

Net Profit Ratio: This gives a percentage of turnover that is kept as net profit.

Summer 1

Fixed Assets: Assets that are not likely to change hands quickly. For example computers in the office, or a delivery van.

Current Assets: Assets that can change hands very quickly e.g. money in the cash register (till) or stock on the shelves of a shop.

Current Liabilities: Liabilities that will have to be paid off quickly e.g. by the end of the financial month. Examples of Current Liabilities include credit cards and overdrafts.

Long-Term Liabilities: Liabilities that can be paid off over a long period of time. Examples of Long-Term Liabilities include mortgages and large sums of money invested into a business in order to help it start up.

Summer 2

Capital: The money needed by a business in order to start up or to expand. This can come from Investors, bank loans and from the retained profits of the business.

Liquidity: This refers to a business’s ability to pay off its debts. If a business has good liquidity then it is able to pay off its liabilities.

Creditor: A business or an individual that an enterprise owes money to.

Debtor: A business or an individual that owes money to an enterprise.

Bankruptcy: When a business is unable to pay off its liabilities and must cease trading.

Promotions and their types

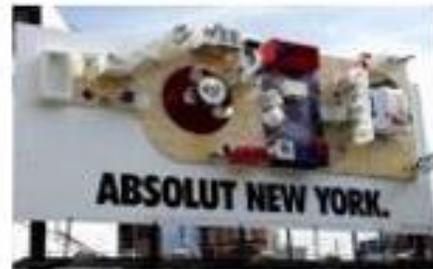
Digital promotions - is the use of one or more forms of electronic media to market or advertise a product or brand.



Promotional objectives; all businesses need to set objectives for these promotional campaigns, some of these include:

1. To raise awareness of a product or service
2. To remind
3. To differentiate
4. To persuade or inform
5. To create a market presence
6. To boost market share

Traditional promotions - It includes television, radio, outdoor billboards, print media, direct mail, bus and taxi sides, events such as festivals/shows/fairs, sponsorship.



How do we know if the campaign is appropriate ?

We look at the key factors that influence the selection of promotional methods.

These could be : how the promotions appeal to the **customer profile**, the **market research** available, how all the methods link together (for example a **mix of digital** and **traditional** promotions).

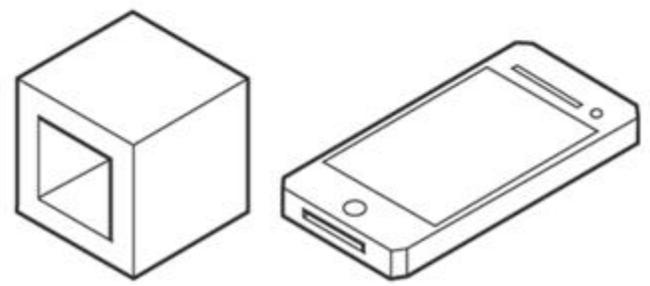
Knowledge Organiser: Year 9 Graphics Skills

Isometric

Isometric drawings, sometimes called isometric projections, are a good way of showing measurements and how components fit together. Unlike perspective drawings, they don't get smaller as the lines go into the distance.

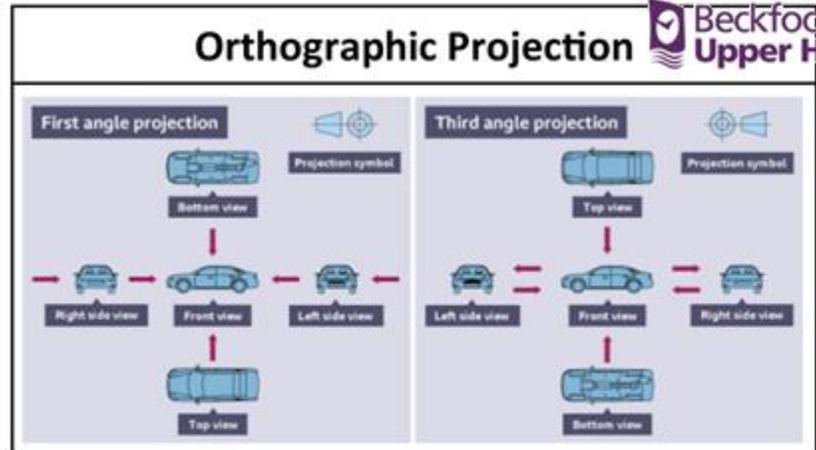
There are three main rules to isometric drawing:

- horizontal edges are drawn at 30 degrees
- vertical edges are drawn as vertical lines
- parallel edges appear as parallel lines



Isometric drawings are used to show a graphical representation of a 3D object. They are used by architects and engineers to communicate their ideas to the client and manufacturer, showing the product or design to scale.

