Year 9 Term 1 Knowledge Organiser Booklet

Name:		Form:	

One child, one teacher, one book and one pen can change the world

Malala Yousafzai

Year 9 Term 1 Knowledge Organiser Booklet

Contents:

Year 9 Term 1 Knowledge Organiser Booklet

How do I use the Knowledge Organiser booklet for independent home learning?

Every day you should be studying from your Knowledge Organiser (KO) booklet for home learning, as a minimum expectation.

The timetable on page 4 in this KO booklet tells you which subjects you should be studying and on which days. It doesn't matter if you don't have that subject on that day, you just follow the timetable.

Key instructions:

- Produce your home learning in your knowledge organiser exercise book.
- Start a new page for each subject.
- Bring your knowledge organiser booklet and exercise book to school with you every day.
- Your parents/carers should sign completed home learning every evening at the top of each page in your knowledge organiser exercise book.
- Your knowledge organiser exercise book will be checked regularly in form time and in lessons.
- Failure to complete knowledge organiser home learning will result in an after-school detention, where the missed home learning will be caught up.
- You will be regularly quizzed in lessons on knowledge from your knowledge organisers, to support the retention of this key information.

How does Knowledge Organiser home learning work?

The knowledge organiser for each subject contains the foundation knowledge that is required for that topic for that specific part of the year. Your aim is to make sure that by the end of the topic you are able to retain all of the knowledge from each subject knowledge organiser.

For each subject you should follow one of the two methods, and you should do one page of knowledge organiser home learning per subject. You are self-quizzing and self-assessing your knowledge against that in the KO booklet for each subject. **You are not just taking notes or copying out.**

Method 1

- Read the knowledge organiser for about 5 minutes
- Cover the knowledge organiser up
- Write down as much as you can remember in black/blue pen
- Add all that you couldn't remember or any corrections in green pen.

Method 2

- Read the knowledge organiser for about 5 minutes
- Use/write exam style questions
- Answer the questions in black/blue pen
- Correct/improve your answers in green pen

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Each day complete one page of your knowledge organiser exercise book to evidence your home learning

Week 1	Subject 1	Subject 2	Signature
Monday	Cultural Capital	English	
Tuesday	Maths	Science	
Wednesday	History	Geography	
Thursday	MFL	LFL	
Friday	Option 1	Option 2	

Week 2	Subject 1	Subject 2	Signature
Monday	Cultural Capital	English	
Tuesday	Maths	Science	
Wednesday	History	Geography	
Thursday	MFL	LFL	
Friday	Option 1	Option 2	

Week 3	Subject 1	Subject 2	Signature
Monday	Cultural Capital	English	
Tuesday	Maths	Science	
Wednesday	History	Geography	
Thursday	MFL	LFL	
Friday	Option 1	Option 2	

Week 4	Subject 1	Subject 2	Signature
Monday	Cultural Capital	English	
Tuesday	Maths	Science	
Wednesday	History	Geography	
Thursday	MFL	LFL	
Friday	Option 1	Option 2	

Week 5	Subject 1	Subject 2	Signature
Monday	Cultural Capital	English	
Tuesday	Maths	Science	
Wednesday	History	Geography	
Thursday	MFL	LFL	
Friday	Option 1	Option 2	

Week 6	Subject 1	Subject 2	Signature
Monday	Cultural Capital	English	
Tuesday	Maths	Science	
Wednesday	History	Geography	
Thursday	MFL	LFL	
Friday	Option 1	Option 2	

Week 7	Subject 1	Subject 2	Signature
Monday	Cultural Capital	English	
Tuesday	Maths	Science	
Wednesday	History	Geography	
Thursday	MFL	LFL	
Friday	Option 1	Option 2	

Week 8	Subject 1	Subject 2	Signature
Monday	Cultural Capital	English	
Tuesday	Maths	Science	
Wednesday	History	Geography	
Thursday	MFL	LFL	
Friday	Option 1	Option 2	

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You are expected to study the subjects shown on your timetable each day.
Each day complete one page of your knowledge organiser exercise book to evidence your home learning

Week 9	Subject 1	Subject 2	Signature
Monday	Cultural Capital	English	
Tuesday	Maths	Science	
Wednesday	History	Geography	
Thursday	MFL	LFL	
Friday	Option 1	Option 2	

Week 10	Subject 1	Subject 2	Signature
Monday	Cultural Capital	English	
Tuesday	Maths	Science	
Wednesday	History	Geography	
Thursday	MFL	LFL	
Friday	Option 1	Option 2	

Week 11	Subject 1	Subject 2	Signature
Monday	Cultural Capital	English	
Tuesday	Maths	Science	
Wednesday	History	Geography	
Thursday	MFL	LFL	
Friday	Option 1	Option 2	

Week 12	Subject 1	Subject 2	Signature
Monday	Cultural Capital	English	
Tuesday	Maths	Science	
Wednesday	History	Geography	
Thursday	MFL	LFL	
Friday	Option 1	Option 2	

Week 13	Subject 1	Subject 2	Signature
Monday	Cultural Capital	English	
Tuesday	Maths	Science	
Wednesday	History	Geography	
Thursday	MFL	LFL	
Friday	Option 1	Option 2	

Week 14	Subject 1	Subject 2	Signature
Monday	Cultural Capital	English	
Tuesday	Maths	Science	
Wednesday	History	Geography	
Thursday	MFL	LFL	
Friday	Option 1	Option 2	

Week 15	Subject 1	Subject 2	Signature
Monday	Cultural Capital	English	
Tuesday	Maths	Science	
Wednesday	History	Geography	
Thursday	MFL	LFL	
Friday	Option 1	Option 2	

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Reading Log

Use this reading log to record the books that you read and how long you have spent reading them during this term

Week	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Books read (title and author	Time spent reading	Signature
1										
2										
3										
4										
5										
6										
7										

Year 9 Term 1 Knowledge Organiser Booklet

Week	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Books read (title and author	Time spent reading	Signature
8										
9										
10										
11										
12										
13										
14										
15										

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Keywords Term 1		
intervention	inferred	successive
confirmed	guarantee	innovation
definite	advocate	prohibited
classical	dynamic	isolated
chemical	simulation	whereby
voluntary	topic	inclination
release	insert	encountered
visible	reverse	convinced
finite	decades	assembly
publication	comprise	albeit
channel	hierarchical	enormous
file	unique	reluctant
thesis	comprehensive	posed
equipment	couple	persistent
disposal	mode	global
solely	differentiation	media
deny	eliminate	
identical	priority	
submitted	empirical	
grade	ideology	
phenomenon	somewhat	
paradigm	aid	
ultimately	foundation	
extract	adults	
survive	adaptation	
converted	quotation	
transmission	contrary	

Year 9 Knowledge Organiser

Key Words

Having a broad vocabulary is very important in helping you to make progress. Each term we will provide you with a bank of words so that you can learn the definition and practice spelling, your subjects teachers will be looking for opportunities for you to use these words within your work. Your form tutor will be working with you during registration time to check your understanding of the words. Over the course of the term it's important for you to;

1. Establish the definitions for all of the words
2. Learn how to spell each word
3. Develop example sentences that use the words and try and use these words in your work across the subjects you study

Key Facts about Warrington	
Warrington was founded by the Romans as an important point for crossing the Mersey, by the middle ages Warrington had become an important market town. The expansion and urbanisation of Warrington was facilitated by the Industrial Revolution being perfectly placed on the River Mersey which was an important trade route. The modern Borough of Warrington was formed in 1974.	
First reference to Warrington in historical documentation?	1285 – reference to a bridge in Warrington
Population of Warrington?	209,547 (2018 estimate)
When was the Town Hall built?	1750 – known as Bank Hall at the time.
Interesting fact?	IKEA opened their first UK branch in Warrington

Extended Learning

During the industrial revolution Warrington developed a strong manufacturing town. What were the industries that became prominent in Warrington?

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British Values

British Value	Definition
Democracy	A political system based upon the concept of people having the power to decide. The word comes from the Ancient Greek for people and power.
Individual Liberty	The Concept that in a modern democracy people have the freedom to make their own choices and decisions.
The Rule of Law	A basic principle of a democratic society that the law applies equally to all people.
Mutual respect for and tolerance of those with different faiths and beliefs, and for those without faith.	A concept based upon the idea that in a modern society people show understanding of others with differing views and opinions.

Democracy in the UK

Key Terms

1. Parliament	The group of people in charge of making laws in the UK
2. Government	The people in charge of running the country. They had the most votes in an election
3. Democracy	People can choose their leader and can have a say in how their country is run
4. Dictatorship	People have no say in how their country is run and often cannot chose the leader
5. Political party	An organised group of people who seek to influence public policy and hold power
6. Prime minister	The head of the government
7. Member of parliament (MP)	A person who has been elected by the people in a particular area to represent them in a country's parliament
8. Media	Any means of mass communication e.g. TV, radio or the internet
9. Pressure group	A group that tries to influence public policy in the interest of a particular cause.
10. Election	A formal and organised vote to choose somebody to take up a position of power
11. Voting	A formal indication of a choice between two or more candidates or courses of action

Key Dates

1872	Voting in elections became secret (before this voting was open and people were commonly bribed!)
1918	Voting allowed for all men over the age of 21 and some women over the age of 30
1928	Voting allowed for all women over the age of 21 (same as men)
1969	Voting age lowered to 18
1979	First female prime minister in the UK
2008	Vote in parliament to see whether or not voting age should be lowered to 16. The result was no.

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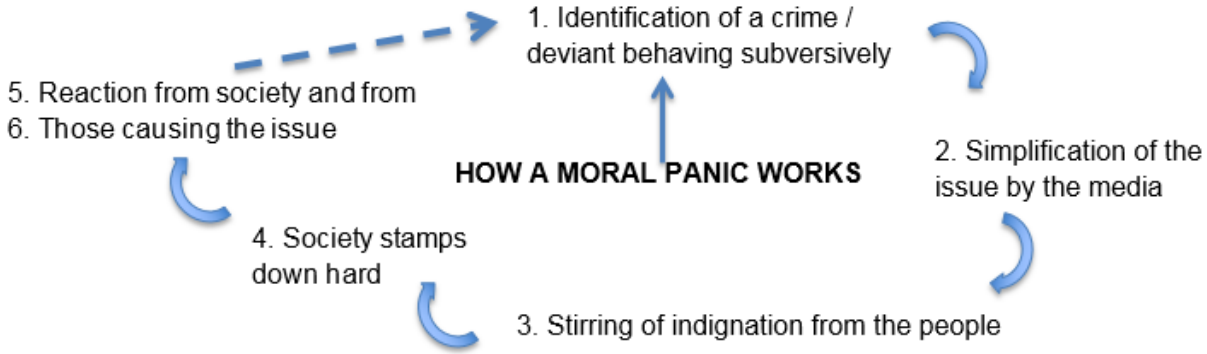
Year 9 MORAL PANIC / URBAN STORIES / SOCIETAL DEBATES KNOWLEDGE ORGANISER

What is a **moral panic**?
Events, or a group of people, or a person, behave in a way that seems to threaten society in some way.
The media gets hold of this issue and identifies this threat. They highlight it, by reporting on it heavily, usually in an exaggerated, or over simplified way that seems to increase its real or actual importance or threat to society.
The issue / event / people / person is in the minority, and is part of a subculture. This group is stigmatised by the media, and people then begin to feel frightened / worried and indignant and outraged by the issue.
People do not realise that the media is reporting it disproportionally, and their indignance grows.
Government / society responds to the threat by stamping down hard on those who / that which caused the issue in the first place.
This can have a knock on effect, causing those people to react, perhaps in a way that only causes the worry that society has to continue and increase
Sociologist Jock Young used the term moral panic. It was investigated further by Stanley Cohen in 1972 when he published his book 'Folk Devils and Moral Panics' which investigated the fights between Mods and Rockers on the beaches of the South coast in the 1960s.

Moral Panic simplified: A feeling of fear spreads amongst a large part of society. They feel that a smaller group and their behaviour threatens society. The media's reporting of this exaggerates the worry. Fear increases. Society worries. The smaller group react. Media reports on this. Society becomes more frightened. (Eventually the panic / threat ends as society and the media move on to something else.)



MORAL PANIC - TOPIC AREAS

Gangs | Mods & Rockers | Violence | Knife crime | The Yorkshire Ripper | Victorian society

Poverty | Gun crime | Video games / Gaming | Slenderman | Public Health Awareness

Vaccination | Feminism | Scientific debate | Peer pressure

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MORAL PANIC KEY WORDS

Key words	**to describe TEXT TYPES**	**Key words**	**to describe LANGUAGE**
Newspaper	Can be print based or online	Persuasive	Designed to persuade
Leaflet	Can be A4 sheet divided / folded into smaller areas / panels	Emotive	Designed to create an emotion
Speech	Formal address delivered to an audience	Subjective	Based on someone's personal feelings
Presentation	A speech / talk to explain something to an audiecne	Objective	Not based on personal opinion
Letter	A written / printed communication	Informative	Designed to inform
Editorial	A piece where the newspaper gives its opinion	Descriptive	
Tabloid	Smallest size of newspaper	Explanatory	
Headline	Introduces main story	Exclamatory	Expressing emotion
Masthead	The title of a newspaper on the front page	Intensifier	An adverb used to give emphasis
Sub head	Smaller headline / secondary story	Adjective	A describing word
Column	How the text is organised	Adverb	A word to help describe a verb
Lead	Lead / main story	Colloquial / isms	Chatty / informal language
Byline	Who wrote the piece	Formal	Writing / speech using proper grammar & vocab
Dateline	When the piece was published	Erudite	Showing great knowledge / learning
Bullet points	A symbol to how separate things in a text	Academic	Educated
Rhetorical question	Does not need an actual answer & is designed to engage the audience & make them think	Intellectual	Appealing to those who have intelligence
Statistic	A numerical fact		
Expert opinion	Belief / judgement given by an expert	**Key words**	**to describe VIEWPOINT & ATTITUDE**
Layout	The way in which parts are arranged	Contemptuous	Being scornful / sneering
Panel(s)	Sides on a leaflet	Sarcastic	Using irony to mock
Logo	Image that sums up the	Scathing	Severely critical
Image	Media term for picture	Apathetic	Showing no interest / enthusiasm
Caption	Explains what the image is of	Bitter	Feeling anger / resentment
KEY WORDS	**to describe MORAL PANICS**	Indifferent	Having nor sympathy
Deviant	Not the normal or accepted	Neutral	Not supporting either side of the argument
Consequences	The results of an action	Compassionate	Caring

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Simplification	Making something easier to understand	Impartial	Without being biased
Stigmatise	Think of something as being worthy of disgrace / disapproval	Pessimistic	Tending to see the worst
Exaggeration	Overstating something	Optimistic	Tending to see the best
Stirring	Causing a strong emotion	Witty	Cleverly funny
Indignation	Anger caused by perceived unfair treatment	Critical	Disapproving comments
Subculture	A group within a larger group that has different beliefs to the larger group	Scornful	Expressing snide / mocking comments
Subversive	Someone trying to subvert / change the accepted system	Superior	Thinking your opinion is better than others'

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Number

Topic/Skill	Definition/Tips	Example
Integer	A **whole number** that can be positive, negative or zero.	$-3, 0, 92$
Sum	To find the **total**, or **sum**, of two or more numbers means add the numbers together 'add', 'plus', 'sum'	$3 + 2 + 7 = 12$
Difference	To find the **difference** between two numbers means you subtract one number from the other	$10 - 3 = 7$
Product	To find the product of two numbers means you multiply them.	$3 \times 6 = 6 + 6 + 6 = 18$
BIDMAS	An acronym for the **order** you should do calculations in. BIDMAS stands for **'Brackets, Indices, Division, Multiplication, Addition and Subtraction'**. Indices are also known as 'powers' or 'orders'. With strings of division and multiplication, or strings of addition and subtraction, and no brackets, work from left to right.	$6 + 3 \times 5 = 21, not\ 45$ $5^2 = 25$, where the 2 is the index/power. $12 \div 4 \div 2 = 1.5, not\ 6$
Terminating decimal	A decimal number that has **that has an end.**	0.78, 12.056
Recurring Decimal	A decimal number that has **digits that repeat forever**. The part that repeats is usually shown by placing a dot above the digit that repeats, or dots over the first and last digit of the repeating pattern.	$\frac{1}{3} = 0.333\ldots = 0.\dot{3}$ $\frac{1}{7} = 0.142857142857\ldots = 0.\dot{1}42857\dot{7}$ $\frac{77}{600} = 0.128333\ldots = 0.128\dot{3}$
Multiple	The result of multiplying a number by an integer. The **times tables** of a number.	The first five multiples of 7 are: $7, 14, 21, 28, 35$
Factor	A number that **divides exactly** into another number without a remainder. It is useful to write factors in pairs	The factors of 18 are: $1, 2, 3, 6, 9, 18$ The factor pairs of 18 are: $1, 18$ $2, 9$ $3, 6$
Lowest Common Multiple (LCM)	The **smallest** number that is in the **times tables** of each of the numbers given.	The LCM of 3, 4 and 5 is 60 because it is the smallest number in the 3, 4 and 5 times tables.

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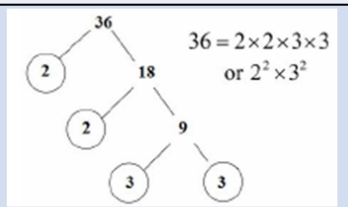
Topic/Skill	Definition/Tips	Example
Highest Common Factor (HCF)	The **biggest** number that **divides exactly** into two or more numbers.	The HCF of 6 and 9 is 3 because it is the biggest number that divides into 6 and 9 exactly.
Prime Number	A number with **exactly two factors**. A number that can only be divided by itself and one. The number **1 is not prime**, as it only has one factor, not two.	The first ten prime numbers are: $2, 3, 5, 7, 11, 13, 17, 19, 23, 29$
Product of Prime Factors	Finding out which **prime numbers multiply** together to make the **original** number. Use a **prime factor tree.** Also known as 'prime factorisation'.	 $36 = 2\times2\times3\times3$ or $2^2\times3^2$
Significant Figure	The significant figures of a number are the digits which **carry meaning** (ie. are significant) to the size of the number. The **first significant figure** of a number **cannot be zero**. In a number with a decimal, trailing zeros are not significant.	In the number 0.00821, the first significant figure is the 8. In the number 2.740, the 0 is not a significant figure. 0.00821 rounded to 2 significant figures is 0.0082. 19357 rounded to 3 significant figures is 19400. We need to include the two zeros at the end to keep the digits in the same place value columns.
Truncation	A method of approximating a decimal number by **dropping all decimal places** past a certain point **without rounding**.	3.14159265... can be truncated to 3.1415 (note that if it had been rounded, it would become 3.1416)
Error Interval	A **range of values** that a number could have taken before being rounded or truncated. An error interval is written using inequalities, with a **lower bound** and an **upper bound**. Note that the lower bound inequality can be 'equal to', but the upper bound cannot be 'equal to'.	0.6 has been rounded to 1 decimal place. The error interval is: $0.55 \leq x < 0.65$ The lower bound is 0.55 The upper bound is 0.65
Estimate	To find something **close to the correct answer**.	An estimate for the height of a man is 1.8 metres.
Approximation	When using approximations to estimate the solution to a calculation, **round each number in the calculation to 1 significant figure**. $\approx$ means 'approximately equal to'	$\frac{348+692}{0.526} \approx \frac{300+700}{0.5} = 2000$ 'Note that dividing by 0.5 is the same as multiplying by 2'

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Topic/Skill	Definition/Tips	Example
Square Number	The number you get when you **multiply a number by itself**.	**1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, 169, 196, 225…** $9^2 = 9 \times 9 = 81$
Square Root	The **number you multiply by itself** to get another number. The reverse process of squaring a number.	$\sqrt{36} = 6$ because $6 \times 6 = 36$
Cube Number	The number you get when you **multiply a number by itself and itself again**.	1, 8, 27, 64, 125… $2^3 = 2 \times 2 \times 2 = 8$
Cube Root	The **number you multiply by itself and itself again** to get another number. The reverse process of cubing a number.	$\sqrt[3]{125} = 5$ because $5 \times 5 \times 5 = 125$
Multiplication Index Law	When **multiplying** with the same base (number or letter), **add the powers**. $\boldsymbol{a^m \times a^n = a^{m+n}}$	$7^5 \times 7^3 = 7^8$ $a^{12} \times a = a^{13}$ $4x^5 \times 2x^8 = 8x^{13}$
Division Index Law	When **dividing** with the same base (number or letter), **subtract the powers**. $\boldsymbol{a^m \div a^n = a^{m-n}}$	$15^7 \div 15^4 = 15^3$ $x^9 \div x^2 = x^7$ $20a^{11} \div 5a^3 = 4a^8$
Brackets Index Laws	When raising a power to another power, multiply the powers together. $\boldsymbol{(a^m)^n = a^{mn}}$	$(y^2)^5 = y^{10}$ $(6^3)^4 = 6^{12}$ $(5x^6)^3 = 125x^{18}$
Notable Powers	$\boldsymbol{p = p^1}$ $\boldsymbol{p^0 = 1}$	$99999^0 = 1$
Negative Powers	A negative power performs the reciprocal. $\boldsymbol{a^{-m} = \frac{1}{a^m}}$	$3^{-2} = \frac{1}{3^2} = \frac{1}{9}$
Standard Form	$\boldsymbol{A \times 10^b}$ $\boldsymbol{where\ 1 \leq A < 10, \quad b = integer}$	8400 = 8.4×10^3 0.00036 = 3.6×10^{-4}
HIGHER ONLY Fractional Powers	The denominator of a fractional power acts as a 'root'. The numerator of a fractional power acts as a normal power. $\boldsymbol{a^{\frac{m}{n}} = \left(\sqrt[n]{a}\right)^m}$	$27^{\frac{2}{3}} = \left(\sqrt[3]{27}\right)^2 = 3^2 = 9$ $\left(\frac{25}{16}\right)^{\frac{3}{2}} = \left(\frac{\sqrt{25}}{\sqrt{16}}\right)^3 = \left(\frac{5}{4}\right)^3 = \frac{125}{64}$