Conversion			
	1m	0.1m	0.01m
	100cm	10cm	1cm
	1000mm	100mm	10mm



Two Point Perspective

Draw a horizon line, and place two vanishing points along it.

Draw a vertical line that will be the edge closest to you. Then draw the guidelines for the roof and bottom of the building.

Distance is tricky: divide the bottom line in half, and then in half again, and then in half again. This will make it seem as if equal-sized buildings are next to each other.

Now draw in guidelines to make other buildings on the block. Remember, every non-vertical line must converge on one of the two vanishing points.

Finally, erase the guidelines that you don't need, and get ready to add windows, cars, people, and what-ever else fills your imagination

The finished illustration should be rendered applying the Tonal concept of mid, light and dark



1. Experiment with a range of mark making techniques in pen and pencil

2. Explore the quality of line and mark making using different drawing techniques.



3. Complete a colour theory A3 sheet using block paints.

4. Experiment with different mark making, blending, and layering with pencil techniques



5. Apply colour theory knowledge and blending techniques to new islamic design idea.



6. Enlarge a section of Islamic design and trace onto mount board. Outline the pattern using string and glue.



7. Complete an Islamic tile demonstrating accurate rotation and printing skills.



LO4: Know how food can cause ill health

AC4.1 Food-related causes of ill health

Microbes- are tiny micro-organisms that can contaminate food and spoil it, causing ill health. The micro-organisms discussed on this page are bacteria, yeasts and moulds

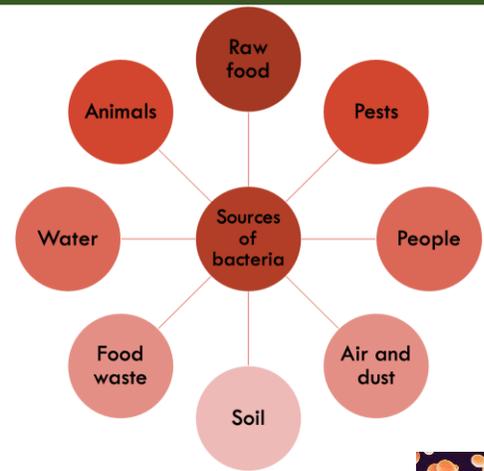
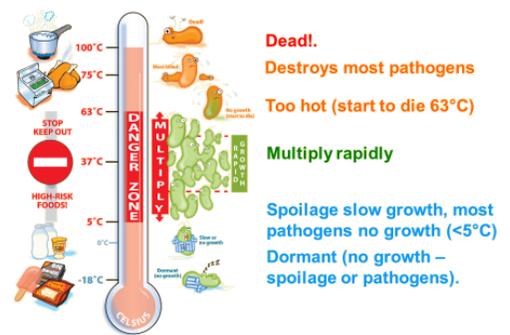
Bacteria

- Bacteria are single-celled micro-organisms. Bacteria can be found everywhere around you; on your skin, in food, in soil, in water and in the air.
- Most bacteria are harmless, but some are **pathogenic** and can cause food poisoning. General food poisoning **symptoms** are vomiting (being sick) and diarrhoea.
- Other types of bacteria cause food to decay; these are called food spoilage bacteria, which cause food to smell and lose its texture and flavour.

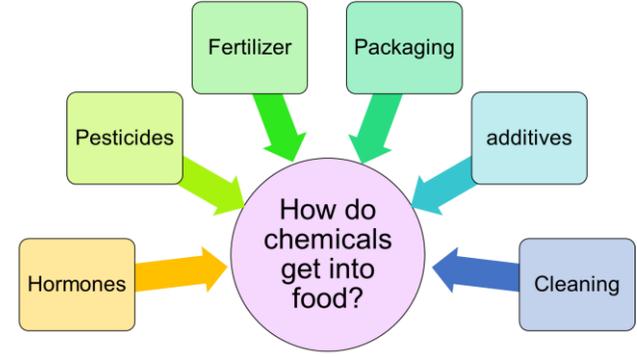
What do bacteria need to multiply?



Influence of bacteria



Chemicals



Metals

Aluminium

- Aluminium is one of the most common metals used in cookware as it is lightweight and conducts heat well.
- When aluminium surfaces are in contact with acidic foods, such as tomatoes and citrus fruits, the aluminium reacts and can leach (dissolve) into the food. This can give the food an unwanted metallic taste.
- When aluminium has been associated with Alzheimer's disease, there is no evidence that this causes the disease. The world health Organisation estimate that adults can consume more than 50 mg of aluminium daily without harm, so day to day exposure to aluminium from cooking is considered to be safe.
- Aluminium cookware can be anodised (hardened through a process that makes it unreactive) or coated with a less-reactive material, such as stainless steel, so that it does not react with food.

Copper

- Copper may be used in cups, pots and pans. It warms quickly and is the best conductor of heat.
- Copper and copper-alloy surfaces react with acidic foods, such as tomatoes and citrus fruits, and can leach (dissolve) into the food. High doses of copper can be toxic, so most copper pans are lined with stainless steel to avoid this happening.

Yeasts

- Yeasts are a single celled fungi that reproduce by 'budding' – the yeast cell grows a bud, which becomes bigger until it eventually breaks off and becomes a new yeast cell.
- Yeast can grow in acidic, sweet foods; for example orange juice can ferment if it is not stored correctly, and honey can ferment if not pasteurised.
- Yeasts prefer moist, acidic foods.
- Yeasts can grow in high concentrations of sugar and salt.
- Yeasts grow best in warm conditions (around 25-29°C) but can also grow at fridge temperatures (0-5°C)
- Yeasts are destroyed at temperatures above 100°C.

Moulds

- Moulds are tiny fungi; they produce thread like filaments that help the mould to spread around the food.
- Moulds grow in warm and moist conditions.
- Moulds grow easily on bread, cheese and soft fruits, and can grow on foods with high sugar and salt concentrations.
- Moulds grow best between 20°C and 30°C, but can also grow in the fridge (0°C - 5°C)
- Mould growth may be speeded up by high humidity and fluctuating temperatures
- Moulds can grow on fairly dry food, such as hard cheese (for example Cheddar cheese)
- Moulds often spoil food such as bread and other bakery products.

LO4: Know how food can cause ill health

AC4.1 Food-related causes of ill health

Poisonous plants

- Some mushrooms are poisonous, so you should pick mushrooms to eat unless you are 100% sure of what they are. The death cap and autumn skullcap are two of the most poisonous. Consuming poisonous mushrooms can lead to pain in the area of the kidneys, thirst, vomiting, headache and fatigue.
- Many berries that grow wild are poisonous and should not be eaten. Yew berries, deadly nightshade and unripe elderberries are all poisonous. Consuming poisonous berries can lead to nausea, vomiting, stomach ache and diarrhoea, but can also be fatal.
- Rhubarb leaves contain oxalic acid, which shuts down the kidneys and can be fatal; the stalks are safe to eat however.
- Glycoalkaloids are found in leaves, stems and sprouts of potatoes. They can build up in potatoes if they are left too long in the light, causing them to turn green. Eating glycoalkaloids can lead to cramps, diarrhoea and coma, and can prove fatal.
- If nuts and cereals get damp when they are stored, they can develop a mould that produces a **toxin** that can damage the liver.
- Dried kidney beans contain a toxin called lectin that makes them unsuitable for eating. Eating raw or inadequately cooked beans can lead to symptoms that indicate food poisoning. Kidney beans should be soaked and boiled for at least ten minutes to destroy the toxin.



Allergies

- A person with a food allergy experiences an allergic reaction when they eat or come into contact with specific foods.
- Allergic reactions are caused by the body's immune system reacting to the food and can be fatal.