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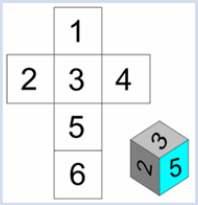
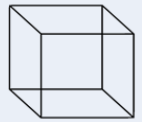
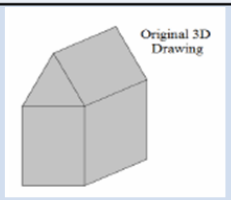
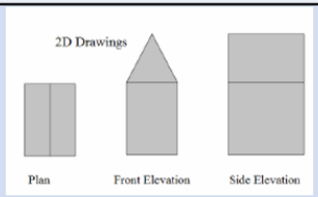
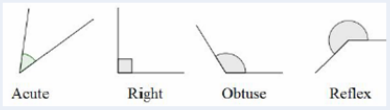
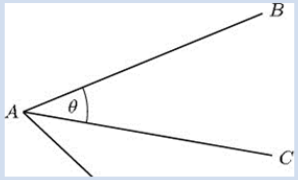
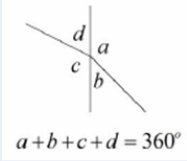
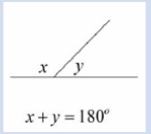
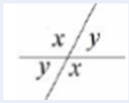
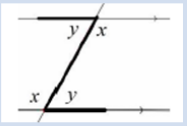
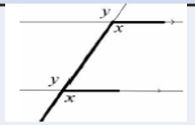
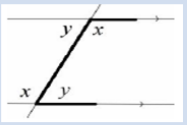
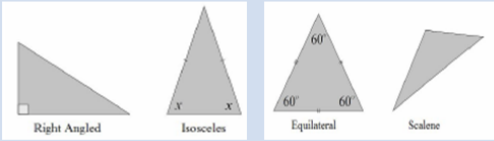
Shape

Topic/Skill	Definition/Tips	Example
Net	A pattern that you can **cut and fold** to make a **model** of a **3D shape**.	
Properties of Solids	**Faces = flat surfaces** **Edges = sides/lengths** **Vertices = corners**	A cube has 6 faces, 12 edges and 8 vertices. 
Plans and Elevations	This takes 3D drawings and produces 2D drawings. **Plan View**: from **above** **Side Elevation**: from the **side** **Front Elevation**: from the **front**	 
Types of Angles	**Acute angles** are less than 90°. **Right angles** are exactly 90°. **Obtuse angles** are greater than 90° but less than 180°. **Reflex angles** are greater than 180° but less than 360°.	
Angle Notation	Can use **one lower-case** letters, eg. θ or x Can use **three upper-case** letters, eg. BAC	
Angles at a Point	**Angles around a point add up to 360°.**	 $a+b+c+d=360^\circ$

Year 9 Term 1 Knowledge Organiser Booklet

Topic/Skill	Definition/Tips	Example
Angles on a Straight Line	**Angles around a point on a straight line add up to 180°.**	
Opposite Angles	**Vertically opposite angles are equal.**	
Alternate Angles	**Alternate angles are equal.** They look like Z angles, but never say this in the exam.	
Corresponding Angles	**Corresponding angles are equal.** They look like F angles, but never say this in the exam.	
Co-Interior Angles	**Co-Interior angles add up to 180°.** They look like C angles, but never say this in the exam.	
Angles in a Triangle	**Angles in a triangle add up to 180°.**	
Types of Triangles	**Right Angle** Triangles have a **90°** angle in. **Isosceles** Triangles have **2 equal sides** and **2 equal base angles.** **Equilateral** Triangles have **3 equal sides** and **3 equal angles (60°).** **Scalene** Triangles have **different sides** and **different angles.** **Base angles in an isosceles triangle are equal.**	
Angles in a Quadrilateral	**Angles in a quadrilateral add up to 360°.**	
Polygon	A **2D** shape with **only straight edges.**	

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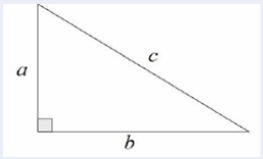
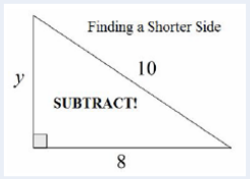
Topic/Skill	Definition/Tips	Example
Regular	A shape is regular if all the **sides** and all the **angles** are **equal**.	
Names of Polygons	**3**-sided = **Triangle** **4**-sided = **Quadrilateral** **5**-sided = **Pentagon** **6**-sided = **Hexagon** **7**-sided = **Heptagon**/Septagon **8**-sided = **Octagon** **9**-sided = **Nonagon** **10**-sided = **Decagon**	
Sum of Interior Angles	$(n-2)\times 180$ where n is the number of sides.	Sum of Interior Angles in a Decagon = $(10-2)\times 180 = 1440°$
Size of Interior Angle in a Regular Polygon	$\frac{(n-2)\times 180}{n}$ You can also use the formula: $180 - Size\ of\ Exterior\ Angle$	Size of Interior Angle in a Regular Pentagon = $\frac{(5-2)\times 180}{5} = 108°$
Size of Exterior Angle in a Regular Polygon	$\frac{360}{n}$ You can also use the formula: $180 - Size\ of\ Interior\ Angle$	Size of Exterior Angle in a Regular Octagon = $\frac{360}{8} = 45°$
Pythagoras' Theorem	For any **right angled triangle**: $a^2 + b^2 = c^2$  Used to find **missing lengths**. a and b are the shorter sides, c is the **hypotenuse** (**longest side**).	 $a = y,\ b = 8,\ c = 10$ $a^2 = c^2 - b^2$ $y^2 = 100 - 64$ $y^2 = 36$ $y = 6$
Trigonometry	The **study** of **triangles**.	

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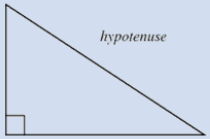
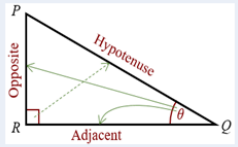
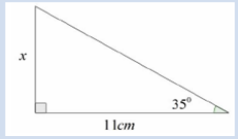
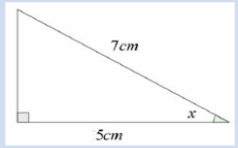
Topic/Skill	Definition/Tips	Example
Hypotenuse	The **longest side** of a **right-angled triangle**. Is always **opposite** the **right angle**.	
Adjacent	**Next to**	
Trigonometric Formulae	Use **SOHCAHTOA**. $\sin\theta = \frac{O}{H}$ $\cos\theta = \frac{A}{H}$ $\tan\theta = \frac{O}{A}$ When finding a missing angle, use the 'inverse' trigonometric function by pressing the 'shift' button on the calculator.	 Use 'Opposite' and 'Adjacent', so use 'tan' $\tan 35 = \frac{x}{11}$ $x = 11\tan 35 = 7.70cm$  Use 'Adjacent' and 'Hypotenuse', so use 'cos' $\cos x = \frac{5}{7}$ $x = cos^{-1}\left(\frac{5}{7}\right) = 44.4°$

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Algebra

Topic/Skill	Definition/Tips	Example
Expression	A mathematical statement written using **symbols**, **numbers** or **letters**,	$3x + 2$ or $5y^2$
Equation	A statement showing that **two expressions are equal**	$2y - 17 = 15$
Identity	An equation that is **true for all values** of the variables An identity uses the symbol: $\equiv$	$2x \equiv x+x$
Formula	Shows the **relationship** between **two or more variables**	Area of a rectangle = length x width or A= LxW
Simplifying Expressions	**Collect 'like terms'.** Be careful with negatives. x^2 and x are not like terms.	$2x + 3y + 4x - 5y + 3 = 6x - 2y + 3$ $3x + 4 - x^2 + 2x - 1 = 5x - x^2 + 3$
Expand	To expand a bracket, **multiply** each term **in the bracket** by the expression **outside** the bracket.	$3(m + 7) = 3x + 21$
Factorise	The **reverse** of **expanding**. Factorising is writing an expression as a product of terms by '**taking out' a common factor**.	$6x - 15 = 3(2x - 5)$, where 3 is the common factor.
Solve	To find the **answer**/value of something **Use inverse operations** on both sides of the equation (balancing method) until you find the value for the letter.	Solve $2x - 3 = 7$ Add 3 on both sides $2x = 10$ Divide by 2 on both sides $x = 5$
Inverse	**Opposite**	The inverse of addition is subtraction. The inverse of multiplication is division.
Rearranging Formulae	**Use inverse operations** on both sides of the formula (balancing method) until you find the expression for the letter.	Make x the subject of $y = \frac{2x-1}{z}$ Multiply both sides by z $yz = 2x - 1$ Add 1 to both sides $yz + 1 = 2x$ Divide by 2 on both sides $\frac{yz+1}{2} = x$ We now have x as the subject.

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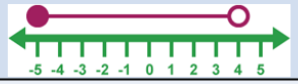
Topic/Skill	Definition/Tips	Example
Writing Formulae	**Substitute letters for words** in the question.	Bob charges £3 per window and a £5 call out charge. $C = 3N + 5$ Where N=number of windows and C=cost
Substitution	**Replace letters with numbers**. Be careful of $5x^2$. You need to square first, then multiply by 5.	$a = 3, b = 2$ *and* $c = 5$. Find: 1. $2a = 2 \times 3 = 6$ 2. $3a - 2b = 3 \times 3 - 2 \times 2 = 5$ 3. $7b^2 - 5 = 7 \times 2^2 - 5 = 23$
Inequality	An inequality says that two values are **not equal**. $a \neq b$ means that a is not equal to b.	$7 \neq 3$ $x \neq 0$
Inequality symbols	$\boldsymbol{x > 2}$ means **x is greater than 2** $\boldsymbol{x < 3}$ means **x is less than 3** $\boldsymbol{x \geq 1}$ means **x is greater than or equal to 1** $\boldsymbol{x \leq 6}$ means **x is less than or equal to 6**	State the integers that satisfy $-2 < x \leq 4.$ -1, 0, 1, 2, 3, 4
Inequalities on a Number Line	Inequalities can be shown on a number line. **Open circles** are used for numbers that are **less than or greater than** $(< or >)$ **Closed circles** are used for numbers that are **less than or equal or greater than or equal** $(\leq or \geq)$	$x \geq 0$   $x < 2$  $-5 \leq x < 4$
Quadratic	A quadratic expression is of the form $\boldsymbol{ax^2 + bx + c}$ where a, b and c are numbers, $\boldsymbol{a \neq 0}$	Examples of quadratic expressions: x^2 $8x^2 - 3x + 7$ Examples of non-quadratic expressions: $2x^3 - 5x^2$ $9x - 1$
Factorising Quadratics	When a quadratic expression is in the form $x^2 + bx + c$ find the two numbers that **add to give b** and **multiply to give c**.	$x^2 + 7x + 10 = (x + 5)(x + 2)$ (because 5 and 2 add to give 7 and multiply to give 10) $x^2 + 2x - 8 = (x + 4)(x - 2)$ (because +4 and -2 add to give +2 and multiply to give -8)
Difference of Two Squares	An expression of the form $\boldsymbol{a^2 - b^2}$ can be factorised to give $\boldsymbol{(a + b)(a - b)}$	$x^2 - 25 = (x + 5)(x - 5)$ $16x^2 - 81 = (4x + 9)(4x - 9)$

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Topic/Skill	Definition/Tips	Example
Simultaneous Equations	A set of **two or more equations**, each involving **two or more variables** (letters). The **solutions** to simultaneous equations **satisfy both**/all of the **equations**.	$2x + y = 7$ $3x - y = 8$ $x = 3$ $y = 1$
Variable	A **symbol**, usually a **letter**, which **represents a number** which is usually unknown.	In the equation $x + 2 = 5$, x is the variable.
Coefficient	A **number** used to **multiply** a **variable**. It is the number that comes before/in front of a letter.	6z 6 is the coefficient z is the variable

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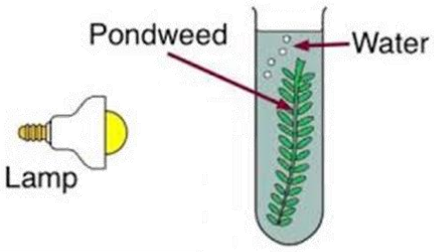
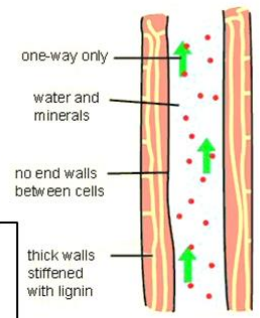
Year 9 Science Plants

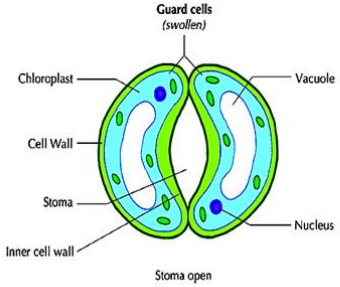


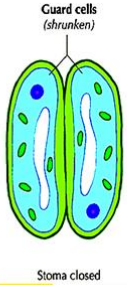
We can investigate the rate of photosynthesis by seeing how many bubbles are produced per minute. The bubbles contain the oxygen that is made in the reaction. By changing one factor such as the colour of the light, the temperature of the water or the distance of the lamp from the plant we can determine effect of that factor on the amount of photosynthesis a plant can do.



xylem vessel

Transpiration – the rate at which water is lost from the leaves of a plant. The transpiration stream is the column of water moving through the roots, stem and leaves.





Guard cells are found mostly on the underside of leaves, they can change shape so the stomata are open or closed. Thus regulates the movement of Carbon dioxide and water vapour in and out of the leaf.

Glucose from photosynthesis is used in a range of ways.

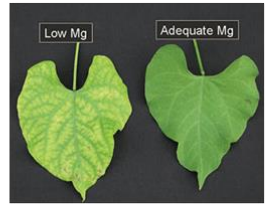
- Glucose for respiration
- Starch, fats, oils and seeds as stores.
- Cellulose for strength
- To make proteins for growth and enzymes.

We use plants mostly as food but we can also use them for fabrics, fuels and medicines such as aspirin, digitalis and Penicillin

Leaves are adapted to carry out the maximum amount of photosynthesis they can do.

- Waxy cuticle – reduce water loss
- Spongy Mesophyll – air spaces to make diffusion easier
- Thin – shorter diffusion distance
- Palisade cells - large numbers of chloroplasts to maximise photosynthesis

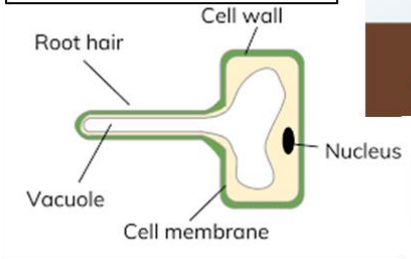
Magnesium is used to make chlorophyll so if a plant doesn't get enough it means the plant cant do enough photosynthesis as it can trap enough light.

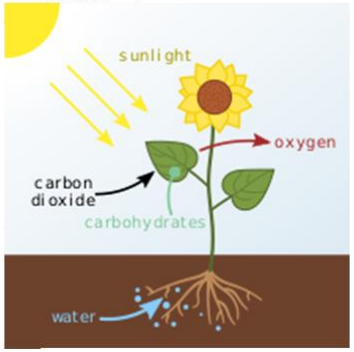


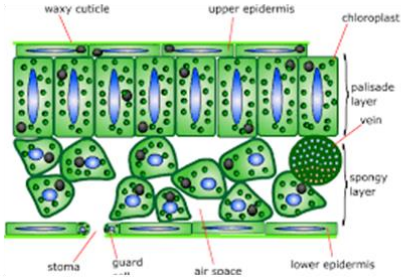
Plants can have diseases like animals, some of these diseases are caused by deficiencies, others are communicable.

Tobacco mosaic virus occurs in several species, the pattern in the leaves reduces the amount of chlorophyll and affects the amount of photosynthesis which occurs. This limits the growth of the plant.

Root hair cells are adapted to absorb water by having an increased surface area, no chloroplast and having thin membranes to maximise absorption







$$6CO_2 \text{ Carbon dioxide} + 6H_2O \text{ Water} \xrightarrow[\text{Chlorophyll}]{\text{Light}} C_6H_{12}O_6 \text{ Glucose} + 6O_2 \text{ Oxygen} + 6H_2O \text{ Water}$$

Rose black spot is a fungal disease transmitted by wind or water, where black or purple spots develop on the leaves. This cause the leaves to yellow and eventually stunts the growth of the plant.

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Key term	Definition	Key term	Definition	Key Term	Definition
Stomata	Openings in the leaves of plants	Absorption	Taking in	Producer	An organism which can make its own food
Guard cell	a pair of curved cells that surround a stoma, becoming larger or smaller according to the pressure within the cells	Spongy mesophyll	A layer of cells in leaves, consisting of loosely arranged, irregularly shaped cells that have chloroplasts.	Diffusion	The process in which particles in a liquid or gas move from an area of high concentration to an area of low concentration
Palisade cell	Plant leaf cell that is long and narrow and packed with chloroplasts: found mainly in upper part of leaf	Photosynthesis	A chemical reaction carried out by green plants during which light energy is used to convert carbon dioxide and water in to glucose and oxygen,	Xylem	Plant cells which join together to form a 'pipeline' through the stem of the plant which carries water and minerals from the roots upwards.
Deficiency disease	Illness caused by lack of a certain nutrient	Evaporation	The process where a liquid turns to a gas at the surface of the liquid	Respiration	Chemical reaction which releases energy from glucose in living organisms
Waxy cuticle	Thin waterproof layer found on the surface of leaves.	Root hair cell	Specialised plant cells in roots of plants adapted to absorb water and minerals	Starch	Large molecule made by plants as a form of food storage
Cellulose	A carbohydrate used to make cell walls	Glucose	Simple sugar made in photosynthesis	Protein	Food group important for growth and tissue repair
Digitalis	A drug extracted from foxglove	Aspirin	A painkilling drug made from the bark of willow trees	Pathogen	A disease causing microbe
Transpiration	Movement of water through a plant from root to leaf	Penicillin	Antibiotic medicine formed from the *Penicillium* Fungus	Fungus	Spore producing organisms which can cause illness
Bacteria	Microscopic organisms, some of which can cause disease or illness	Stimulant	A substance which increases the rate of reactions in the body	Drug	A substance, often chemical, I which has an affect on the body
Antibody	A protein produced by the immune system to kill a specific pathogen	Depressant	A substance which decreases the rate of reactions in the body	Toxin	A substance that damages a living organism
Virus	An infectious agent which multiplies inside living cells.	Painkiller	A substance which inhibits pain signals in the body	Hallucinogen	A substance which changes the information sent through the nervous system
Arteries	Blood vessels that carry blood away from the heart. They usually carry oxygenated blood and have a pulse	Eukaryotic cell	Cells from eukaryotes that have a cell membrane, cytoplasm, and genetic material enclosed in a nucleus	haemoglobin	The red pigment that carries oxygen around the body in the red blood cells
Diffusion	The spreading out of the particles of any substance in a solution, or particles in a gas, resulting in a net movement of particles from an area of high concentration to an area of low concentration	Prokaryotic cell	From prokaryotic organisms, have a cytoplasm surrounded by a cell membrane, and a cell wall. Genetic material is free in the cytoplasm with no nucleus	Vaccination	A sample of dead or weak pathogens which are introduced to the body to produce white blood cells and provide protection
Veins	Blood vessels that carry blood towards the heart. They usually carry deoxygenated blood	Capillaries	The smallest blood vessels. They run between individual cells and have a wall one cell thick	Double circulatory system	The circulation of blood from the heart to the lungs is separate from the circulation from the heart to the rest of the body
Coronary arteries	The blood vessels that supply oxygenated blood to the heart muscle	Blood group	The type of blood is categorised into either A, B, AB, or O blood groups, depending on the antigen	Blood transfusion	An injection of a volume of blood, previously taken from a healthy person, into a patient

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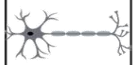
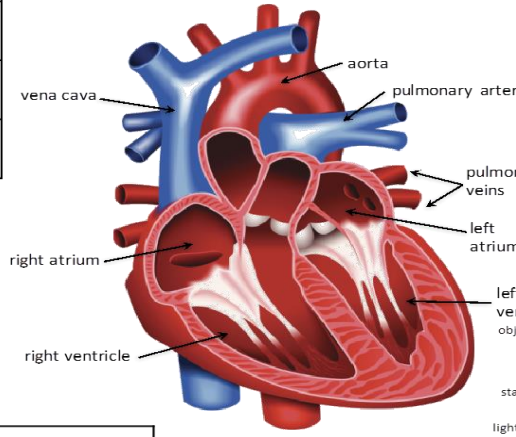
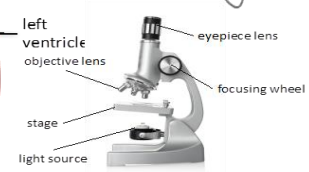
Organelle	*Function*	Where it is found	Description
Cytoplasm	*Site of chemical reactions in the cell*	A, P, B	Gel like substance containing enzymes to catalyse the reactions
Nucleus	*Contains genetic material*	A, P	Controls the activities of the cell and codes fro proteins
Cell Membrane	*Semi permeable*	A, P, B	Controls the movement of substances in and out of the cell
Ribosome	*Site of protein synthesis*	A, P, B	Mrna is translated to an amino acid chain
Mitochondrion	*Site of respiration*	A, P	Where energy is released for the cell to function
Permanent Vacuole	*Contains cell sap*	P	Keeps cell turgid, contains sugars and salts in solution
Cell Wall	*Made of cellulose*	P, B	Supports and strengthens the cell
Chloroplast	*Site of photosynthesis*	P	Contains chlorophyll, absorbs light energy
Bacterial DNA	*Not in nucleus, floats in the cytoplasm*	B	Controls the function of the cell
Plasmid	*Small rings of DNA*	B	Contain additional genes

nerve	Animal		*carry electrical signals*	long branched connections and insulating sheath
xylem	Plant		*carry water and minerals*	TRANSPIRATION - dead cells cell walls toughened by lignin flows in one direction
Red blood cell	Animal		***Carries oxygen***	Large surface area, no nucleus, full of haemoglobin.
White blood cell	Animal		***Part of the immune system***	Some produce antibodies, others surround and engulf pathogens.