Which ingredients can cause a problem?

Nuts	Cereals containing gluten	Peanuts
Milk	Soya	Eggs
Mustard	Lupin	Fish
Crustaceans	Molluscs	Sesame seeds
Celery	Sulphur dioxide	

Intolerances

Some people have sensitivity to certain foods. This is called a food intolerance. Eating these foods can cause symptoms such as nausea, abdominal pain, joint aches and pains, tiredness and weakness

Lactose intolerance

- A person with a **lactose** intolerance cannot digest the sugar in milk called lactose.
- People with a lactose intolerance need to avoid all dairy products and foods that contain dairy products in their ingredients.



Gluten intolerance

- Gluten is a protein present in a number of cereals including wheat, rye and barley.
- Wheat is a nutritious staple food in the UK diet and is found in a number of foods including flour, baked products, bread, cakes, pasta and breakfast cereals.
- People with a gluten intolerance need to follow a gluten free diet.
- It is important not to confuse gluten intolerance with **coeliac disease** which is an autoimmune disease caused by a reaction of the immune system to gluten. A person with coeliac disease is called a **coeliac**.



Make sure you understand the difference between a food intolerance and an allergy. An intolerance is a sensitivity to some foods; a person with a food allergy can suffer a fatal reaction if that food is eaten.

LO4: Know how food can cause ill health

AC4.2 The role and responsibility of the Environmental Health officer

Environmental Health Officers (EHOs) are responsible for carrying out measures to protect public health and to provide support to minimise health and safety hazards.

Role of EHOs

- They look after the safety and hygiene of food through all stages of the manufacture or production from distribution to storage and service.
- They help develop, co-ordinate and enforce food safety policies.
- They have the right to enter and inspect food premises at all reasonable hours and can visit without advance notice.
- They carry out routine inspections of all food premises in their area; the frequency of routine inspections depends on the potential risk posed by the type of business and its previous record- some high-risk premises may be inspected at least every six months, others much less often.
- They visit premises as a result of a complaint.
- They have powers of enforcement and can close businesses in extreme cases.



Responsibilities of EHOs

- They check that food producers handle all food hygienically so as not to give customers food poisoning.
- They check that food is being kept at the specific temperatures at which it should be stored or held.
- They check that staff are properly dressed, with clean nails, no jewellery, hair covered or tied back, and showing good hygiene habits.
- They review processes in the workplace, such as the handling of food, use of equipment, use of colour coded chopping boards, washing-up and disposal of waste.
- They inspect food stores-fridges, freezers and dry stores.
- They check stock rotation and temperature logs
- They check that equipment is clean, well maintained and with safety notices if appropriate.
- They check the temperature of the food when it is cooked with probes to ensure that it is at the correct temperature.
- They ask questions to check compliance with the law or good practice
- They identify potential hazards
- They review safety management systems and plans
- At the end of an inspection they give verbal feedback, discuss any problems and advise on possible solutions. They complete a report of inspection findings, which tells the business what **enforcement action** is to be taken.

Enforcement action

Enforcement action is required by law following an inspection from an EHO. Enforcement action can range from verbal advice, informal or formal letters, and notices through to prosecution.

Formal Inspection letters- tells the food business which issues must be addressed to comply with the law. The EHO may revisit the business to check that the issues have been resolved.

Hygiene Improvement Notices- An EHO can serve a Hygiene Improvement Notice when they believe that a food business is failing to comply with food hygiene regulations. This notice will specify what is going wrong and what needs to be done by which date. The EHO will visit again to see if the required work has been done. If it has not improved, it can lead to a fine or imprisonment.

Hygiene Emergency Prohibition Notices- If an EHO believes that there is a significant risk to health and injury, a Hygiene Emergency Prohibition Notice may be served. The notice stops the use of the unsafe equipment, processes or premises immediately. It can only be removed by an EHO once the issues have been addressed.

Voluntary closure- A food business may elect to close voluntarily to carry out improvements. However, should the business reopen before the improvements are completed, the EHO will serve a Hygiene Emergency Prohibition Notice.