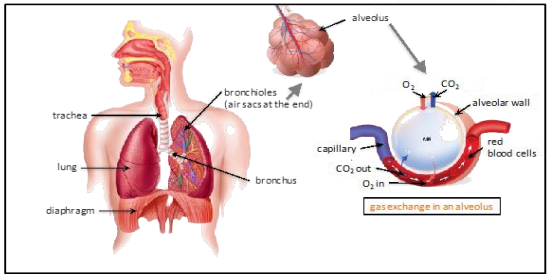


Cells	***e.g. palisade cell***	The basic building blocks of all living organisms.
Tissues	***e.g. mesophyll tissue***	A group of cells with a similar structure and function.
Organs	***e.g. leaf***	Aggregations (working together) of tissues performing a specific function.
Organ systems	***e.g. the circulatory system***	Organs working together to form organ systems, which work together to form an organism.

Animal cell

Plant cell

Plasma (55%)	***Pale yellow fluid***	Transports CO_2, hormones and waste.
Red blood cells (45%)	***Carries oxygen***	Large surface area, no nucleus, full of haemoglobin.
White blood cells (<1%)	***Part of the immune system***	Some produce antibodies, others surround and engulf pathogens.
Platelets (<1%)	***Fragments of cells***	Clump together to form blood clots.



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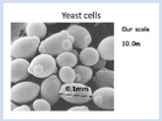
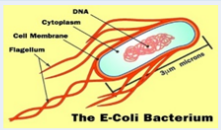
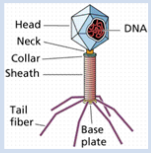
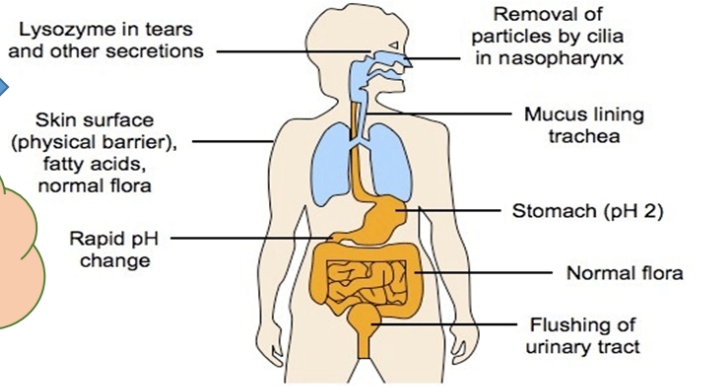
Pathogen: a disease causing microorganism		
Fungus eg athlete's foot		May be single cells (yeast) but usually join to form threads. Fungi feed on dead and decaying material or on living cells.
Bacteria eg *E. coli*, *Lactobacillus*		Single-celled prokaryotes. There are many different shapes. Bacteria absorb food from their environment. Their wastes can be harmful to us (toxins).
Virus eg influenza, *Ebola*		Viruses are very simple – typically they have a strand of DNA surrounded by a protein coat. They can only survive and reproduce in other living cells so some people think they are not really alive.

How pathogens spread	Example	Details
Airborne (droplet infection)	Cold, influenza	Virus in droplets in coughs/sneezes
Dirty water	Cholera, typhoid	Bacteria in urine/faeces enters rivers
Food	*Salmonella, E. coli*	Undercooked food doesn't kill bacteria
Direct contact (broken skin)	Tetanus	Bacteria enters through cuts
Direct contact (sexual contact)	Chlamydia	Bacteria passes through body fluids
Direct contact	Chicken pox	Virus passes through contact with spots
Animal vector	Malaria, rabies	Through bites into blood

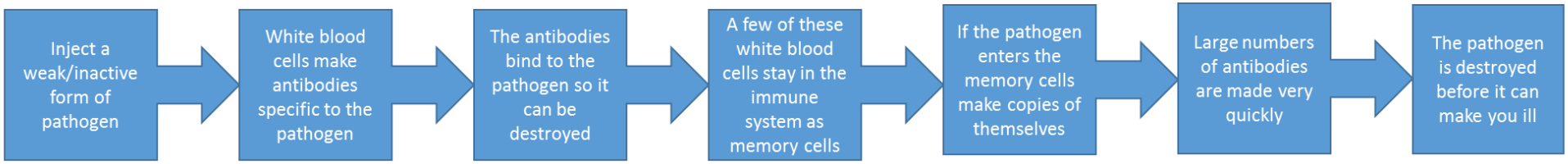
A drug is a substance that has an effect on the body. Medicines are drugs that help people suffering from pain or disease; recreational drugs are taken by people because they like the effects on their bodies	
Depressant eg alcohol, cannabis	slows down messages in brain and nervous system, lowers inhibitions. Can cause long term damage to liver, brain, heart
Stimulant eg caffeine, nicotine	speed up messages in brain and nervous system, feel more alert but can lead to insomnia and headaches.

Barriers to disease

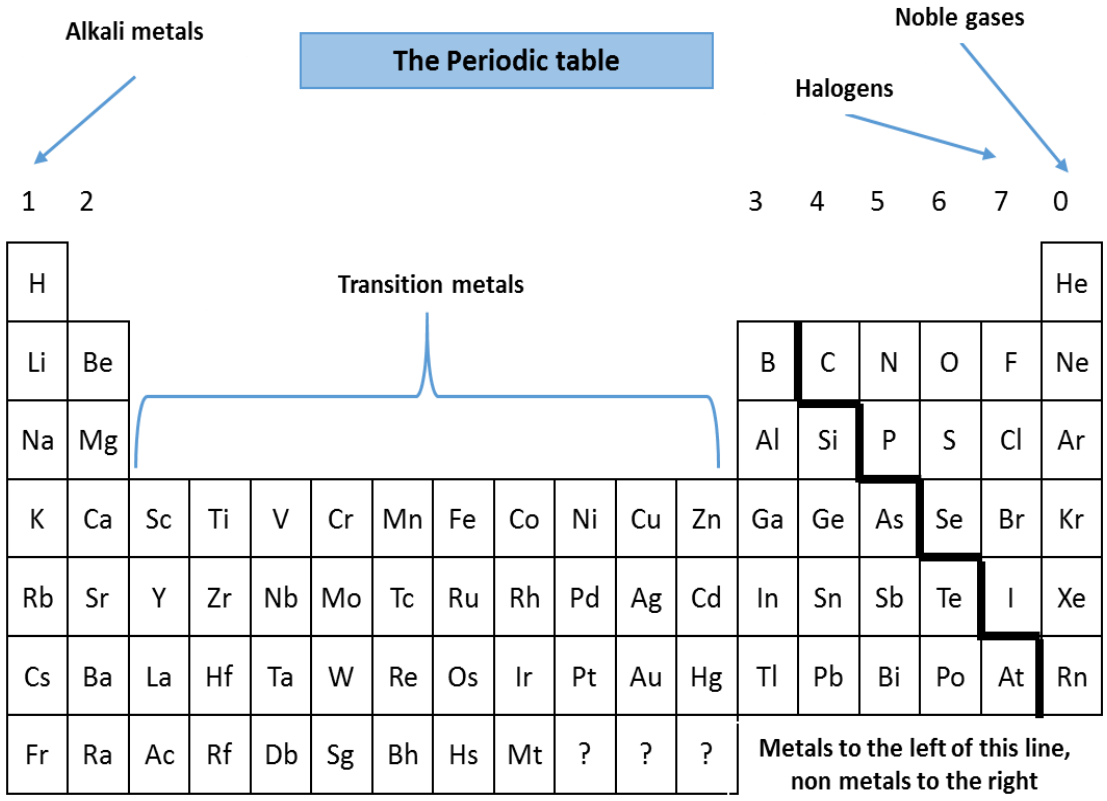


Year 9 Science Diseases

How vaccinations work



Chemistry Year 9 Term 1 Atoms and Molecules



Elements arranged in order of atomic number	*Elements with similar properties are in columns called groups*	Elements in the same group have the same number of outer shell electrons and elements in the same period (row) have the same number of electron shells.

Metals and non metals

Metals	*To the left of the Periodic table*	Form positive ions. Conductors, high melting and boiling points, ductile, malleable.
Non metals	*To the right of the Periodic table*	Form negative ions. Insulators, low melting and boiling points.

Chemistry Year 9 Term 1 Trends

Group 1 The Alkali Metals	
Very reactive with oxygen, water and chlorine	Only have one electron in their outer shell. Form +1 ions.
Reactivity increases down the group	Negative outer electron is further away from the positive nucleus so is more easily lost.

With oxygen	Forms a metal oxide	Metal + oxygen → metal oxide	e.g. $4Na + O_2 \rightarrow 2Na_2O$
With water	Forms a metal hydroxide and hydrogen	Metal + water → metal hydroxide + hydrogen	e.g. $2Na + 2H_2O \rightarrow 2NaOH + H_2$
With chlorine	Forms a metal chloride	Metal + chlorine → metal chloride	e.g. $2Na + Cl_2 \rightarrow 2NaCl$

Group 7 The Halogens	
Consist of molecules made of a pair of atoms	Have seven electrons in their outer shell. Form -1 ions.
Melting and boiling points increase down the group (gas →liquid →solid)	Increasing atomic mass number.
Reactivity decreases down the group	Increasing proton number means an electron is more easily gained

With metals	Forms a metal halide	Metal + halogen → metal halide e.g. Sodium + chlorine → sodium chloride	e.g. NaCl metal atom loses outer shell electrons and halogen gains an outer shell electron
With hydrogen	Forms a hydrogen halide	Hydrogen + halogen → hydrogen halide e.g. Hydrogen + bromine → hydrogen bromide	e.g. $Cl_2 + H_2 \rightarrow 2HCl$
With aqueous solution of a halide salt	A more reactive halogen will displace the less reactive halogen from the salt	Chlorine + potassium bromide → potassium chloride + bromine	e.g. $Cl_2 + 2KBr \rightarrow 2KCl + Br_2$

Group 0 The Noble Gases	
Unreactive, do not form molecules	This is due to having full outer shells of electrons
Boiling points increase down the group	Increasing atomic number.

Chemistry Year 9 Term 1 Metals

Reactions of acids

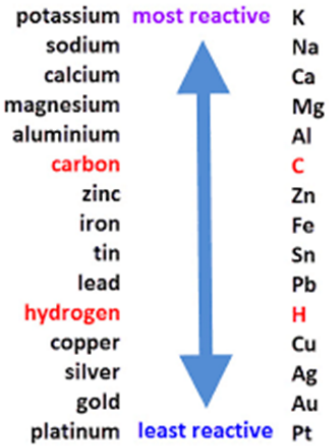
Reactions with acids	*metal + acid → metal salt + hydrogen*	**magnesium + hydrochloric acid → magnesium chloride + hydrogen** **zinc + sulfuric acid → zinc sulfate + hydrogen**

Reactions of acids and metals	Acids react with some metals to produce salts and hydrogen.
Extraction of metals and reduction	Unreactive metals, such as gold, are found in the Earth as the metal itself. They can be mined from the ground.

Metals form positive ions when they react	*The reactivity of a metal is related to its tendency to form positive ions*	The reactivity series arranges metals in order of their reactivity (their tendency to form positive ions).
Carbon and hydrogen	*Carbon and hydrogen are non-metals but are included in the reactivity series*	These two non-metals are included in the reactivity series as they can be used to extract some metals from their ores, depending on their reactivity.
Displacement	*A more reactive metal can displace a less reactive metal from a compound.*	Silver nitrate + Sodium chloride → Sodium nitrate + Silver chloride

Reactivity of metals

The reactivity series



Extraction using carbon	
Metals less reactive than carbon can be extracted from their oxides by reduction.	For example: **zinc oxide + carbon → zinc + carbon dioxide**

	Reactions with water	Reactions with acid
Group 1 metals	*Reactions get more vigorous as you go down the group*	*Reactions get more vigorous as you go down the group*
Group 2 metals	*Do not react with water*	*Observable reactions include fizzing and temperature increases*
Zinc, iron and copper	*Do not react with water*	*Zinc and iron react slowly with acid. Copper does not react with acid.*

Chemistry Year 9 Term 2 Separation Techniques

Mixtures	***Two or more elements or compounds not chemically combined together***	Can be separated by physical processes.

Method	Description	Example
Filtration	***Separating an insoluble solid from a liquid***	To get sand from a mixture of sand, salt and water.
Crystallisation	***To separate a solid from a solution***	To obtain pure crystals of sodium chloride from salt water.
Simple distillation	***To separate a solvent from a solution***	To get pure water from salt water.
Fractional distillation	***Separating a mixture of liquids each with different boiling points***	To separate the different compounds in crude oil.
Chromatography	***Separating substances that move at different rates through a medium***	To separate out the dyes in food colouring.

Chemistry Year 9 Term 2 Acids

Soluble salts	*Soluble salts can be made from reacting acids with solid insoluble substances (e.g. metals, metal oxides, hydroxides and carbonates).*
Production of soluble salts	*Add the solid to the acid until no more dissolves. Filter off excess solid and then crystallise to produce solid salts.*

Acid name	Salt name
Hydrochloric acid	Chloride
Sulfuric acid	Sulfate
Nitric acid	Nitrate

Common Acid Formulas	***H_2SO_4 – Sulphuric Acid, HNO_3 – Nitric Acid, HCl – Hydrochloric Acid***

Neutralisation of acids and salt production	**sodium hydroxide + hydrochloric acid → sodium chloride + water** **calcium carbonate + sulfuric acid → calcium sulfate, + carbon dioxide + water**

Neutralisation	*Acids can be neutralised by alkalis and bases*	An **alkali** is a soluble base e.g. metal hydroxide. A **base** is a substance that neutralises an acid e.g. a soluble metal hydroxide or a metal oxide.

Year 9 Term 1 Knowledge Organiser Booklet

Physics topic 1: Energy Transfers

Key Term	Definition
Newton's 1st Law	If the resultant force acting on an object is zero and: • the object is stationary, the object remains stationary • the object is moving, the object continues to move at the same speed and in the same direction. So the object continues to move at the same velocity.
Resultant force	A resultant force is the single force obtained by combining a system of forces
Kinetic energy (KE)	The energy an object has because it is moving
Gravitational potential energy (GPE)	The energy an object has because of its position (height)
Elastic potential energy	The energy stored in a springy object when you stretch or squash it
Thermal Energy	The energy of a substance has because of its temperature
Chemical energy	The energy stored in fuels, food and batteries
Conservation of energy	Energy can be transferred usefully, stored or dissipated, but cannot be created or destroyed.
Work done	The energy transferred by a force
Dissipation	The process of energy being transferred or lost to the surroundings
Friction	A force that opposes movement
System	An object or group of objects
Closed system	An isolated system where no energy transfers take place into or out of the energy stores in the system.

Equations to recall and apply

Work done, W = force applied, F x distance moved, s
(joules, J) (newtons, N) (metres, m)

Change in gravitational potential energy, ΔE_p (joules, J) = Mass, m (kilograms, kg) x Gravitational field Strength, g (Newtons per kilogram, N/kg) x Change in Height, Δh (metres, m)

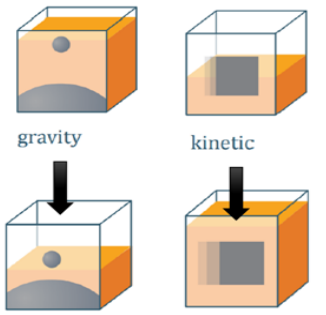
Energy stores

1. Chemical
2. Kinetic
3. Electrostatic
4. Gravitational potential
5. Elastic potential
6. Thermal
7. Magnetic
8. Nuclear

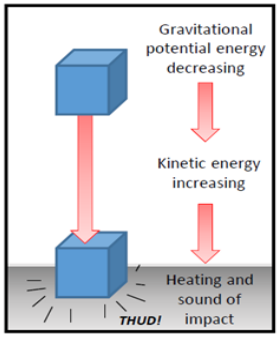
Energy can be transferred by:

1. Force when it moves an object
2. Heating
3. Waves (e.g. Light or Sound)
4. Electric current

Conservation of energy in action



A falling object:
1. Decreases its GPE store
2. Increases its KE store as it falls
3. Waste energy transferred as thermal and sound



Year 9 Term 1 Knowledge Organiser Booklet

Physics topic 2: Matter

Key Term	Definition
Density	The amount of mass in a given volume
Internal energy	The sum of the kinetic and potential energy in a substance
Brownian motion	The random movement of fluid (liquid or gas) particles
Physical change	A change when matter changes form, but not chemical identity. A physical change can be reversed
Chemical change	A chemical change results from a chemical reaction. A chemical change cannot be reversed.

Equations to recall and apply

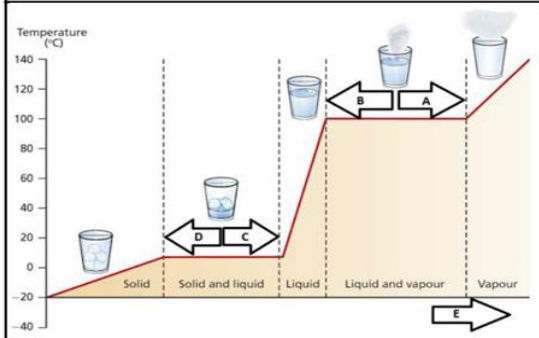
$$\rho = \frac{m}{V}$$

Symbol	Meaning	Unit
ρ	density	kg/m³
m	mass	kg
V	volume	m³

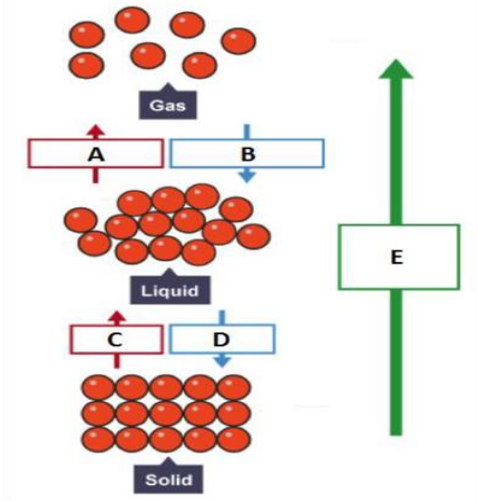
Equation steps to follow:

Equation steps to follow:
1. Write out equation
2. Insert numbers
3. Rearrange if needed
4. Calculate answer
5. Remember units

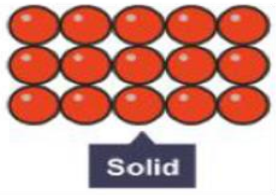
Changes of state



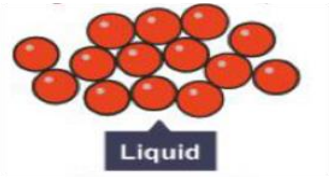
A. Evaporation
B. Condensation
C. Melting
D. Freezing
E. Increasing internal energy



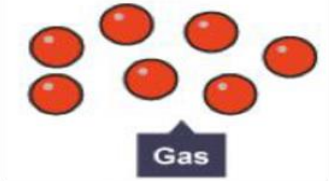
State properties



- Regular structure
- Fixed shape and volume
- Particles vibrate on spot



- Particles are touching, but can flow past each other
- No fixed shape – Takes the shape of the container
- Fixed volume



- Particles are spaced apart
- Moving in constant random motion
- Moving with a range of speeds in a range of directions
- No fixed volume or shape
- Takes shape of the container

Year 9 Term 1 Knowledge Organiser Booklet

Key terms and definitions	
Contrast	Difference and variety i.e. Dark against light
Composition	A formal element in art. The placement and arrangement of your artwork and how shapes relate within it. i.e. The layout and positioning of your work
Mark- Making	Different patterns, lines, textures and shapes made with a pencil i.e. scribble, cross- hatching
Proportion	Comparison of size. The relative size of parts of a whole i.e. Are the eyes the right size for the face?
Formal Elements	Formal Elements are parts used to make a piece of art work. The 8 elements are Line, Form, ,Shape, Tone, Pattern, Texture, Colour and Composition
Block colour	Apply one even coat of colour to a surface without any imperfections
Texture	Is a formal element which has an actual surface quality i.e. adding sawdust to paint or creating an illusion of a surface i.e. furry, scratchy etcetera
Shape	Is a formal element in art; it is an enclosed space. Shapes are limited to 2 dimensions which are length and width
Graduated Shading	Shading with a pencil/ pencil to create depth. Where dark gradually turns into light without any imperfections
Guidelines	Creating a series of lines to draw within so everything is the same size i.e. A title in your sketchbook so you can get all your letters the same size
Primary Colour	A group of colours which all other colours are made from: Red , Yellow and Blue
Secondary Colour	A colour resulting from mixing two primary colours together i.e. Red and Yellow = Orange
Blending	Gently bringing together two or more colours to create the softening of lines i.e. shading blue and yellow together to create blue graduating to green graduating to yellow.
Definition	To make something "Stand out" and become obvious
Depth	Creating 3 dimensions by using graduated shading
Form	Creating a drawing of object which has the appearance of length, width & depth i.e. Creating a 3 dimensional effect

Key terms and definitions	
Tone	Is an formal element in art and literally means light and dark

Mixed Media Theme 1 Landscapes, seascapes and Environments

Environments and landscapes exist all around us and form part of our daily lives. We exist in them and they form the architectural, urban, industrial and rural environment around us. Looking at appropriate artists **such as** Beatrice Williams, Janet Bell, Kyle Henderson, Seth Clarke, John Virtue, Aldo Rossi, Charles Demuth or an artist of your choice produce a series of work which answers the starting point.

Mixed Media Theme 2 Portraiture

Portraiture can take many forms from the hyper realism of the American artist Chuck Close to the abstraction of Pablo Picasso, to the oppressive and emotive paintings of Kathe Kollwitz, to the feel good and colourful paintings of Anita Klein. Researching an artist(s) of your choice explore work which inspires and informs the theme of portraiture.

Year 9 Term 1 Knowledge Organiser Booklet

Christian Beliefs

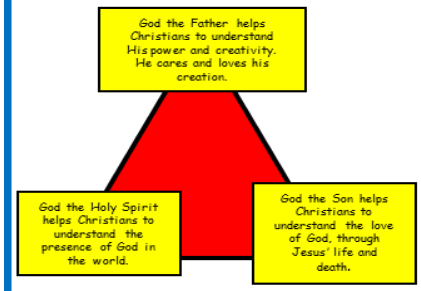
1. The Trinity

Christians believe that there is only one God. The Nicene Creed explains that there is one being – God – experienced as three persons, Father, Son and Holy Spirit, who are all equal and all eternal.

'We believe in one God, the Father, the Almighty...we believe in one Lord Jesus Christ, the only Son of God, eternally begotten of the Father, God from God...begotten not made, of one Being with the father...We believe in the Holy Spirit, the Lord, the giver of life, who proceeds from the Father and the Son'

Oneness of God

Believing in one God is called monotheism. Christians believe this because:
- Teachings in the Old and New Testament of one God
- First of the 10 commandments which are rules about belief and behaviour
- Teachings of the Church as seen in the Creeds



Christian attitudes

Many Christians find the Trinity a difficult concept but believe in the different aspects of one God. There are some Christian groups that do not accept the Trinity as stated in the creed. They are:
- Church of Latter Day Saints (Mormons) *three separate beings united as one God*
- Jehovah's witnesses *Only one true God, Jesus was created by God and so God's son and Holy Spirit is Gods power.*
- Unitarians *Only one God, Jesus was a man and no difference between God and Holy Spirit.*

How the Trinity is used in belief and worship

- The Nicene Creed is repeated during Eucharist weekly
- Catholics show their belief in the Trinity by crossing themselves when they enter a Church.
- Priests begin their sermons with 'In the name of the Father, and of the Son and of the Holy Spirit'
- Baptisms and marriages are performed in the name of the Trinity

2. Creation

All Christians believe that God was responsible for the creation of the universe.

Genesis 1	Genesis 2 & 3
Day 1 – Created heaven and earth, light and day Day 2 – separated the earth from the sky Day 3 – created dry land, plants and trees Day 4 – created sun, moon and stars Day 5 – created fish and birds Day 6 – created animals and humans	- God created the heavens and the earth - Formed man from dust and breathed life into him - Made trees and the Garden of Eden - Made a companion for Adam from his rib - Ate the forbidden fruit from the Garden and condemned to suffer.

Christians attitudes

Literalist – Bible is taken word for word
Conservatives – Writers of the Bible were inspired by God and guided by God
Liberals – Bible is a book of words about God but not words of God. The Bible provides a metaphor or symbolism for Christians.

Creation in the New Testament

John's Gospel records creation in the New Testament:
'In the beginning was the Word, and the Word was with God, and the Word was God' (John 1:1)
Meaning everything was made through the Word and that without the Word 'nothing was made'. John identifies the Word with Jesus, the Son, meaning creation was made by the Trinity.

Importance for Christians today

- Beliefs about Gods creation is that they show God's goodness
- God created human beings in his image, meaning that humans occupy a unique place in creation
- Represents the huge responsibility given to humans to care for God's creation (*Stewardship*)

3. Incarnation

The incarnation is the Christian belief that God became a human being in Jesus. It is believed that due to Adam and Eve's original sin in the Garden of Eden. God and humans could only have a partial relationship. Through the death and resurrection of Jesus, the power of sin was cancelled so it is possible for humans to have a relationship with God and enter heaven. Jesus had two natures, human natures and divine nature. The virgin birth is important as it shows Jesus as the Son of God, if Jesus had been conceived through sex and not the Holy Spirit then Jesus was not incarnate, just a man.

Biblical basis

Matthews Gospel – Talks of the virgin birth and the birth of Jesus
Luke's Gospel – Talks of the visit from Angel Gabriel and the story of Shepherds informed of the birth of Jesus
John's Gospel – identifies Jesus as the Word of God. He firstly refers to Jesus as the creator of everything and light and life of the world. John continues clearly references Jesus as God in human form: the incarnation:

'The Word became flesh and made his dwelling among us. We have seen his glory, the glory of One and Only who came from the Father full of grace and truth' (John 1:14)

The importance and significance of the incarnation

- It shows that God cared so much about the world that he send his Son to show humans what God is like and to teach how to live
- It is the basis of Christian faith
- In Jesus, Christians can see what God is like
- Through the incarnation, God began the process of salvation from sin

4. The last days of Jesus' life

Differences in the records of the Gospels

- Johns Gospel claims that Jesus' body was anointed with spices before it was placed inside the tomb.
- Matthews gospel claims that there was a violent earthquake on the Sunday morning, an angel came and rolled the stone away from the tomb entrance.
- Matthew claims that the guards of the tomb were paid to say that the disciples had stolen the body
- Johns Gospel claims that Mary Magdalene found the tomb empty. She then met Jesus and mistook him for a gardener.

The importance of these events in understanding the purpose of the life of Jesus Christ

- The Last Supper is the basis of the Eucharist, the most important form of Christian worship
- Christians believe that Jesus' death brought about salvation from sin
- The resurrection is the basis of the Christian belief in life after death and the promise that death is not the end.
- The ascension reminds Christians that Jesus has gone to heaven to prepare a place for them so they don't fear death.

The Last Supper	The night before his crucifixion (Maundy Thursday) Jesus shared a meal with his disciples. Jesus broke bread and drank wine and gave instruction to do this in remembrance of him. *Then he too the cup, gave thanks and offered it to them, saying, 'Drink from it, all of you. This is the new covenant in my blood which is poured out for you.' (Luke 22:20)*
The betrayal and arrest	Judas handed Jesus over to the Roman army for silver. There was a fight between the disciples and the chief priests who came to arrest him. Jesus ordered there to be no violence and was arrested.
The trial	Jesus was taken to trial who condemned him for claiming to be 'the Christ, the son of God', which they regarded as blasphemy. Pontius Pilate offered the release of a prisoner, the crowd chose another so Jesus was condemned to crucifixion, the soldiers laid a crown of thorns on his head and mocked him. The disciples ran away, only the women followers stayed by Jesus.
The crucifixion	Jesus and Simon of Cyrene carried the cross and Jesus was crucified on it on Friday. Jesus was taunted by the bystanders. The crucifixion lasted over 3 hours before Jesus died in agony.
The resurrection	Early on the Sunday morning, women went to anoint the body with spices. When they entered the tomb it was empty. The women were then visited by two men who told them that Jesus had risen which they passed onto the disciples. Jesus then appeared to the disciples.
The ascension	St Luke records that 40 days after the resurrection, Jesus told the remaining disciples to stay and receive the Holy Spirit then he was taken up from them into a cloud and two men in white appeared to tell them that Jesus had been taken into heaven (Acts 1:4-11)

5. The nature of salvation

Sin is an action that breaks God's law. Sin makes it difficult to have a relationship with God. Sin can be original sin (inherited from Adam and Eve) or personal sin (consequence of a persons actions). Many Christians believe that those who die with unforgiven sin will not be able to enter heaven.
Salvation means being saved from sin. This is essential to have a relationship with God while on earth to achieve a place in heaven.

Role of Jesus in salvation

When Jesus died on the cross, his death paid for human sins and gave people the chance of salvation. When people believe in Jesus they believe that they receive God's grace, which helps them to lead a good Christian life.
'For God did not send his Son into the world to condemn the world, but to save the world through him' (John 3:17)
Christians sometimes use the term atonement to describe the role of Jesus. Atonement means reconciliation between humans and God. Christians can receive the salvation offered by Jesus' death by:
- Receiving the sacrament of baptism and confirmation
- Receiving the sacrament of the Eucharist
- Leading a Christian life

Why is salvation from sin important to Christians?

- Without salvation a persons sin can prevent them from a relationship with God and send them to hell or purgatory after death
- Salvation is the only way to eternal life
- Salvation from sin was the purpose of the life, death and resurrection of Jesus.

Different Christians understanding of atonement

Roman Catholic view	Evangelical Protestant view	Liberal Protestant view
Jesus sacrificed his life in an act of love to show his fathers love for humanity. Salvation comes from receiving the sacraments.	'Penal substitution theory' – God's justice meant that he needed to punish human sin but Jesus acted as a substitute for us. Salvation comes through faith in Jesus as the saviour	Jesus bought about atonement by acting as a moral example for humanity, through his teaching and life. Salvation comes through living the Christian life and following the teachings/example of Jesus

6. Christian eschatology

Resurrection of the body

Some Christians believe that when people die their soul remains in the grave until the time when God will end the world. This is known as the Last Day, which will follow the Second Coming of Jesus. At this time, the dead will be raised and both the living and the dead will be given resurrection bodies. Everyone will appear in front of God for the final judgment. Some believe that those who have repented their sins will go to heaven. All others will go to hell as they have rejected God's love. Many believe this because of Jesus' body which physically rose from the dead.

Immortality of the soul

Many Christians believe that people are made of body and soul. They believe that the soul is non-material and immortal. They believe that when the body dies, the soul leaves the body to live with God. They believe in this because after the ascension, Jesus became a spirit and went to the spirit world.

Purgatory

Catholic Christians believe that purgatory is the place where those Christians who have died with unforgiven sins go to be purified of their sins so that they can go to heaven.

What does the Bible say about life after death?

A major Bible teaching on life after death comes from St Paul in 2 Corinthians 5:1-10, where he says:
- Christians know that if their body is destroyed they will have a non-physical home in heaven
- Christians long to be in heaven which is their goal
- Christians do all they can to please God on earth
- They do this as they know that everyone will appear before God to be judged on the good or bad they have done.

Heaven and hell

All Christians believe in heaven as a perfect place in the company of God. There are different attitudes about heaven and hell amongst Christians:
- Most Christians believe that all Christians will eventually go to heaven and that good followers of any religion may go to heaven
- Some Christians believe that only good Christians will go to heaven but bad Christians and everyone else will go to hell
- Some believe that all good people go to heaven whatever they believe
- Other Christians believe that there is no hell, only levels of heaven

Why are these teachings important to Christians today

- Christians will try to live a good life (Parable of the sheep and the goats)
- Christians will seek salvation/atonement and avoid committing sin
- Give Christians' lives meaning and purpose. They will be rewarded for their good deeds which makes it all worthwhile.

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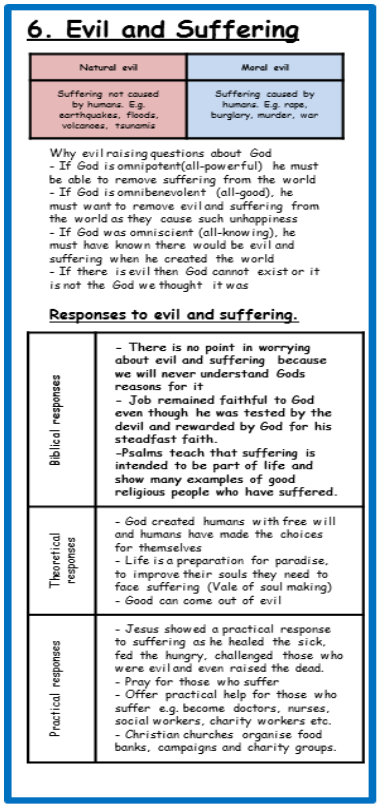

6. Evil and Suffering

Natural evil	Moral evil
Suffering not caused by humans. E.g. earthquakes, floods, volcanoes, tsunamis	Suffering caused by humans. E.g. rape, burglary, murder, war

Why evil raising questions about God
- If God is omnipotent(all-powerful) he must be able to remove suffering from the world
- If God is omnibenevolent (all-good), he must want to remove evil and suffering from the world as they cause such unhappiness
- If God was omniscient (all-knowing), he must have known there would be evil and suffering when he created the world
- If there is evil then God cannot exist or it is not the God we thought it was

Responses to evil and suffering.

Biblical responses	- There is no point in worrying about evil and suffering because we will never understand Gods reasons for it - Job remained faithful to God even though he was tested by the devil and rewarded by God for his steadfast faith. -Psalms teach that suffering is intended to be part of life and show many examples of good religious people who have suffered.
Theoretical responses	- God created humans with free will and humans have made the choices for themselves - Life is a preparation for paradise, to improve their souls they need to face suffering (Vale of soul making) - Good can come out of evil
Practical responses	- Jesus showed a practical response to suffering as he healed the sick, fed the hungry, challenged those who were evil and even raised the dead. - Pray for those who suffer - Offer practical help for those who suffer e.g. become doctors, nurses, social workers, charity workers etc. - Christian churches organise food banks, campaigns and charity groups.

Topics	I've got it!	Bits and bobs!	Oh dear!
The trinity			
The creation of the universe and of humanity			
The incarnation			
The last days of Jesus' life			
The nature and significance of salvation and the role of Christ within salvation			
Christian eschatology			
The problem of evil/suffering and a loving and righteous God			
Divergent solutions offered to the problem of evil/suffering and a loving and righteous God			

Key term	Definition	Key term	Definition
Multi Faith	Lots of religions OR different religions, are allowed to co-exist and be followed or practiced.	**Belief**	An opinion that something is true often without any real evidence.' (Ideas that you accept without question).
Cohesion	The act of working together for a course.	**Faith**	Faith is when a person believes something to be true and puts their 'trust' in what they believe to be true.
Religious Freedom	The right to practise your religion or change religions	**Peace**	A state or period of time, where there is freedom from disturbance and everyone can co-exist together without conflict or tension.
Respect	A feeling of deep admiration for someone or something because of their abilities, qualities, or achievements.	**Eternal**	Everlasting, will last forever.
Rules	Laws which say how you should behave or the way in which you should behave.	**Theist**	Someone who is certain that God does exist.
Omnipresent	Always present	**Church**	Religious building and place of worship in Christianity.
Benevolent	All Loving	**Omniscient**	All knowing

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Key term	Definition	Key term	Definition
Omnipotent	All powerful	**Prayer**	An act of communication with God in religion.
Rituals	Actions that you perform e.g. Kneeling to pray	**Diversity**	Many or different.
Communication	Exchanging of information in written or verbal form.	**Community**	A group of people that are connected or have shared characteristic in common such as: Meeting to worship.
Free Will	Humans are free to make their own choices.	**Bible**	Holy Book in Christianity.
Merciful	The belief that God forgives the things that people do wrong. He is compassionate when people are sorry.	**Monotheistic**	Belief there is only one God.
Supernatural	Something beyond the physical world.	**Resurrection**	Belief that after death the body stays in the grave, until the day of judgement, when it will be raised again.
Just	The belief that God judges people in a fair and unbiased way.	**Heaven**	A place of paradise in the presence of God.
Hell	An unpleasant place away from God.	**Immortality of the Soul**	The idea that the soul lives on after the death of the body.
Purgatory	A place where Catholics believe souls go after death to be purified.	**Sin**	An act that is against God's will.
Salvation	The act of delivering from sin or saving from evil.	**Grace**	God's gift which gives the strength to be good and holy.
Atonement	Reconciliation between God and humans.	**Reconciliation**	Bringing together people who were opposed to each other.
Sacrament	An outward ceremony through which God's grace is given.	**Christ's Passion**	The betrayal, arrest, trials and crucifixion of Jesus.

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Key term	Definition	Key term	Definition
Ascension	The return of Christ to heaven.	**Treason**	Attempting to overthrow a government or state.
Blasphemy	Speaking disrespectfully about God or sacred things.	**Sanhedrin**	The supreme religious authority in Israel at the time of Jesus.
Prophesised	Predicted events in the future.	**Theological**	Academic study of God and religious ideas.
Gospels	The books of the Bible (Matthew, Mark, Luke and John), which are the only record of Jesus' life.	**Incarnation**	The belief that God took human form in Jesus (became flesh).
Trinity	A Christian belief, that there is one God with three elements e.g. The Father, The Son and the Holy Spirit.	**Stewardship**	Looking after something so it can be passed on to the next generation.
Human dignity	The belief that humans are persons, not things, and that they have self-knowledge and free will.	**Self-knowledge**	Knowing who you are and why you are here.
Anglicans	Members of the Church of England or a Church in communion with the Church of England.	**Holy Communion**	The Christian service of thanksgiving using bread and wine (also called Eucharist).
Lord's Prayer	The prayer Jesus taught his disciples that begins 'Our Father'.	**Creed**	Statement of Christian beliefs.
Creation	The beginning of the world.	**Big Bang**	A scientific explanation for how the world began.
Evil	Wickedness or a wicked deed or person, harmful, unpleasant, morally bad.	**Suffering**	To cause pain either mental, emotional or physical to a human being.
Moral Evil	Evil actions done by humans which cause suffering in the world.	**Natural Evil**	Things which happen which cause suffering but have nothing to do with humans e.g. Earthquakes.

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Quran	Direct message of God revealed to the Prophet Muhammad.	Important because: - Tells humans all they need to know about God, religion and how to live their lives - For Muslims the Qur'an contains only the literal unchanged words of Allah
Hadith	Teachings of the Prophet Muhammad	Important because: - Muhammad was the final prophet and so his words must be important - The best person to interpret the Qur'an must be Muhammad
Sunnah	The footsteps of the Prophets	Important because: - The practices, customs and traditions of the Prophet Muhammad are considered to be a perfect example for a Muslim to follow.

1. Six beliefs of Islam (articles of faith)

These are six principles that a Sunni Muslim must believe to be accepted as a Muslim.

- Belief in **Allah**
- Belief in His **angels**
- Belief in His **holy books**
- Belief in His **messengers**
- Belief in the **Last Day**
- Belief in **life after death**

→ Based on the Qur'an. 'The men of faith. Each one believeth in God and His angels, His books and His apostles' (2: 285)

→ Based on a Hadith of the Prophet Muhammad.