Seizure and detention of food- EHOs have the power to inspect and seize food suspected of not meeting food safety regulations. Food is taken if there is suspicion that it is contaminated and is likely to cause food poisoning or disease. Seized food may undergo microbiological examination and testing.

Condemnation of food- In order to condemn or seize food, the EHO must present their findings to a court. They will consider the information and decide whether the food poses a risk to human health and whether or not to condemn it.

Voluntary surrender of food- The owner of a business may surrender unfit food to the EHO voluntarily. This would avoid the involvement of the court.



LO4: Know how food can cause ill health

AC4.3 Food safety legislation

Food labelling regulations

Food labels are used by business to provide information about their products. They are needed to:

- Enable consumers to make informed decisions and choices, and to educate them about the food they choose to buy
- Help us to store, prepare and cook the food we buy correctly
- Identify the ingredients used in food-if a consumer has a severe allergy to certain ingredients (for example nuts), they need to check if the food contains those ingredients.
- Establish the nutrient content of the food- if a consumer has a health condition such as diabetes or high blood pressure, they may want to check the sugar, fat, carbohydrate or salt content of the food.
- Identify where the food comes from- some consumers may prefer to buy local ingredients.

Dates of minimum durability

Different types of dates are used to tell customers when food should be consumed by:

- **Use-by date**- usually on high risk foods such as soft cheeses, chilled meats, salads and sandwiches, which can go off quickly; it states the date that the food should be used by.
- **Sell-by or display-until date**- this date is aimed at shopkeepers rather than consumers; it is usually a few days before the use-by date to allow the consumer time to eat the food.
- **Best-before date**- these are given on foods that keep for longer, for example biscuits; the food should be eaten before this date for quality purposes, but it is not usually harmful to eat it after this date.



Nutritional labelling

Nutritional information must be expressed per 100g or per 100ml, and it must be listed in the following specific order:

- Energy-stated in kilojoules (kJ) and kilocalories (kcal) per 100g or 100ml
- Fat
- Saturated
- Carbohydrates
- Sugars
- Fibre (not required by law)
- Protein
- Salt
- Vitamins and minerals-these must also be expressed as a percentage of the **reference intake (RI)**

Mandatory information required on labels



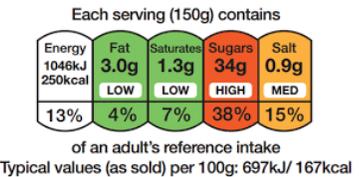
Traffic light labelling

Traffic light labelling is a voluntary system that uses traffic light colours to indicate how healthy a product is at a glance in terms of fat, saturated fat, sugar and salt.

- **Red**- the food is high in something that consumers should try to cut down on in their diet; such foods should be chosen less frequently and eaten in small amounts.
- **Amber**- the food isn't high or low in the nutrient, so this is an acceptable choice most of the time.
- **Green**- the food is low in that nutrient; the more green, the healthier the choice.

Consumers should choose foods with more greens and ambers and fewer reds to ensure healthier choices.

Traffic light labels also give the amount of fat, saturated fats, sugars and salt in grams, the manufacturer or retailer's suggested 'serving' size, and information on the nutrient as a percentage of RI.



Nutrition claims

There are strict rules about claims that can be made about food on its packaging so that consumers are not misled. For example, if the packaging says that the product is 'fat free', the product must not contain more than 0.5g of fat per 100g or 100ml.

Any health claim the manufacturer makes has to be reviewed to ensure it is accurate before it appears on the label.



LO4: Know how food can cause ill health

AC4.4 Common types of food poisoning

Food poisoning can be caused by pathogenic bacteria but it can also be caused by virus, chemicals and metals contaminating the food. Food can even be contaminated with poisonous plants and animals.



Sources of food poisoning

- Food can become contaminated during production, preparation and retailing. The main sources are:
- Raw food-for example meat, poultry, shellfish and eggs.
 - People- food-poisoning bacteria are found on the skin, in septic wounds, in the nose and sometimes in the gut.
 - Pests- for examples rats, mice, cockroaches, ants, wasps and flies.
 - Animals- domestic pets and farm animals can carry *E.coli* in their intestines.
 - Air and dust- food must be covered as bacteria in the air can settle on the surface.
 - Water- bacteria such as *Salmonella* are carried in untreated water.
 - Soil- bacteria and spores can survive in soil, so can be found on unwashed vegetables.
 - Food waste-waste needs to be disposed of correctly as it could be a source of contamination and may attract pests.