There is some disagreement about the sixth belief. Some believe that it refers to 'destiny', known as predestination (al-Qadr). Therefore some Muslims describe the six beliefs in three categories instead:
- **Tawhid** (the oneness of God)
- **Risalah** (the messengers of Allah)
- **Akhirah** (the last things)

He six beliefs are important because:

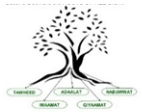
Believing in Tawhid shows that Muslims believe God is the only one, which means he must be the creator of everything, and so must be all powerful	Believing in angels shows that God can communicate with humans using His special beings	Believing in the holy books of God demonstrates that God has sent books to show humans what to believe and how to live

How these impact of Muslim communities today:

- ✓ The six beliefs mean that all people are created equal in the sight of God. No one is superior to others (except because of their religious devotion) therefore people should not judge others
- ✓ These beliefs mean that in Sunni Islam there are no priests or holy men with special authority, there can be no prophets after Muhammad so no human can have God's special authority
- ✓ Salvation in Islam comes through believing in the six beliefs and living in the way set out by Islam

Muslim Beliefs

2. The five roots in Shi'a Islam (Usul as-din)



These are five roots of faith which are the basis of Shi'a faith.

- Belief in the oneness of God (Tawhid)
- Belief in Allah's justice (Adalat)
- Beliefs in Allah's prophets from Adam to Muhammad (Nubuwwah)
- Belief in the successors of Muhammad (imamah) and belief that chosen descendants of the Prophet Muhammad were given special powers by Allah
- Belief in the Day of Judgement

The Usul as-din are important because:

- ✓ They are the basis of Shi'a Islam; it is from the 'roots' that the religion grows
- ✓ They are the five principles of faith and show a person what they must believe to be a Muslim
- ✓ They come from the teachings of the Qur'an and the Twelve Imams, which means they are of utmost importance to Shi'a Muslims.
- ✓ Shi'a Muslims believe that unless they understand and believe the five roots, they will not be able to perform the acts of worship necessary to live the Muslim life
- ✓ They are the beliefs that Muslims must hold if their practices are to be correct and to ensure that they go to heaven

3. The nature of Allah

Muslims believe that God's nature is shown in the 99 names of God which can be found in the Qur'an.

Characteristic	This means..	This is important to Muslims because...
Oneness (Tawhid)	Allah must be the creator of everything since he is the only God, in control of everything and present in the universe He created.	- Muslims must try to preserve the world he created. - Muslims must only worship Allah (to worship others life Allah is shirk)
Omnipotence	Allah has complete powerful. He has created the universe and so must have complete power over it	- Muslims believe that Allah is in control of everything - God will bring the world to an end and has the power to do this
Beneficence and mercy	Beneficence is the idea that not only is Allah good, He is kind and loving to his creation and sent prophets with his word to show humans how to live. The Qur'an also teaches that Allah's mercy is such that if people fail to life the perfect Muslim life, he will forgive them.	- If God is merciful, Muslims should be too - On the Last Day Muslims will be able to ask for mercy if they have shown mercy to others
Justice (Adalat)	Justice means fairness and the maintenance of what is right. Allah' justice is shown in his holy law, Shari'ah and the way he deals with humans on the Last Day.	- God is just and will reward the good and punish the bad - Muslims must try to behave justly and preserve a just society and so work for equal rights and fair laws
Transcendence	Refers to the aspect of God's nature and power which is totally beyond the material world and so human experience and understanding.	- Allah is worthy of human worship as is greater than anything - Allah is not restricted by time, space or matter and so can be contacted by humans wherever they are
Immanence	Allah is close to humans and within the universe he has created.	- Allah is present for all religious activities of a Muslim - Despite God's greatness, Allah can be contacted by humans

4. Risalah (prophet)

Muslims believe that Allah created humans to look after the earth for him (Khalifah) and humans need prophets to know how to do this.

Prophets were all ordinary human beings; what made them different as that they were chosen to receive Allah's messages.

There are many prophets but the main prophets in Islam are:

Adam	- Adam was the first prophet of Islam. Adam and his wife, Hawwa (Eva) at the forbidden fruit in the Garden of Eden. Allah placed Adam and Hawwa on earth to life and Allah forgave them. - Adam built a House of Allah (Ka'aba) in thanks for his forgiveness.
Ibrahim (Abraham)	- Abraham and his wife had no children in old age but then Allah granted him two sons, Isma'il and Ishaq. - Ibrahim had a vision that told him to sacrifice his son, as he was about to obey Allah's commands, Allah stopped him and rewarded them for their obedience. - Ibrahim and Isma'il restored the Ka'aba after it was destroyed by Noah's flood. - Ibrahim was given the 'a message for the nations' and all further prophets were descendants of him.
Isma'il (Ismael)	- Helped his father rebuild the Ka'aba and establish it as a place of pilgrimage - Regarded as the prophet to the Arabs
Musa (Moses)	- Musa was born a Jew but raised by Pharoah. He killed an Egyptian and fled but God called him back to free the Jews from slavery and leave Egypt for God's holy land. - Received the holy book of Tawrat (Torah) but the people distorted his message
Dawud (David)	- Dawud, the great king of Israel was given the holy book of Zabur (Psalms)
Isa (Jesus)	- Isa and Maryam (his mother) are major figures in the Qur'an - Surah 19 records a virgin birth and many miracles of Isa; including healing and raising the dead - Muslims believe that Allah took Isa from the cross so that Isa never died. - Isa was give the holy book Injil (Gospels) however the Qur'an makes it clear that Isa was an ordinary man, not the son of God
Muhammad	- Muhammad was called by Allah to bring his final message to humanity - His message must be followed and those who follow will be rewarded. - His life was a perfect example for people to follow - The message of the previous prophets was distorted so Allah sent Muhammed the holy book, the Qur'an which can never be distorted. - The seal of the prophets – final prophet with Allah's final message to humanity

The prophets teach Muslims:
- Islam is the original religion. Allah taught Islam to Adam and all the following prophets
- Each prophet was given Allah's true message and so Muslims should follow their teachings
- All prophets lived lives whose example could be followed, especially Muhammad. (**Sunnah** contains the prophets life)

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5. Muslim holy books

Muslims believe that God sent prophets with his message and the most important of these were given the message in the form of God's holy book.

There is some dispute over these books because:
- Some Muslims believe that God made one holy book, the Qur'an, and each holy book given to a prophet was simply a copy of that
- Some Muslim scholars believe that the early holy books simply contained certain parts of the Qur'an and that only Muhammad was given the full eternal version of the Qur'an

The purpose of the holy books was so that Muslims knew what to believe and how to live. Muslims are Khalifahs for God and so need to know how to live to protect the world for him the way he wanted.

History

The holy books started with Adam. Unfortunately, humans distorted God's words and so God had to send other messengers. Muslims believe that God sent his word to:
- Ibrahim (Abraham) = Sahifa Ibrahim (Scrolls of Abraham)
- Musa (Moses) = Tawrat (Torah)
- Dawud (David) = Zabur (Psalms)
- Isa (Jesus) = Injil (Gospels) *nb. This is not the same as the New Testament Gospels. They believe that they were recordings of what people remembered of the true Gospels given to Jesus

The Qur'an

Muslims believe that God decided that his word needed revealing in a new way because:
- He had sent it before and each time humans distorted it
- Humans had ignored or disobeyed His message

This meant that the Qur'an needed to be sent to a prophet who could not read or recite but recite God's words; but highly intelligent.

Muhammad was that chosen prophet. He ensured his followers memorised the revelations and later had secretaries to write them down. He checked them for accuracy and his wife Hafsa kept them for him.

When Muhammad died, Abu Bak'r, made the authorised version. All other versions were destroyed by Uthman who organised the Surah's by length and created the official version. This means that the Qur'an used today is the exact words of God revealed to Muhammad. 'An earthly copy of a heavenly original' as all copies of the Qur'an have the same Surahs, words and letters (114 Surahs, 77, 639 Arabic words)

The Qur'an is important to Muslims today because:
- Everything in the Qur'an must be true because God said it and so there is no greater authority
- It tells Muslims what to believe – Allah, Angels, Prophets, Holy Books, Judgement Day and Akhirah
- Sets out how Muslims should live – 5 pillars, halal/haram,

6. Malaikah (angels)

Muslims believe that Allah cannot communicate directly with humans. Allah created angels as immortal beings without free will.
- They are male.
- They obey all of Allah's commands so never commit sins
- Angels can have direct contact with Allah and pass his message to humans

Angels have many functions such as:
- Praise Allah in heaven
- Guardians of the gates of hell
- Record the good and bad deeds of humans to present to Allah on the Last Day

Angels are important because:
- Angels communicated the Qur'an to Muhammad, without them Muslims would not have instructions on what to believe or how to live
- Angels ensure that on the Day of Judgement God will have all the facts when judging people's lives
- Angels make sure that heaven is safe from evil

Angel	Role
Jibril (Gabriel)	✓ Chief of the angels. ✓ Deliver Allah's message to the prophets to pass onto humanity ✓ Told Ibrahim (Ishaq/Isaac), Zechariah (Yahya/John the Baptist) and Maryam (Isa/Jesus) about the birth of significant people. ✓ Revealed the Qur'an to Muhammad. In 610, during the month of Ramadan and continued to give revelations for the next 20 years until the Qur'an was complete
Mika'il (Michael)	✓ Second most important angel ✓ Guardian of heaven, protecting it from evil and the devil ✓ He ensures humans are nourished by sending rain to earth
Izra'il	✓ Angel of death ✓ Takes the soul of people at death and returns it to Allah when Allah decides it is their time to die

8. Akirah (Life after death)

Muslims believe that when they die their body stays in the grave until the Last Day.
The Qur'an teaches that Allah will bring this world to an end (Last Day). This will be after Isa (Jesus) has returned, an angel will sound the trumpet and the dead will be raised. We will stand before God on the plain of Arafat to be judged and either sent to heaven or hell.

All Muslims believe that heaven is paradise, close to Allah. It is described in the Qur'an as ***al'Jannah*** (the Garden):

'Allah hath promised to Believers, men and women, gardens under which rivers flow, to dwell therein, and beautiful mansions in gardens of everlasting bliss. But the greatest bliss if the good pleasure of Allah. That is the supreme felicity' (Surah 9:72)

Hell is ***Jahannam*** and is portrayed in the Qur'an as a place of fire and torture, away from Allah. Most Muslims believe that this a place for eternity, some Muslims believe that bad Muslims only stay to be punished for their sins or for as long as God wills and that there are 7 classes/realms of hell.

Some differences in belief:
The belief that the soul stays in the grave until the Last Day is challenged by some Muslims as the Qur'an states that those who die on Hajj will go straight to heaven and so afterlife is spiritual; meaning your souls are judged immediately after death and go to a spiritual heaven or hell.
Barzakh – period between death and body being raised. Some Muslim traditions say that after death, souls are visited by the angel of death and questioned about their faith. If they have true Muslim faith they are shown their place in heaven and look at it until the Last Day.
Other traditions say that the soul hovers over the grace until the Last Day.
Others say the soul simply sleeps so that Barzakh seems a moment between death and the Last Day

Life after death is important because:
- The Qur'an teaches there is Akirah
- Muhammad taught that there is Akirah
- It is one of the six fundamental beliefs

This can affect the lives of Muslims because:
- Muslims will try to live good Muslim lives if they are to go to paradise and avoid hell
- Living a good Muslim life means observing the five pillars
- Living a good Muslim life means following Shari'ah law so eat halal meat, follow Muslim dress laws, not drink alcohol or gamble

7. Al-Qadr (fate)

This means power, fate or predestination. This means that everything in the universe is following a divine plan.

'In all things the master-planning is God's (Surah 13:42)

Muslims believe that Allah has a plan for the universe he created → He has the power to make that plan happen (omnipotent) → He knows what will happen (omniscient) → In the end everything will work out as Allah willed and wanted

Al-Qadr and the Day of Judgement

Muslims believe that on the final judgement, Allah will judge everyone on the basis of their beliefs and actions and reward or punish accordingly. People can only be punished for actions which they are responsible for and could have done differently. This means that the concept of al-Qadr and Allah's final judgement contradict one another. This has led to two different Muslim explanations:

- Shi'a Muslims – Allah created humans with free will and to be responsible for the world. It is therefore up to humans to decide what happens and take responsibility for their actions and so pay the price on the Last Day.
- Sunni Muslims – Allah knows what people will do before they do it, but they do it of their own free will.

What does al-Qadr mean for Muslims today?

- Although Muslims may face suffering, they do not need to worry as God is in control, so all will be well
- All suffering must be accepted as it must be part of God's plan and will have a good outcome
- Although God's plans will happen, Muslims have to make their own choice and be responsible for their own actions and destiny.

Muslim and Christian beliefs about life after death

Similarities
- Both believe in judgement
- Both believe in heaven with God
- Both believe the good are rewarded

Differences
- Some Christians do not believe in hell and believe that everyone will eventually go to heaven
- Some Christians do not believe in the Last Day and that judgement happens immediately
- Catholics believe in purgatory, a place for those not ready for heaven to be cleansed of their sins.

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Key term	Definition	Key term	Definition
Multi Faith	Lots of religions OR different religions, are allowed to co-exist and be followed or practiced.	**Belief**	An opinion that something is true often without any real evidence.' (Ideas that you accept without question).
Cohesion	The act of working together for a course.	**Faith**	Faith is when a person believes something to be true and puts their 'trust' in what they believe to be true.
Religious Freedom	The right to practise your religion or change religions	**Peace**	A state or period of time, where there is freedom from disturbance and everyone can co-exist together without conflict or tension.
Respect	A feeling of deep admiration for someone or something because of their abilities, qualities, or achievements.	**Eternal**	Everlasting, will last forever.
Rules	Laws which say how you should behave or the way in which you should behave.	**Theist**	Someone who is certain that God does exist.
Omnipresent	Always present	**Mosque**	Religious building and place of worship in Islam.
Benevolent	All Loving	**Omniscient**	All knowing

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Key term	Definition	Key term	Definition
Omnipotent	All powerful	**Salah**	Prayer - An act of communication with God in religion.
Rituals	Actions that you perform e.g. Kneeling to pray	**Diversity**	Many or different.
Communication	Exchanging of information in written or verbal form.	**Community**	A group of people that are connected or have shared characteristic in common such as: Meeting to worship.
Allah	Arabic for God.	**Qur'an**	Holy Book in Islam
Sunni	One group of Muslims who follow Islam.	**Shi'a**	One group of Muslims who follow Islam.
Free Will	Humans are free to make their own choices.	**Prophets**	Humans who were chosen to be Allah's messengers.
Tawid	Belief in the oneness of Allah.	**Malaikah**	Belief in the existence of angels.
Risalah	A system of communication between Allah and humans via the Prophets.	**Al-Qadr**	Belief in Predestination, Muslims believe that they need to trust Allah to know what is best for them in their life.
Monotheistic	Belief there is only one God.	**Resurrection**	Belief that after death the body stays in the grave, until the day of judgement, when it will be raised again.
Ummah	Community.	**Iman**	'Iman' is the Arabic word for 'faith' or 'belief'.
Five Roots of Usul ad-Din	This translates literally as 'foundation of faith', and are the essential beliefs which all Shi'a Muslims accept.	**Adalah**	Belief in justice and fairness.

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Key term	Definition	Key term	Definition
Nubuwwah	Prophethood – Allah appointed prophets (messengers), to teach his message to humanity.	**Transcendent**	The belief that Allah is above and beyond anything in the world.
Immanent	The belief that Allah is close to every human and acts within the world daily.	**Merciful**	The belief that Allah forgives the things that people do wrong. He is compassionate when people are sorry.
Just	The belief that Allah judges people in a fair and unbiased way.	**Adalat**	The idea that Allah is equitable and just. This term refers to how Shi'a Muslims believe Allah created the world in a just and fair way. Allah behaves in a fair and merciful manner at all times.
Subhah	A set of 99 prayer beads to help Muslims to remember and recite the 99 names of Allah when they pray.	**Khalifah**	The task of looking after the world which Allah created. Muslims believe Allah gave this task to Adam the first prophet.
Hafiz/ Hafizah	Many Muslims learn the Qur'an off by heart and as a mark of respect they are called Hafiz if they are male and Hafizah if they are female.	**Supernatural**	Something beyond the physical world.
Akhirah	The belief in Life after death.	**Barzakh**	A place where Muslims believe someone's sole goes after death to wait until the day of judgement.
Al-Jannah	Paradise (Heaven).	**Jahannam**	Hell.
Shahadah	Declaration of Faith.	**Shirk**	The unforgivable sin in Islam, comparing something to Allah.
Kutub	Refers to the holy books in Islam.	**Kitub**	Refers to a single holy book in Islam.
Kutullah	Refers to the books of Allah.	**Distorted**	Changed/altered from its original state.

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Marriage and Family Life in Islam

1. Marriage

Marriage is the recognised union or legal contract between two people who have agreed to commit their lives to each other.

In Islam Marriage is a contract (Nikah), which both individuals MUST agree to, the Qur'an states that no one should be forced into marriage. It is believed to be the foundation of the family.

Marriage is my Sunnah [practice]. Those who do not follow my practice do not belong to me'(Hadith-Sahih Al-Bukhari)

Marriage is Significant because:
It is considered a religious duty and follows the practice of the Prophet

Muhammad. It promotes the sharing of love and companionship between two people. It acts as a moral safeguard and prevents Muslims from having casual relationships and not treating sex as special. It provides a framework for a couple to have children and raise them up in Islam. It symbolises religious and social unity as it brings families, friends and others together.

Humanist and Atheist Attitudes
It is up to the individual to make a decision on the commitment within their relationships and accept that many couples choose to live together without marriage (cohabitation). However, Humanists expect sexual relationships to be based on trust and respect and relationships should be exclusive. Many believe marriage is a good for raising a family because it provides:
- A stable legal and financial backing for a relationship
- More social acceptance of the relationship
- More stable home for the family
-Public ritual to declare a couples love

Some non religious views are that marriage isn't necessary, that its expensive and often leads to divorce.

2. Sexual relationships

Muslim Attitudes
- Sex is a gift from God to be enjoyed between a married man and woman
-Sex was given to humans by God for the joy, pleasure and bonding of a married couple and to procreate.
-Sexual relationships help fulfil physical, emotional and spiritual needs.
-The Qur'an states that premarital sex and adultery are sinful and forbidden.
-Some Muslims attitudes to homosexuality are that it is a sin and unnatural because it doesn't enable procreation (these attitudes are based on the story of the prophet Lot).
-However not all Muslims share this view, many accepting that Allah loves and created everyone and everything.
-Around the world there are a variety of laws about homosexuality.

Non Religious Attitudes
- Sex must be consensual (non-consensual = rape)
- Sex must be between people 'of age'
- Adultery/cheating is offensive but not illegal
-Sex should be safe; barriers should be used to prevent disease and unwanted pregnancies
-- Homosexuality is natural (and legal in the UK)

5. Contraception

Something used to prevent pregnancy from occurring through sexual intercourse.

Artificial contraception	Natural contraception
- Condoms (male or female)- also prevent the transmission of STIs - Diaphragm - Contraceptive pill - Contraceptive implant or injection - Intrauterine device (IUD) -	-Natural family planning/fertility awareness - planning sex around the most fertile points of a woman's monthly cycle Abstention

There are very few direct teachings in the Qur'an about the use of contraception, couples may decide to use contraception as part of their family planning. Islam is pro-life and regards children as a blessing , therefore some Muslims see birth control/contraception as interfering with Allah's plan. However some Muslims see temporary and reversible forms of contraception as acceptable within a marriage, especially if a pregnancy puts the mothers health a risk or to save conceiving a child that might inherit an illness from the parents.

"Do not kill your children for fear of poverty – we shall provide for them and for you – killing them is a great sin" (Surah 17:31)

"Mothers suckle their children for two whole years [but] no one should be burdened with more than they can bear"(Surah 2:233)

British Muslims, like all other British citizens (religious and non religious), have the right to use contraception and to seek medical advise about it. The use of barrier methods of contraception are encouraged in the UK to prevent the spread of STIs.
Many people believe situation ethics should be applied – What is the most loving thing to do in a particular situation.

3. Families

Muslim Attitudes
In Islam the family is at the heart of the Muslim community and the foundation of society. It is the most important way of ensuring that children grow up as good, faithful Muslims. Practising Muslims are encouraged to marry within Islam and follow the example of the Prophet Muhammad (pbuh).

The best of you is the one who behaves best towards the members of his family' (Hadith- Trimidhi)

'We have commanded man to be good to his parents-his mother struggled to carry him and struggled to give birth to him; his bearing and weaning took a full thirty months' (Qur'an, Surah 46:15)

Islam also promotes love and kindness between all family members, with the Hadith highlighting the importance of treating close relatives well, because Muslims believe each family member has certain roles, responsibilities and rights (that need to be honoured), so the home is harmonious.
The Qur'an explains the importance of giving parents respect (especially mothers), and praying for them because they have such an important role.
Islam also teaches that one of the purposes of human life is procreation, so married couples are encouraged to have children and the family will provide the best care for them.

Non Religious Attitudes
Family is still important regardless of religion. Falling in love and starting a family is a goal in life for most. The purpose of family is:
- Bring up children safe and securely and that their needs are met
- Pass on moral values so that children become good citizens
- Provide emotional and financial support through life

4. Support for families in the Ummah

Community is very important in Islam, all Muslims are part of the Ummah. There are many support services that Muslim communities offer families often via the mosque, a families visit to their local mosque can fulfil a spiritual and social purpose.

There are a number of activities, events and services that support families:
-Worship
-Rites of Passage e.g. When a baby is born, funerals,
-Parenting classes
-Classes for Children e.g. to support exam revision.
-Madrassah – A school to teach children Arabic and about Islam.
-Charity work within the community e.g. providing aid for those families which need it (practical or financial.
-Counselling e.g. premarital counselling, conflict resolution counselling.

The Ummah can help provide Muslim families with a sense of identify and belonging, it gives them support from people they can trust.

"hold fast to God's rope", Muslims believe there is strength in unity, so they will stay and grow as one community but the support offered to families does depend on the size of the local community and facilities available.

Parents can strengthen the Ummah if they raise children in a Muslim way, to show the children how to be good Muslims. They remind Muslims how much Allah cares about families. Muhammad had a family and children, and this example should be followed. Families, and the Ummah, can be consulted in difficult times and asked for guidance in many matters.

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6. Divorce and Remarriage

There has been a huge increase in the number of divorces between 1950 and now because:
- New laws (Divorce Reform Act 1969), have meant divorce is much cheaper and easier to obtain a divorce.
- Women are no longer prepared to accept unequal treatment from men
-Women are more financially independent and can afford to live well after divorce..
-Divorce doesn't have the same negative stigma attached to it.
-People/society are less religious compared to the past
-People believe its important to be happy rather than just accepting their situation.

Remarriage is now declining as more people choose to cohabit with their new partners, rather than marry.. But many people who divorce do marry again, showing they haven't given up on marriage.

Muslim Attitudes

Of all the things Allah has made lawful, He hate talaq [divorce] the most"
(Hadith – Abu Dawud)

Islam does permit divorce, If a man or woman is unhappy, the only honourable option is divorce, but only as a last resort. Muslims can divorce for a number of reasons include: Unfaithfulness, Abuse, Apostasy (leaving Islam, committing Shirk). Either the husband or the wife can initiate a divorce..
If the couple reconcile (make up) or have sex, the divorce is effectively cancelled and a shari'ah council will represent the woman's interests

"Do not hold on to them with intent to harm them and commit aggression" (Surah 2:231)

There are also reasons for annulling a marriage. It is important that annulment is not seen as the same as divorce. An annulment can happen for the following reasons: A husband being absent for a long time without keeping in touch.
Not being able to have children naturally.

Muslims are actually encouraged to get remarried, especially if they have young children, as family is so important to Islam.

Non Religious Attitudes

Many people, especially those who are non-religious, might argue that divorce and remarriage are acceptable because:
Marriages don't always work. People should be allowed to make choices around their relationships. People should be allowed to find love again.
People change, so should their family circumstances.

Humanist Attitudes

Humanists see marriage as a serious, lifelong commitment, so divorce should be a last resort.

Situation Ethics

Some people believe situation ethics should be applied, look at the pros and cons of each individual situation and decide what is the most loving thing to do.

7. Equality within the family

The Qur'an teaches that men and women were created from one entity, and that together they have a role in procreating.

'People, be mindful of your Lord, who created you from a single soul, and from it created its mate, and from the pair of them spread countless men and women far and wide'
(Qur'an, Surah 4:1)

Muslims believe that before Muhammad society needed guidance. Muslims believe Allah chose Muhammad to teach people this was all wrong, that women must be valued and respected.
Muhammad's own wives have been called *"Mothers of believers"* (Surah 33:6), his youngest wife A'ishah, was one of the first scholars of Islam and teachers of Muslims.. The qur'an revealed men and women were both required to make an active contribution to creating a moral society.

"The believers, both men and women, support each other; they order what is right and forbid what is wrong" (Surah 9:71).

Traditionally men were meant to provide for heir family and women had the most important role as wives and mothers, but women always had the right to work. Some cultures still encourage very traditional roles are followed by men and women in the family however some Muslims believe that modern society is different and due to improved employment opportunities and living costs, women also now have an important role in providing for the family.

Most Muslims believe that men and women have clearly defined roles that are natural to them and part of Allah's plan. Having different responsibilities does not mean men and women are unequal. Some Muslims argue that greater rights and opportunities for women today mean that traditional views about the roles of men and women need to be redefined.

Today, Muslim men and women are equally responsible for making sure that they:
Show *"love and kindness"* towards each other (Surah 30:21).
Promote an Islamic environment within their home.
Teach their children Muslim etiquette.

8. Gender Prejudice and Discrimination

Did you know that as recently as the early twentieth century Women in the UK couldn't: Vote, Graduate from top universities or Get Divorced (if they did they were treated as outcasts/failures).

In Islam men and women are spiritually equal and judged the same way before Allah..

"For men and women who are devoted to God [...] god has prepared forgiveness and a rich reward" (Quran, Surah 33:35).

"To whoever, male or female, does good deeds and has faith, we shall give a good life and reward them according to the best of their actions".
(Qur'an Surah 16:97)

The verses emphasize how both men and women who have faith and act according to the teachings of Islam have and equal reward. Muslims use these and other teachings from the Qur'an to argue that in the eyes of Allah gender is equal and all are spiritually equal. Muslims use these teachings to argue that all gender prejudice and discrimination is wrong.

Some Muslims believe that men and women should have completely equal roles in religion and education. They also believe that women should have careers, but that their role as a mother should always take priority over their career. A few would accept women religious leaders, however this is an area of debate because prophets have always been men.

They have this attitude because:
The Qur'an teaches that men and women are equal in religion and education.. There is evidence from the life of the Prophet that Muhammad encouraged both men and women to worship in the mosque.. There were women religious leaders during the early stages of Islam whose advice was asked by the early **caliphs.** Society in may countries is less patriarchal now, with better opportunities for women. A number of women have risen to political power in Muslim-majority countries, such as Benazir Bhutto (Pakistan), Megawati Sukarnoputri (Indonesia), Khaleda Zia (Bangladesh) and Masoumeh Ebtekar (Iran)

However:
An increasing number of women are now involved in the management of mosques. In Islam, women are allowed to lead other women in prayer, but traditionally women have not led men in this way. *"There is nothing in the Qur'an that prohibits it. My own theological research into the essence of Islam indicates the necessity for us to be able to move away from the tradition that restricted women from the practise of leading prayer"* (Amina Wadud).
.Many Muslims argue the fifteen centuries of theological scholarship and research has recorded that its always men who lead mixed prayers and this is in no way discriminatory to women. Women are highly respected in Islam and that equality is not "sameness" but in each

gender being able to freely play their part in all walks of life.

Any prejudice and discrimination based on gender comes from the wider culture, not from religion.

Non Religious and Humanist attitudes

Humanist are against sexism and promote women's rights. They believe that it is wrong for religion to discriminate against women and refuse to ordain them should be made illegal. However, recent surveys have shown that there is still an issue with gender prejudice and discrimination in society showing that many non-religious people still have this mindset.

Year 9 Term 1 Knowledge Organiser Booklet

Key term	Definition	Key term	Definition
Multi Faith	Lots of religions OR different religions, are allowed to co-exist and be followed or practiced.	**Belief**	An opinion that something is true often without any real evidence.' (Ideas that you accept without question).
Cohesion	The act of working together for a course.	**Faith**	Faith is when a person believes something to be true and puts their 'trust' in what they believe to be true.
Religious Freedom	The right to practise your religion or change religions	**Rules**	Laws which say how you should behave or the way in which you should behave.
Respect	A feeling of deep admiration for someone or something because of their abilities, qualities, or achievements.	**Mosque**	Religious building and place of worship in Islam.
Rituals	Actions that you perform e.g. Kneeling to pray	**Salah**	Prayer - An act of communication with God in religion.
Tawid	Belief in the oneness of Allah.	**Ummah**	Word wide Muslim Community - A group of people that are connected or have shared characteristic in common such as: Meeting to worship.
Allah	Arabic for God.	**Qur'an**	Holy Book in Islam.
Free Will	Humans are free to make their own choices.	**Nikah**	A contract signed by the husband and wife to acknowledge each others rights.

Year 9 Term 1 Knowledge Organiser Booklet

Key term	Definition	Key term	Definition
Mahr	Money or property given by the husband to the wife as a gift.	**Walima**	A feast which takes place some days after the marriage ceremony.
Adultery	Sex/Relationship where one or both of those involved are already married to someone else (extramarital sex).	**Promiscuity**	Having sexual relations with a number of partners without commitment.
Homosexuality	Sexual relations between two people of the same sex.	**Premarital Sex**	A sexual relationship which occurs before marriage.
Faithfulness	Staying in a committed relationship (marriage) and only having sexual relations with that person.	**Procreation**	Making a new life (having children).
Cohabitation	Living together when you are not married but in a relationship.	**Surrogacy**	When a woman becomes pregnant and gives birth for a couple who are unable to have children.
Nuclear Family	A family made up of mother, father, and children.	**Single Parent Family**	One parent with children, often following a death or divorce (or choice).
Blended Family	Divorced or widowed (or single parents), people bring together children who become step-siblings (two families uniting).	**Same-sex Parents**	where a same sex couple adopt / foster children or have children via surrogacy and/or donors biologically.
Extended Family	Other relatives e.g. grand parents, cousins, aunts and uncles living together or in close proximity as a family unit.	**Adhan**	The call to prayer in Arabic.
Shari'ah	Islamic legal system based on Muslim Scholar's understanding of the Qur'an, Sunnah and the Hadith.	**Aqiqah**	A ceremony marking the birth of a newborn baby.

Year 9 Term 1 Knowledge Organiser Booklet

Key term	Definition	Key term	Definition
Khitan	Male circumcision, when a baby's foreskin is removed for health reasons.	**Contraception**	The deliberate prevention of pregnancy.
Family Planning	When a couple consider whether or not to have children, or at what point in their lives to have children.	**Situation Ethics**	The idea that people should base moral decisions on what is the most loving thing to do.
Divorce	Legally ending a marriage.	**Annulment**	When it is declared that a marriage is not valid (often due to a variety of reasons).
Remarriage	Marrying again after divorce; a new marriage.	**Talaq**	The name for divorce in Islam. (The procedure of saying "I divorce" three times which ends a marriage).
Iddah	This is a period of reflection that must take place before a divorce can happen. It normally lasts three months and gives the couple a chance to sort out their problems (reconcile).	**Reconciliation**	When couples resolve their issues and get back together instead of seeking a divorce.
Equality	Treating everyone the same.	**Gender Prejudice**	Believing that one gender is less or more important than another.
Gender Discrimination	Treating people less or more favourably because of their gender.		

Year 9 Term 1 Knowledge Organiser Booklet

My School Life

KEY VOCABULARY	
Prüfung (die)	exam
plaudern	to chat
zeichnen	to draw
Erfolg (der)	success
blau machen	to play truant
antworten	to answer
Auswahl (die)	choice
fragen	to ask
Zeugnis (das)	school report
Versammlung (die)	assembly
Umkleideraum (der)	changing room
verstehen	to understand
Hausmeister (der)	caretaker
Internat (das)	boarding school
Stunde (die)	lesson
Fremdsprache (die)	foreign language
Schüler / in (der / die)	pupil
Direktor (der)	head teacher / principal
unterrichten	to teach
lehren	to teach

KEY ADJECTIVES	
klug	clever / intelligent
ungerecht	unfair
gerecht	fair
erfolgreich	successful
gemein	mean
faul	lazy
schriftlich	written
mündlich	orally
ehrlich	honest
ausreichend	sufficient / pass
befriedigend	satisfactory
wichtig	important
mangelhaft	poor/unsatisfactory/fail
fleißig	hard working

KEY GRAMMAR

Separable verbs

Some German verbs are separable. This means that the first syllable (**prefix**) gets detached and pops up somewhere else in the sentence (usually at the end of the sentence).

anfangen
aufhören
zuhören
einkaufen
anrufen

Der Film fängt um 17 Uhr **an**.
Das Konzert hört um 20 Uhr **auf**.
Hörst du **zu**?
Ich habe gestern ein**ge**kauft.
Ich habe am Samstag meine Oma an**ge**rufen

If you use a separable verb in the past perfect tense, the prefix is put **in front of** the past participle.

angefangen
aufgehört
zugehört

n.b. Some prefixes, such as be-, ge, ent, er, and ver-, do not get separated.

Irregular verbs

Irregular verbs change their vowels in the *du* and *er/sie/es/man* forms – but the endings are regular. There are three ways the vowels might change.

	fahren (to go)	***sehen*** (to see)	***nehmen*** (to take)
du	*fährst*	*siehst*	*nimmst*
er/sie/es/man	*fährt*	*sieht*	*nimmt*

OPINION BOX

Meiner Meinung nach … **(verb comes next)** *In my opinion..*
Ich interessiere mich für … **(object)** *I'm interested in…*
… gefällt mir / … gefallen mir (plural) *… pleases me*

JUSTIFYING YOUR OPINIONS

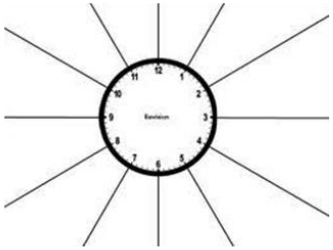
Ich lerne gern Deutsch,	I like learning German,
weil es interessant/einfach **ist**:	**because** it **IS** interesting/easy
weil sie einfach/nützlich **sind**:	**because** they **ARE** easy/useful
weil es interessant/nützlich **war**:	**because** it **WAS** interesting/useful
weil sie einfach/nützlich **waren:**	**because** they **WERE** easy/useful
weil es Spaß **macht**:	**because it's** fun
*(you can't use IST with Spaß)	
obwohl es langweilig/nützlos **ist**:	**although** it **IS** boring/useless

Year 9 Term 1 Knowledge Organiser Booklet

CONNECTIVES

For these connectives / conjunctions the verb goes after the subject

und	*and*	oder	*or*
aber	*but*	also	*so*
auch	*also*		



Use your books to make a revision clock for all the vocab on school

KEY QUESTIONS

1) Was lernst du in der Schule?
2) Was ist dein Lieblingsfach?
3) Wie findest du Mathe?
4) Beschreib dein Sportlehrer oder deine Sportlehrerin
5) Kannst du deine Schule beschreiben?
6) Wieviele Schüler und Schüleriinen gibt es in deiner Schule?
7) Wie kommst du zur Schule?
8) Was hast du gestern in der Schulkantine gegessen?

False Friends	
das Gymnasium	grammar school
das Internat	boarding school
das Labor	laboratory
die Note	mark
die Realschule	secondary modern

Tricky Pronunciation	
Practise these with your teacher!	
Mathe (f)	maths
schlecht	bad
Fächer	subjects

Ich lerne Englisch, Deutsch, Mathe, Kunst und Naturwissenschaften und sie sind ziemlich interessant. Mein Lieblingsfach ist Kunst, weil der Kunstlehrer sehr freundlich ist, aber der Direktor ist zu streng. Die Sporteinrichtungen sind gut und modern und ich liebe Sport. Jedoch hasse ich das Essen in der Kantine, denn es ist ekelhaft. Meine Grundschule war klein und freundlich.

1) Is her opinion of the following positive (P) or negative (N)?

a) German, maths, English and science.
b) Art teacher
c) Head teacher
d) Sports facilities
e) Food in the canteen
f) Her primary school

2) Now translate the text into English.

Year 9 Term 1 Knowledge Organiser Booklet

Me, My Family and Friends

KEY VOCABULARY	
sich ärgern (über)	to get annoyed (about)
trennen	to separate
aussehen	to look like
beschreiben	to describe
Alter (das)	age
Brieffreund / in (der / die)	penfriend
Freundschaft (die)	friendship
Ausweis (der)	identity card
Erwachsene (der / die)	adult
Traum (der)	dream
Verhältnis (das)	relationship
Wohnort (m)	place of living
Geburtsort (der)	place of birth
Geschlecht (das)	sex / gender
kennenlernen	to get to know
Spitzname (der)	nickname
Geburtsdatum (das)	date of birth
Streit (der)	argument
Vorname (der)	first name
Jugendliche (die)	young people

KEY ADJECTIVES	
witzig	funny
altmodisch	old-fashioned
schüchtern	shy
sportlich	sporty
gemein	mean
lustig	funny / cheerful
selbstständig	independent
ordentlich	tidy
ehrlich	honest
frech	cheeky
ernst	serious
wichtig	important
nett	nice
zusammen	together

KEY GRAMMAR

Present Tense

Describes what is happening now or what happens on a regular basis.
German makes no distinction between "I eat", "I am eating", "I do eat" – all three versions would be "Ich esse"

FREQUENTLY USED VERBS

INFINITIVE	ICH	DU	ER / SIE	WIR / SIE
haben = to have	Ich habe	Du hast	Er / Sie hat	Wir / Sie haben
sein = to be	Ich bin	Du bist	Er / Sie ist	Wir / Sie sind
heißen = to be called	Ich heiße	Du heißt	Er / Sie heißt	Wir / Sie heißen
gehen = to go	Ich gehe	Du gehst	Er / Sie geht	Wir / Sie gehen
lesen = to read	Ich lese	Du liest	Er / Sie liest	Wir / Sie lesen
spielen = to play	Ich spiele	Du spielst	Er / Sie spielt	Wir / Sie spielen
essen = to eat	Ich esse	Du isst	Er / Sie isst	Wir / Sie essen
machen = to do / make	Ich mache	Du machst	Er / Sie macht	Wir / Sie machen
finden = to find	Ich finde	Du findest	Er / Sie findet	Wir / Sie finden
werden = to become	Ich werde	Du wirst	Er / Sie wird	Wir / Sie werden

Time / Manner / Place

Example 1: Ich spiele im Sommer mit meiner Familie im Park
I play in the summer with my family in the park
Example 2: Am Wochenende gehen wir ins Kino
At the weekend we go to *the cinema*

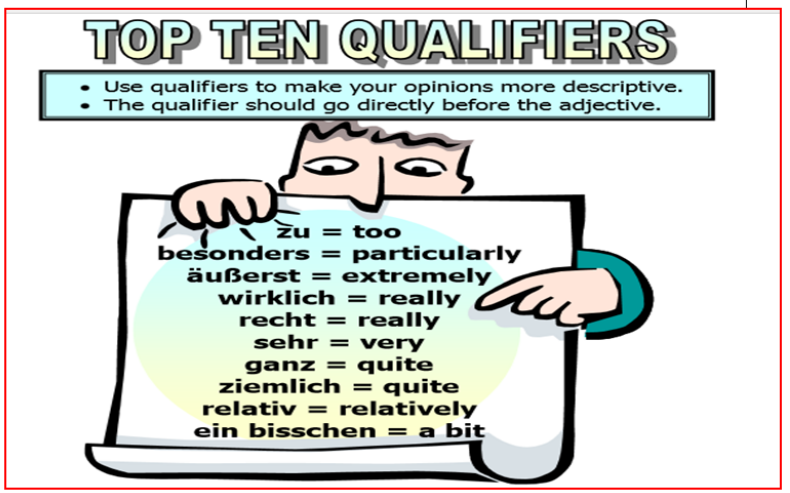
Present Tense = seit + length of time

Ich spiele Tennis seit vier Jahren = I have played tennis for 4 years

OPINION BOX

Ich finde **(noun or verb)** … intensifier / qualifier /adjective
Ich finde **meine Schwester** ziemlich freundlich
Ich finde mit meiner Familie **wohnen** sehr langweilig
Ich **(verb)** gern / nicht gern
Ich **spiele** gern Tennis mit meiner Mutter / Ich **streite** nicht gern mit meinen Bruder
♥♥Ich liebe …
Ich liebe meine Familie / Ich liebe mit meiner Familie Tennis spielen
♥Ich mag …
Ich mag meine Oma / Ich mag mit meiner Oma radfahren
X Ich mag … nicht
Ich mag nicht meine Stiefschwester / Ich mag nicht mit meinem Bruder schwimmen gehen
X X Ich hasse …
Ich hasse meinen Bruder / Ich hasse mit meiner Familie ins Kino gehen

INTENSIFIERS / QUALIFIERS



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KEY VERBS and TENSES			
Infinitive	Present	Perfect	Future
auskommen **to get on**	Ich komme gut mit meiner Schwester aus. I get/am getting on well with my nan.	Ich bin gut mit ihr ausgekommen. I (have) got on well with her.	Ich werde sehr gut mit meinem Bruder auskommen. I will get on really well with my brother.
haben **to have**	Ich habe zwei Katzen. I have two cats.	Ich habe einen Hund gehabt. I (have) had a dog. **Ich hatte einen Hund (I had a dog)**	Ich werde einen Vogel haben. I will have a bird.
heiraten **to marry**	Ich heirate meine Verlobte. I marry/am marring my fiancée.	Ich habe meinen Freund geheiratet. I (have) married my (boy)friend.	Ich werde meinen Verlobte heiraten. I will marry my fiancé.
sein **to be**	Ich bin Einzielkind. I am an only child.	Ich bin ledig gewesen. I have been single. **Ich war ledig (I was single)**	Ich werde sehr glücklich sein. I will be very happy.
sich verstehen **to get on**	Ich verstehe mich sehr gut mit meinem Opa. I get/am getting on really well with my grandpa.	Ich habe mich gut mit ihm verstanden. I (have) got on well with him.	Ich werde mich nicht sehr gut mit meiner Famile verstehen. I will not get on very well with my family.
wohnen **to live**	Ich wohne jetzt in Sheffield. I live/am living now in Sheffield.	Ich habe in einer Großstadt gewohnt. I (have) lived in a big city.	Ich werde später mit Freunden wohnen. I will live with friends later.