Conditions necessary for food poisoning

Bacteria can grow rapidly in the correct conditions. A single **bacterium** can divide into two by the process called **binary fission**. A single bacterium can produce 16 million bacteria in only 12 hours. Food poisoning bacteria have four essential requirements for growth:

- **Food**- bacteria grow rapidly in high risk foods that are good sources of protein; such as cooked meat and poultry, shellfish, and seafood, undercooked or lightly cooked eggs, unpasteurised milk and cheeses, cooked rice and pasta, and salads.
- **Moisture**- bacteria cannot multiply without moisture, which means that they do not usually affect dried foods or products with high quantities of salt or sugar, which absorb water.
- **Warmth**- most bacteria multiply at **ambient temperature** - normal room temperature. This falls within the danger zone between 5°C and 63°C. Below 5°C most bacteria are unable to multiply rapidly, and below -18°C they become **dormant**. Cooking food at high temperatures above 63°C will destroy most bacteria; when cooked, the food should reach 75°C for at least two minutes.
- **Time**- in the right conditions the number of bacteria can double every 20 minutes.

The acidity and alkalinity of a food can influence the growth of

AC4.5 Symptoms of food-induced ill health

How bacteria make you ill

- **Eating pathogenic bacteria**- when bacteria enter the stomach and intestines they multiply. This is how *Campylobacter* and *Salmonella* cause illness. Some types of food poisoning require the consumption of thousands of bacteria; others, such as *E.coli*, only require the consumption of a few to cause serious illness.
- **Eating a toxin**- a toxin is a poison produced as a waste product by bacteria. Some bacteria, such as *Staphylococcus aureus* and *Bacillus cereus*, produce a toxin when they multiply. Eating the toxin makes you ill, not eating the bacteria.

Symptoms of food poisoning

- A symptom is a sign or indication of a disease.
- The body reacts to bacteria or toxins by developing symptoms such as diarrhoea, vomiting, stomach pains, headache and sweating.
- Some of these symptoms are visible and some are non-visible

Visible symptoms	Non-visible symptoms
Shivering Diarrhoea Vomiting	Feeling tired or weak Stomach ache Headache Feeling nauseous (sick)

Symptoms of food allergies

A food allergy is a serious reaction to a food or ingredients in food. It is caused by the body's immune system reacting to an allergen. If the reaction to a food is a bad one, it could give the following symptoms:

- Skin rash
- Itchiness of skin, eyes and mouth.
- Swollen lips, face, eyes
- Difficulties in breathing.

In severe cases, it can bring about anaphylactic shock- the person develops swelling in their throat and mouth, making it difficult to speak or breathe. This can lead to death if appropriate treatment, such as an EpiPen, is not used quickly.

Symptoms of food intolerances and coeliac disease

Some people have a sensitivity to certain foods, which can cause symptoms such as nausea, abdominal pain, joint aches and pains, tiredness and weakness. This is called a food intolerance- this is not an allergic reaction and it does not involve the immune system. Coeliac disease is neither a food allergy nor a food intolerance but an autoimmune disease caused by a reaction of the immune system to gluten- a protein found in wheat, rye and barley. The symptoms of coeliac disease vary from person to person and can range from mild to severe.

Symptoms of coeliac disease include:

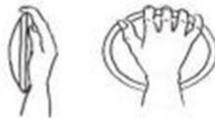
- Severe diarrhoea, excessive wind and/or constipation
- Persistent or unexplained gastrointestinal symptoms, such as nausea and vomiting.
- Recurrent stomach pain, cramping or bloating.
- Iron, vitamin B12 or folic acid deficiency.
- Anaemia
- Tiredness
- Sudden or unexpected weight loss.