KEY QUESTIONS

1) Wieviele Personen gibt es in deiner Familie?
2) Kommst du gut mit deiner Familie aus?
3) Kannst du deine Familie beschreiben?
4) Was machst du gern mit deiner Familie?
5) Was hast du letztes Wochenende mit deiner Famile gemacht?
6) Hast du Haustiere?
7) Wirst du heiraten? Warum?

FANCY PHRASES

Er/Sie geht mit auf den Wecker!
He/She gets on my nerves.
Ich habe die Nase voll von meinem Bruder/meinerSchwester.
I'm fed up with my brother/sister
Ich kann ihn/sie nicht leiden!
I can't stand him/her!

Ich heiße Sarah und ich wohne mit meinen Eltern, meinem Bruder und meinem Hund, der Archie heißt. Ich liebe Archie, weil er freundlich ist. Er ist braun und weiß. Ich komme gut mit meinen Eltern aus, aber ich streite mich oft mit meinem Bruder, denn er ist nervig. Meine Muter ist nett und sehr fleißig. Sie hat blaue Augen und schwarze Haare. Sie ist ziemlich klein. Mein bester Freund heißt Jim und er ist fünfzehn Jahre alt. Wir spielen Fußball jeden Tag, weil es super ist. Letztes Wochenende habe ich Tennis mit meiner Familie im Park gespielt und wir sind auch ins Kino gegangen. Das war toll und es hat viel Spaß gemacht. In der Zukunft werde ich heiraten und entweder zwei oder drei Kinder haben, weil ich eine große Familie haben möchte.

Spelling strategy

Use the 5 steps below to learn to spell any word

LOOK	Look carefully at the word for 10 seconds
SAY	Say the word out loud to practise pronunciation
COVER	Cover up the word when you have learned it
WRITE	Write the word from memory
CHECK	Check your word against the original

Did you get it right? If not, what did you get wrong? Spend time learning that bit of the word. Go through the steps again until you get it right.

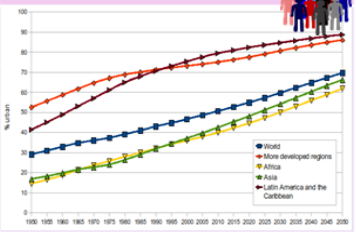
Year 9 Term 1 Knowledge Organiser Booklet

What is Urbanisation?

This is an increase in the amount of people living in urban areas such as towns or cities. In 2007, the UN announced that for the first time, more than 50 % of the world's population live in urban areas.

Where is Urbanisation happening?

Urbanisation is happening all over the word but in LICs and NEEs rates are much faster than HICs. This is mostly because of the rapid economic growth they are experiencing.



Causes of Urbanisation

Rural - urban migration (1) — **The movement of people from rural to urban areas.**

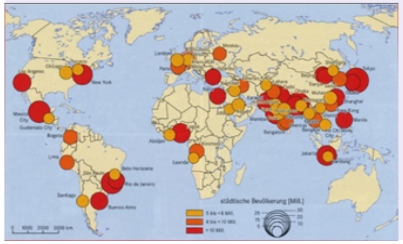
Push	Pull
• Natural disasters • War and Conflict • Mechanisation • Drought • Lack of employment	• More Jobs • Better education & healthcare • Increased quality of life. • Following family members.

Natural Increase (2) — **When the birth rate exceeds the death rate.**

Increase in birth rate (BR)	Lower death rate (DR)
• High percentage of population are child-bearing age which leads to high fertility rate. • Lack of contraception or education about family planning.	• Higher life expectancy due to better living conditions and diet. • Improved medical facilities helps lower infant mortality rate.

Types of Cities

Megacity — An urban area with over **10 million people** living there.



More than two thirds of current megacities are located in either NEEs (Brazil) and LICs (Nigeria). The amount of megacities are predicted to increase from 28 to 41 by 2030.

Sustainable Urban Living

Sustainable urban living means being able to live in cities in ways that do not pollute the environment and using resources in ways that ensure future generations also can use then.

Water Conservation

This is about reducing the amount of water used.

- Collecting rainwater for gardens and flushing toilets.
- Installing water meters and toilets that flush less water.
- Educating people on using less water.

Energy Conservation

Using less fossil fuels can reduce the rate of climate change.

- Promoting renewable energy sources.
- Making homes more energy efficient.
- Encouraging people to use energy.

Creating Green Space

Creating green spaces in urban areas can improve places for people who want to live there.

- Provide natural cooler areas for people to relax in.
- Encourages people to exercise.
- Reduces the risk of flooding from surface runoff.

Waste Recycling

More recycling means fewer resources are used. Less waste reduces the amount that eventually goes to landfill.

- Collection of household waste.
- More local recycling facilities.
- Greater awareness of the benefits in recycling.

Urban Issues & Challenges

Sustainable Urban Living Example: Freiburg

Background & Location	Sustainable Strategies
Freiburg is in west Germany. The city has a population of about 220,000. In 1970 it set the goal of focusing on social, economic and environmental sustainability.	• The city's waste water allows for rainwater to be retained. • The use of sustainable energy such as solar and wind is becoming more important. • 40% of the city is forested with many open spaces for recreation, clean air and reducing flood risk.

Integrated Transport System

This is the linking of different forms of public and private transport within a city and the surrounding area.

Brownfield Site

Brownfield sites is an area of land or premises that has been previously used, but has subsequently become vacant, derelict or contaminated.

Traffic Management

Urban areas are busy places with many people travelling by different modes of transport. This has caused urban areas to experience different traffic congestion that can lead to various problems.

Environmental problems

- Traffic increases air pollution which releases greenhouse gases that is leading to climate change.

Economic problems

- Congestion can make people late for work and business deliveries take longer. This can cause companies to loose money.

Social Problems

- There is a greater risk of accidents and congestion is a cause of frustration. Traffic can also lead to health issues for pedestrians.

Congestion Solutions

- Widen roads to allow more traffic to flow easily.
- Build ring roads and bypasses to keep through traffic out of city centres.
- Introduce park and ride schemes to reduce car use.
- Encourage car-sharing schemes in work places.
- Have public transport, cycle lanes & cycle hire schemes.
- Having congestion charges discourages drivers from entering the busy city centres.

Traffic Management Example: Bristol

In 2012 Bristol was the most congested city in the UK. Now the city aims to develop it's integrated transport system to encourage more people to use the public transport. The city has also invested in cycle routes and hiring schemes.

Greenbelt Area

This is a zone of land surrounding a city where new building is strictly controlled to try to prevent cities growing too much and too fast.

Urban Regeneration

The investment in the revival of old, urban areas by either improving what is there or clearing it away and rebuilding.

Year 9 Term 1 Knowledge Organiser Booklet

Urban Change in a Major NEE City: RIO DE JANEIRO Case Study

Location and Background

Rio is a coastal city situated in the South East region of Brazil within the continent of South America. It is the second most populated city in the country (6.5 million) after Sao Paulo.

City's Importance

- Has the second largest GDP in Brazil It is headquarters to many of Brazil's main companies, particularly with Oil and Gas.
- Sugar Loaf mountain is one of the seven wonders of the world.
- One of the most visited places in the Southern Hemisphere.
- Hosted the 2014 World Cup and 2016 Summer Olympics.

Migration to Rio De Janeiro

The city began when Portuguese settlers with slaves arrived in 1502. Since then, Rio has become home to various ethnic groups.

However, more recently, millions of people have migrated from rural areas that have suffered from drought, lack of services and unemployment to Rio. People do this to search for a better quality of life.

This expanding population has resulted in the rapid urbanisation of Rio de Janeiro.

City's Opportunities

Social: Standards of living are gradually improving. The Rio Carnival is an important cultural event for traditional dancing and music.

Economic: Rio has one of the highest incomes per person in the country. The city has various types of employment including oil, retail and manufacturing.

Environmental: The hosting of the major sporting events encouraged more investment in sewage works and public transport systems.

City Challenges

Social: There is a severe shortage of housing, schools and healthcare centres available. Large scale social inequality, is creating tensions between the rich and poor.

Economic: The rise of informal jobs with low pay and no tax contributions. There is high employment in shanty towns called Favelas

Environmental: Shanty towns called Favelas are established around the city, typically on unfavourable land, such as hills.

Self-help schemes - Rocinha, Bairro Project

- The authorities have provided basic materials to improve peoples homes with safe electricity and sewage pipes.
- Government has demolished houses and created new estates.
- Community policing has been established, along with a tougher stance on gangs with military backed police.
- Greater investment in new road and rail network to reduce pollution and increase connections between rich and poor areas.

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Key Vocabulary	Definition
EQ: How effective was the resolution to WW2?	
Berlin	The capital city of Germany
The Yalta Conference, 1945	The meeting where leaders of Britain, Russia and America joined together to discuss what to do with Germany after the defeat of the Nazis.
Joseph Stalin	The communist leader of the USSR (the name given to Russia under his reign)
Winston Churchill	The Prime minister of Britain following in 1945
Communism	A political system where all property is owned by the government and shared out equally among the people. Businesses are run for the good of the people, not profit.
Capitalism	A country's trade and industry are controlled by private owners for profit, rather than being run by the government.
West Germany	America, Britain and France all joined their sections of Germany together, this became known as west Germany
East Germany	The sections of Germany under the control of the USSR. This was kept separate from West Germany.
Berlin Wall	A wall was put up overnight in 1961 separating the part of Berlin controlled by the USSR from the parts controlled by Britain, France and America
Berlin Blockade	The USSR blocked railway access to Berlin for Britain, France and America.
NATO	NATO was set up in 1949 following tension in Berlin. It was designed to try and stop conflict breaking out between countries.
Iron Curtain	Churchill made a speech in 1946 declaring that many people did not have political freedom in the USSR. He said they were trapped behind an 'iron curtain'.
EQ: How close were we to WW3?	
Proxy War	A war started by a major power that does not get involved or fight.
Cold War	When 2 countries use a series of threats and propaganda rather than open fire and fighting.
Hot War	A conflict between 2 countries that turn into military clashes.
Korea	In 1945 the north was controlled by the USSR and the south was controlled by the USA.
United Nations	Created in 1945 to make countries discuss tension rather than go to war.
Cuba	A small island in the Caribbean, only 90 miles from the coast of Florida.
CIA	Central Intelligence Agency. Run by the US government to gather information on other countries.
Nationalise	To make something property of the state.
Khrushchev	The leader of the Soviet Union during the missile crisis in 1953.
EQ: Why was the Vietnam War so Controversial?	
Vietnam	A country in south-east Asia. The capital is called Saigon.

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North Vietnam	Ruled by Ho Chi Min who was a communist.
South Vietnam	Ruled by Ngo Diem who was a capitalist.
Guerrilla Warfare	Warfare conducted by unofficial soldiers. These are hard to trace as they do not wear uniform and blend in with ordinary people.
Viet Cong	The name given to the Vietnamese army by the Americans
Napalm	A type of bomb that contains flammable liquids. It burns anything it comes into contact with.
Agent Orange	A pesticide used to destroy the forest in Vietnam where the Viet Cong hid. It also killed crops and caused birth defects in the children of the people exposed to it.
Ho Chi Min Trail	An underground trail used by the communists to transport goods from north to south. America found this impossible to find.
My Lai Massacre	The American army attacked a village in Vietnam called My Lai. Nearly 400 people were killed. These were mainly women and children.

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Key term	Definition	Key term	Definition
Movement Skills	Can be used by the actor to communicate meaning and emotion.	**Pace / Tempo**	The speed in which words are delivered to communicate a given/ intended meaning to the audience
Body language	Is a movement position with the body that communicates meaning for the audience	**Pause**	Can be used to create dramatic tension
Gestures	A hand movement that communicates meaning and emotions to the audience	**Volume**	The level of noise used to communicate something on stage to the audience, or another character.
Facial Expressions	Where the characters emotions are conveyed to the audience through the use of movement in the face	**Tone**	The degree of highness of a tone to communicate meaning. Tone should have an emotion descriptor such as, angry tone, sarcastic tone.
Posture/ Gait	An actors particular way or manner of moving on foot.	**Articulation**	Is how effectively the actor joins/ divides their language to convey their character
Levels	An actors levels can be used on stage to communicate power. Such as a person on a higher level communicates the most power/ status to the audience.	**Accent**	A use of voice associated with a particular nation, locality or social class.
Space	An actors effective use of available space in a performance.	**Inflection**	Is a change of pitch or loudness of the voice.
Spatial Relationships	An actor can position themselves in a position on stage, in regards to another actor, the audience, a prop/ set to communication relationship.	**Pace / Tempo**	The speed in which words are delivered to communicate a given/ intended meaning to the audience
Movement Memory	Is when an actor draws on their experiences in their memory of how they might move when in a particular situation.	**Pitch**	Can be the high or low pitch of your voice, high pitch maybe female, scared or excited
Weight Placement	The actor imagines they are being pulled by a weight from at a particular body part, this will help create a gait suitable for different roles	**Conventions**	Stylised drama techniques used to break the fourth wall and make an audience THINK about the message being presented.
Balance	An actor being able to remain upright and walk gracefully as suitable to their role.	**Direct Address**	The actors, in and out of character, speak directly to the audience for the most of the play, along with vivid description.
Vocal Skills	Are the use of voice used to communicate meaning, such as pitch, pace and pause	**Physical Theatre**	When an actor/ actors use their bodies to create objects, props and set on stage.

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Key term	Definition	Key term	Definition
Technical drawings	Technical drawing, drafting or drawing, is the act and discipline of composing drawings that visually communicate how something functions or is constructed	**Product testing**	Product testing, also called consumer testing or comparative testing, is a process of measuring the properties or performance of products.
Working drawings	A scale drawing which serves as a guide for the construction or manufacture of something such as a building or machine.	**Accuracy**	The fact of being or making something exact, precise or correct.
Dimensions	A measurable extent of a particular kind, such as length, breadth, depth, or height. Sizes of a product.	**Interference fit**	An interference fit, also known as a press fit or friction fit is a fastening between two parts which is achieved by friction after the parts are pushed together, rather than by any other means of fastening
Tolerances	Is the allowable variation for any given size in order to achieve a proper function. Tolerance equals the difference between lower and upper limit dimensions.	**Peer evaluation**	Is a type of performance evaluation that is done by one or more people of matching competencies. Peer review is usually done among the members of the same team or class
Oak	Oak wood is a hardwood that is cut from an oak tree. Oak wood is prized for its strength, uniformity and beautiful grain.	**Functionality**	The quality of being suited to serve a purpose well; practicality. What does it do? How does it do it?
Scroll saw	A scroll saw is a small electric saw used to cut intricate curves in wood, metal, or other materials. The fineness of its blade allows it to cut more delicately than a power jigsaw, and more easily than a hand coping saw or fretsaw	**Wood finishes**	Wood Finishes are used to protect the wooden surfaces from moisture. Wax, paint and varnish are all popular wood finishes.
Centre punch	A hand punch consisting of a short steel bar with a hardened conical point at one end used for marking the centres of holes to be drill out accurately.	**Chamfer**	A cut on the edge or corner of something that makes it slope slightly rather than being perfectly square, can make objects feel less sharpe and produce a finished look.
Hand drill	A drill is a tool primarily used for making round holes or driving fasteners like screws.	**Health and Safety**	Regulations and procedures intended to prevent accident or injury in workplaces or public environments.

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Topic key terms	Definition
Computer system	A computer system takes a set of digital inputs, processes them and creates a set of outputs.
Input	A computer system needs an input, in the form of data. Somehow the data has to get into the computer and this is done by using an 'input device.'
Computer processing	The main purpose of a computer is to process data. Once data has been input into the computer system something needs to happen to it i.e. it needs to be processed.
System software	These are programs that manage the operation of the computer. System software boots up the computer when you switch it on. System software tells the CPU how to communicate with other parts of the system such as the hard disk or DVD drive. Another task of system software is to load up the relevant application software when called for. An 'operating system' such as Windows or Linux is an example of system software.
Application software	These are computer programs written for a specific purpose. For example, a word processing application, a music player or photo editor. There are thousands of application programs available.
Output	Like input devices, output devices are also examples of computer hardware. This is because they are physical objects that you can see, touch and often pick up. The 'output' is what comes out of the computer after the processing stage is complete.
Central Processing Unit (CPU)	The CPU is a single electronic chip within the system. Another term often used for the CPU is a microprocessor. The CPU (or microprocessor) is the 'brain' of the computer. It takes input, processes it and produces output data.
Data bus	This carries the actual data around the system. Each wire or track carries a single data bit.
Address bus	This carries information on where the data needs to go or come from i.e. the data address.
Control bus	This carries signals around the system to control various components such as the DVD drive, hard disk or graphics card
The clock	The clock is a tiny quartz crystal inside the CPU. It ticks at a steady speed. This is called the 'clock frequency' Each time the clock ticks, one complete fetch-decode-execute cycle will take place. This means that during each tick, a single instruction will be processed.
Overclocking	The CPU clock speed can be increased beyond the normal design limit. This allows the CPU to process more instructions per second. This is called 'overclocking'. It is something gamers like to do with their machines. But to overclock, you will need a very good cooling system to stop the CPU from overheating.
Core	A 'core' is a complete processing unit within the CPU. It has its own ALU, Control Unit and Registers.
Parallel processing	Parallel processing is where a single task is split into two or more parts and each part is processed at the same time. However, this doesn't always double performance as some programs are sequential and cannot easily be split into two parts.
Central Processing Unit (CPU)	The CPU is a single electronic chip within the system. Another term often used for the CPU is a microprocessor. The CPU (or microprocessor) is the 'brain' of the computer. It takes input, processes it and produces output data.
Data bus	This carries the actual data around the system. Each wire or track carries a single data bit.
Address bus	This carries information on where the data needs to go or come from i.e. the data address.
Von Neumann Architecture	Von Neumann realised that it was possible to design a computer which could change programs without the need to rewire it each time. His design has become known as the 'stored program' computer or the 'Von Neumann architecture'
Harvard Architecture	There is an alternative architecture called the Harvard Architecture. This has the idea of keeping data and instructions in separate memory.
Accumulator	The accumulator is a register that is used to temporarily store data whilst calculations are being performed within the Arithmetic Logic Unit (ALU).
The Program counter	The program counter is used to identify the location of the next instruction (or data) to be executed by the CPU.
The instruction register	A hardware element that receives and holds an instruction as it is extracted from memory; the register either contains or is connected to circuits that interpret the instruction.

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Topic key terms	Definition
Memory Address Register (MAR)	The MAR holds the address of the next item of data that is needed by the processor.
Memory Data Register (MDR)	The MDR holds data that is either to be passed to the data bus or has just been received from the data bus.
Arithmetic and Logic unit (ALU)	The Arithmetic and Logic Unit is used by the processor to carry out operations that require the use of: Logical operations such as AND, OR, NOT and Arithmetic operations such as +, -, *, /
Control Unit	The control unit is the term used to describe the part of the processor containing decoding circuitry and a series of independent lines that need to be used to signal the current state of the processor and fetch/execute cycle.
Registers	Registers are used to store data, instructions or addresses on the actual processor. A register is simply a storage location on the processor. Data/instructions/addresses that are needed during the fetch/execute cycle are held within registers.
Cache	Cache is a small amount of memory which is a part of the CPU - closer to the CPU than RAM. It is used to temporarily hold instructions and data that the CPU is likely to reuse. The CPU control unit automatically checks cache for instructions before requesting data from RAM. This saves fetching the instructions and data repeatedly from RAM – a relatively slow process which might otherwise keep the CPU waiting. Transfers to and from cache take less time than transfers to and from RAM.
Buses	Buses are circuits on the motherboard that connect the CPU to other components. There are many buses on the motherboard. A bus moves instructions and data around the system. The speed of a bus is measured in megahertz (MHz). The faster the bus, the faster data is communicated. The speed of the motherboard is defined by the bus speed.
Pipelining	Modern processors can use a technique called pipelining which allows them to process more than one instruction at a time. While the first instruction is being decoded, the second instruction can be fetched. While the first instruction is being executed, the second can be decoded and third can be fetched.