Symptoms of lactose intolerance include:

- Abdominal pain
- Nausea
- Diarrhoea
- flatulence

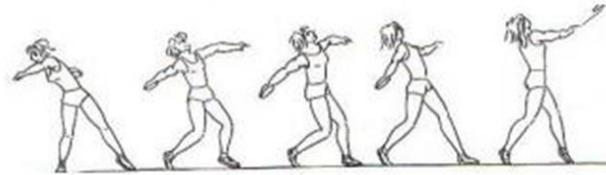
KS3
Athletics

Throwing

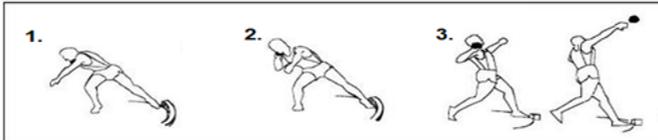


Discuss – Grip + Action:

- 'Swing' arm from a high to low position
- Release shot at 45 degrees



1. Chin, knee and toe in a line
2. make a bow
3. push and watch it go

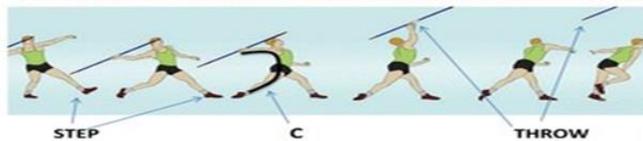


Javelin

Which grip will you use?



The basics - can you step, make a C and throw?



Rules of Athletics

- Track** - You must be behind the line before you start a race.
 - You must wait for the gun to sound before starting, if you start before the gun it is a false start and the race will start again.
 - You must stay in your own lane, if you cross into someone's lane you will be disqualified from the race.
- Field (throwing)** - When throwing you must stay behind the throwing line.
 - If the object you are throwing goes out of the throwing area it is a 'no throw'
- Field (Jumping)** - When jumping you must take off from the board or behind it.
 - You must jump into the designated area.
 - When measuring a jump you measure from the point closest to the take off board.

Running

Sprint Start Technique

On Your Marks	Get Set	Go!
<ul style="list-style-type: none"> ➤ Rear knee should be level with front foot ➤ Form a 'V' behind the line with your hands ➤ Arms shoulder width apart, slightly ahead of hands 	<ul style="list-style-type: none"> ❖ Raise hips higher than shoulders ❖ Lift legs at the knees ❖ Body weight on hands and feet equally 	<ul style="list-style-type: none"> ✓ Drive knee of rear leg forwards ✓ Extend front leg out ✓ Lean forwards ✓ Don't become upright too early

Up-Sweep

Carrier gives command 'Hand'

Receiver holds out hand with palm facing down

Carrier sweeps baton from low to high

Receiver gives call when baton is in their hand

Down-Sweep

Carrier gives command 'Hand'

Receiver holds out hand with palm facing up

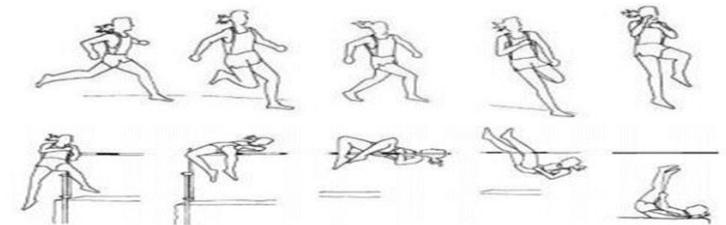
Carrier sweeps baton from high to low

Receiver gives call when baton is in their hand

Jumping

High Jump – Fosbury Flop Technique:

- Curve run up
- Take off with nearest leg to the bar (1 footed)
- Use arms to drive the jump upwards
- Push hips forward to arch back on take off.

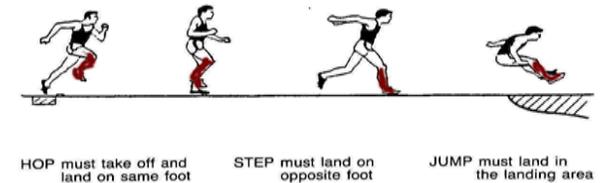


Long Jump



1. run towards marker
2. take off on strongest foot
3. use your arms and legs for height and distance
4. land safely on two feet

Sequence for Triple Jump



- HOP must take off and land on same foot
- STEP must land on opposite foot
- JUMP must land in the landing area