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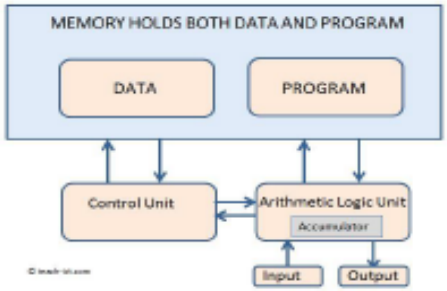
In 1945, a mathematician called John von Neumann realised that it was possible to design a computer which could change programs without the need to rewire it each time. His design has become known as the 'stored program' computer or the 'Von Neumann architecture'
With the Von Neumann architecture, the program instructions and data are stored in computer memory (RAM). Because of this, the CPU can change tasks simply by loading a different program into memory – no rewiring needed!
The Von Neumann architecture is not an actual computer. Rather, it is an idea of how a computer should be built.

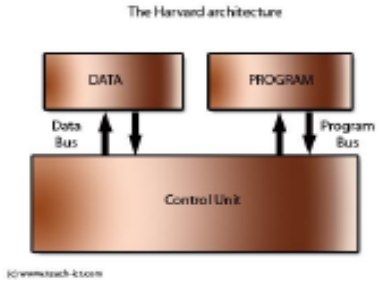
Features of VN architecture

- RAM - There needs to be enough memory to hold both programs and data. This makes it easy to change tasks by loading in a different program.
- A **control unit** responsible for handling the movement of instructions and data around the computer
- Data and instructions are carried on buses
- There is an arithmetic logic unit (ALU) which is responsible for carrying out calculations and logic comparisons
- There are registers, a small but very fast type of memory, inside the CPU. The accumulator is one such register
- There is a way to input data into the computer and to output information

Von Neumann only mentions a single register called the accumulator.
Real CPUs use many more registers in order to process instructions/data more efficiently.



There is an alternative architecture called the Harvard Architecture.
This has the idea of keeping data and instructions in separate memory.
However, its disadvantages such as cost and complexity mean it is not as popular as the Von Neumann architecture.



Motherboard
The motherboard is a circuit board that connects the CPU to the memory and all the other hardware. The CPU sits on the motherboard (also called the logic board).

Clock speed
The clock speed - also known as clock rate - indicates how fast the CPU can run. This is measured in megahertz (MHz) or gigahertz (GHz) and corresponds with how many instruction cycles the CPU can deal with in a second. A 2 GHz CPU performs two billion cycles a second. A faster CPU uses more energy and creates more heat.

A computer will normally have a maximum clock speed set by default, but it is possible to change this speed in the computer BIOS. Some people increase a CPU clock speed to try to make their computer run faster - this is called overclocking.

There are limits to how fast a CPU can run and its circuitry cannot always keep up with an overclocked speed. If the clock tells the CPU to execute instructions too quickly, the processing will not be completed before the next instruction is carried out. If the CPU cannot keep up with the pace of the clock, the data is corrupted. CPUs can also overheat if they are forced to work faster than they were designed to work.

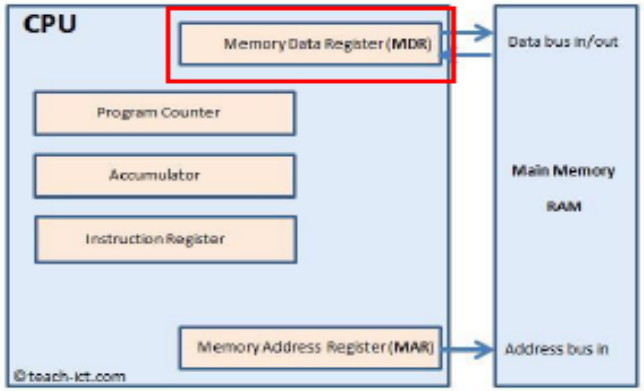
Cores
A CPU can contain one or more processing units. Each unit is called a core. A core contains an ALU, control unit and registers. It is common for computers to have two (dual), four (quad) or even more cores. CPUs with multiple cores have more power to run multiple programs at the same time.

However, doubling the number of cores will not simply double a computer's speed. CPU cores have to communicate with each other through channels and this uses up some of the extra speed.

Registers
A register is a type of very fast, temporary memory, which can hold a data value.

As the CPU processes data, the software program will shift the next data or instruction in and out of these very fast registers, it works like this:

Step 1: When the CPU needs to fetch an instruction or data from main memory (RAM), it is initially stored in the MDR.
Step 2: It is then moved from the MDR to the relevant register in order to be processed.
Step 3: Having fetched an instruction from RAM, (which is stored in the MDR), it is then transferred to the Instruction Register to be decoded and executed.
Step 4: The program counter is used to identify the location of the next instruction (or data) to be executed by the CPU.
Step 5: The MAR is updated by the program counter to contain the location (address) of the next instruction / data to be fetched from RAM
Step 6: This address/ location is passed to RAM via the address bus.
Step 7: The accumulator is a register that is used to temporarily store data whilst calculations are being performed within the Arithmetic Logic Unit (ALU).



Buses
A bus is a set of wires or tracks laid down on a printed circuit board.

Their role is to carry data around the system.

The data bus carries data around the system

The address bus carries information on the location of the data

The control bus handles commands to control devices e.g. hard disk, monitor etc.

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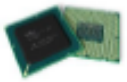
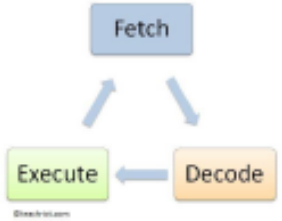
The CPU and memory work together to run programs.
CPU - executes programs using the fetch-decode-execute cycle
Inside the CPU is a clock. Every time the clock 'ticks', a single instruction can be processed.
Now this may not sound like a lot but the CPU can process billions of instructions per second.

Fetch-Decode-Execute





Software (programs) provide the CPU with instructions, telling it what to do next.
The software is loaded, by the operating system, into main memory (RAM)
We are going to look at the fetch-decode-execute cycle in more detail.
It is important to realise that there can be more than one program running in main memory at any given time (they take turns executing their instructions in the CPU).
Also, programs do not necessarily start at location zero in main memory.
In the table below are a list of the registers involved in the FDE (you do need to know about these for your exam

Your turn:
Assume the number of the instruction is 412
Assume the accumulator is at 9
Assume the content is ADD#9

Program counter (PC)	
Memory Address Register (MAR)	
Memory Data Register (MDR)	
Instruction register (IR)	
Accumulator	

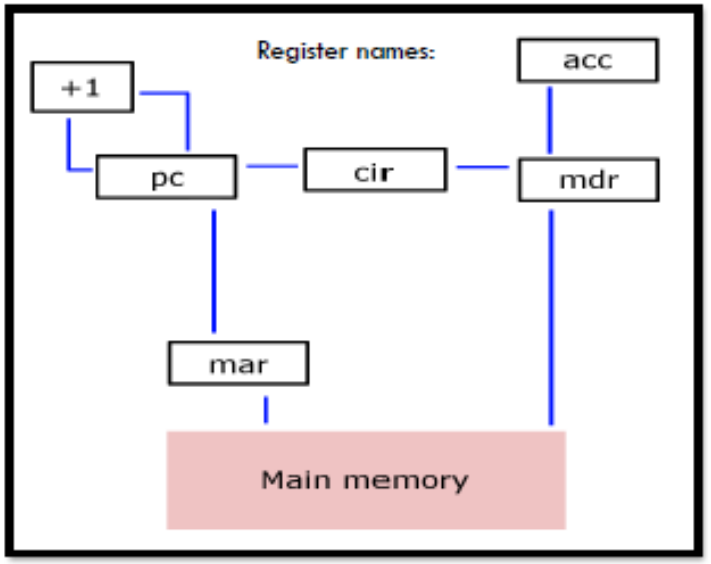
Remember these important steps!

1. Put the number of the instruction in the Program counter (in this case 305)
2. Update the accumulator (if it is the first it will be 0)
3. Copy the PC number into MAR
4. The content of the address bus is put in MDR and IR, in this case it states ADD#5
5. Increment the PC by 1
6. Checks the instruction is valid
7. Updates the accumulator with the calculation it was told.

If you followed it then you should have ended up with the result to the right of this text.

Program Counter	305
Memory Address Register	
Memory Data Register	
Instruction Register	
Accumulator	0

Program Counter	306
Memory Address Register	305
Memory Data Register	ADD #5
Instruction Register	ADD #5
Accumulator	5



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1.2 Memory and 1.3 Storage

Computer memory is often called main memory, or sometimes primary storage.

It comes in different forms:
- Random Access Memory (RAM)
- Read Only Memory (ROM)
- Virtual memory
- Flash memory

The key thing to remember is that **main memory can be directly accessed by the CPU.**

Memory is either volatile or non-volatile. **Volatile** memory only stores information to run programs while the computer is on. It is reset and emptied once the computer is turned off. Volatile memory requires electricity to store data using transistors and capacitors.

There is a key difference between memory and storage. Programs are kept on a storage device and copied into the computer's memory before they are executed. Storage is also called secondary storage.

Storage and read only memory (ROM) use non-volatile memory to retain data - even when the computer has been switched off. In older computers, paper, punched tape and floppy disks have been used for non-volatile memory.

The following are all types of primary memory listed in order of closeness to the CPU:
1. registers
2. cache
3. RAM
4. virtual memory

The closer a memory type is to the CPU, the quicker the CPU can access the instructions and execute them. However, the closer it is to the CPU the smaller and more expensive it is. Each type of memory is limited by their speed, size, cost and position in relation to the CPU.

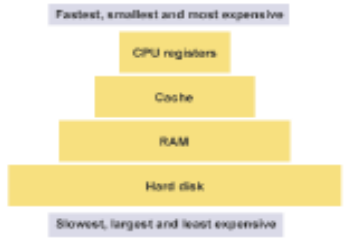
Virtual memory is a section of volatile memory created temporarily on the storage drive. It is created when a computer is running many processes at once and RAM is running low.

The operating system makes part of the storage drive available to use as RAM. Virtual memory is much slower than main memory because processing power is being taken up by moving data around, rather than just executing instructions. Latency is increased when the computer needs to use virtual memory.

Swapping (also called paging) is the process the OS uses to move data between RAM and virtual memory. The OS moves data from processes that are not immediately needed out of the RAM and stores them in virtual memory. It copies the data back into RAM when the process is needed again.

Using virtual memory slows the computer down because copying to a hard disk takes much longer than reading and writing RAM. This constant switching between RAM and virtual memory can lead to a high rate of hard disk access. This is called 'disk thrashing' – you can hear the hard disk working when this happens.

Also, the computer's performance tends to slow down if virtual memory is being heavily used.



Latency is the time it takes for components to respond to a request. There will be a short delay, even a few milliseconds between asking the computer to execute a program and it finding the files in the memory. The circuitry that makes up primary memory is very fast, but not as fast as the CPU clock speed. Some instructions are copied into cache to make them more quickly available to the CPU.

RAM is the main place for storing instructions and data whilst a program is being executed. It is also called main memory. Program data is copied into RAM before the CPU can run the program.

RAM is usually measured in gigabytes. The more gigabytes of RAM a computer has, the more programs and operations it can handle at the same time.

Each unique memory location in RAM holds one word of information. Every memory location has a unique address so that once data has been stored there it can be found again later when it's needed. RAM also has a word size measured in bits to indicate the size of the memory locations.

DRAM and SRAM - There are two types of RAM: dynamic RAM and static RAM.
- Dynamic RAM (DRAM) uses a transistor and a capacitor to represent and store a bit of data. The charge needs to be refreshed every few seconds.
- Static RAM (SRAM) uses a group of transistors combined for each bit of data. They do not lose the charge while in use so SRAM is much faster than DRAM. SRAM technology can be non-volatile when used for flash memory in storage and ROM.

DRAM is usually used for the main RAM memory. SRAM is used for cache memory. Static RAM is more complex to build and much more expensive than DRAM.

Word size
- The word size of the machine is how many bits its CPU can manipulate in one go.
- The amount of data that a CPU can manipulate with one machine code instruction or transfer over a bus is measured in bits. When you look up the CPU specifications of any computer or games console, you will find out if it is a 32-bit, 64-bit or 128-bit machine.
- A CPU with a 64-bit word size can process 64 bits using one single machine code instruction. This is twice as many bits as a 32-bit CPU.
- Increasing the word size means more data can be manipulated at a greater speed. It also means that the CPU can keep track of a larger range of memory locations.

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In the exam, you might be given a scenario and then asked to recommend suitable storage media. When making your recommendation, always make a comparison between your choice and other storage technology, e.g. a USB memory stick vs a DVD, a magnetic hard drive vs a SSD.

Capacity

Capacity is the amount of data that can be stored on the media.

Speed

Speed refers to how quickly the data can be accessed from, or written to, the media

Portability

This refers to how easily the media can be physically moved.

Durability

This refers to how resistant the media is to damage. Can it survive knocks, scratches, being dropped etc?

Reliability

This is about how reliable the media is.
Will it store data for a long time?
Will it break down?
Can you rely upon being able to access the data no matter what?

Cost

This is how expensive the media is in terms of cost per gigabyte of storage.

ROM (read only memory) is a flash memory chip that contains a small amount of non-volatile memory. Non-volatile means that its contents cannot be changed and it retains its memory after the computer is turned off.

ROM contains the BIOS which is the firmware for the motherboard. The BIOS contains the bootstrap – the program which takes the computer through steps that load up to the loading of the operating system (OS). It happens between turning on the power and the computer beeping to say it is starting to load the OS. This process is known as POST (power on self test) on a PC.

The boot sequence is the computer's initial start-up process. After the boot, the OS controls the CPU and supplies the programs to run. Until recently, ROM was always used to store the computer boot up instructions (BIOS). Nowadays, the BIOS tends to be stored in flash memory. ROM is still used to store the MAC address on a network card.

Types of ROM include:

- PROM (programmable read-only memory) - manufactured as blank ROM. PROM chips can be bought cheaply and programmed directly by a programmer. They are not rewritable so they can only be programmed once.
- EEPROM (electrically erasable programmable read-only memory) - popular in PCs and smartphones as the firmware can be easily updated by the manufacturer. This is similar to a rewritable CD in that the chip can be reprogrammed.

Magnetic storage

- It uses minute magnetic particles or 'domains' to store data. Examples of magnetic storage are:
  Hard disk
  Magnetic tape
  Floppy disk (now obsolete)
- Advantages - Huge storage capacity – measured in terabytes (TB), cheaper than the others and data can be stored for a long time.
- Disadvantages – Not as portable as the others, magnetic fields can become corrupt, moving parts means it can be damaged and slower to access data than flash.

Optical Storage

- Optical storage includes CDs, DVDs and Blu-Ray disks
- A laser beam burns tiny dark pits onto the surface of an optical disk.
- If a pit is present it can represent a data bit of 1. No pit can represent a data bit of 0.
- Advantages – Portable compared to hard disk and inexpensive.
- Disadvantages – disks can be damaged easily and slower to write than other media.

Solid state/Flash

- Solid state media /flash, includes USB memory sticks, solid state drives (SSD) and SDHC memory cards (in cameras)
- Solid state media holds data using electronic switches.
- If the switch is open it represents a 1. If it is closed, it represents a 0.
- Advantages –very portable compared to the other storage devices, robust as no moving parts so less likely to be damaged and faster to access data from.
- Disadvantages – expensive compared to other media and have a limited number of erase/write cycles.

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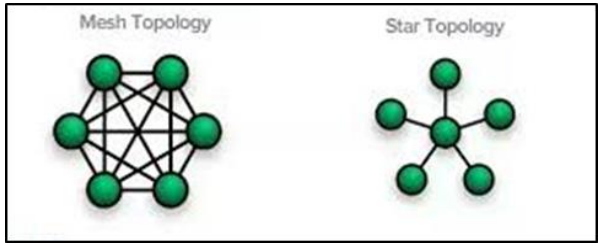
Key term	Definition	Key term	Definition
Network	2 or more connected computers. Computers are linked together in order for them to share and exchange data with each other. When this is the case, the computers are said to be NETWORKED. A network can be any combination of LANs or WANs	**LAN**	Local area network covering usually 1 room, building or site
WAN	A wide area network or WAN is a computer network that joins computers together over long distances. Computers on a WAN can be joined using the public telephone system, fibre optic cables, satellites or other means.	**Server**	A server is a networked computer that is providing a specific service to other computers on the network. For example: File server -Users store files on the network file server. Users can do all the usual file functions - copy, delete, change, duplicate by sending commands to the file server.
Topology	The layout of a network	**Encryption** 	Encryption means to scramble a message in such a way that only the people who are meant to read it can do so.
Mesh network	When all of the computers are linked together 	**Ethernet**	Ethernet is a computer networking protocol. In this protocol, all networked computers are connected together by a wire or channel. (The channel is often a type of radio link called "Wi-Fi").
Star network	When all of the computers are linked to a central server	**Layers**	Something that provides data routing paths for **network** communication (a group of protocols)
WIFI	A type of network that makes use of radio channels to	**Packet**	When data e.g. web pages, emails, instant messages etc. are

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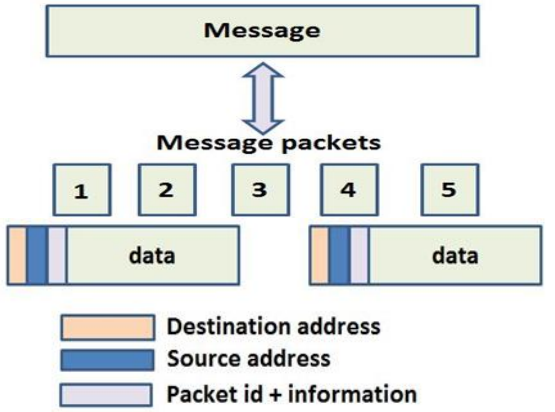
	connect either to a local area network (LAN) or a router linked to the Internet	**switching**	sent across the internet, they are not sent as one big file. Instead, the file is broken up into lots of parts called 'packets'. 
Network protocol	An agreed method of communication to be used within the network. Examples are: -Transmission Control Protocol / Internet Protocol **[TCP/IP]** -Hyper Text Transfer Protocol **[HTTP]** -Hyper Text Transfer Protocol Secure **[HTTPS]** -File Transfer Protocol **[FTP]** -Post Office Protocol **[POP]** -Internet Message Access Protocol **[IMAP**] -Simple Mail Transfer Protocol **[SMTP]**	**Network Interface card (NIC)**	Enables a node to be able to connect to a network 
Node	A device connected to a network	**Router**	Transfers data from one network to another e. between networks
Hub	Small device which links nodes together to form a network. Hubs will transmit data from node to another in the form of data packets. When a data packet arrives at the hub, it is transmitted to every other node on the network	**Switch**	A switch is similar to a hub as it allows computers to be linked together to exchange data. But, unlike a hub, a switch sends the data packet only to the intended node. It does this by reading the destination information within the data packet

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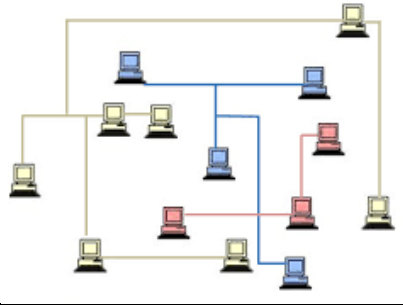
WAP	Wireless access point is used to connect Wi-Fi devices to a wired network, without the need for physical cables	**MAC address**	A media access control address (**MAC address**) of a device is a unique identifier assigned to a network interface controller (NIC).
Bandwidth	Bandwidth is the measure of capacity of a communications channel. It measures the amount of data which can be uploaded or downloaded in a specific measure of time.	**Latency**	How much time it takes for a packet of data to travel across the network.
Contention ratio	The ratio of users compared to the available bandwidth.	**Network speed**	The speed of a network is measured in 'bits per second'. This is also known as the 'bit rate' .One bit of data is a single 0 or 1
Error Rate	An error can happen when, for example, a binary 1 is sent across the network, but instead, a binary 0 is received. There are two reasons why this can happen: Interference, weak signal	**Transmission media**	Data can be carried around networks via cables or wirelessly. The type of cable chosen can affect the network performance. 
Virtual Network	A smaller part of a LAN or WAN in which only specific machines can see each other. It is set up using software. 	**Peer to peer network**	Usually found in homes and small offices where only a few computers are connected together. They can support up to a maximum of 10 workstations – hence why they aren't suitable for larger organisations.

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Cambridge National in Enterprise & Marketing
R064 Learning Outcome 1

What is Market Segmentation?

Market Segmentation is the process of grouping potential customers together based on different factors. It is basically the method used by businesses to identify their target customer/market.

Markets can be segmented in different ways and some businesses choose to use more than one characteristic to specifically segment their market.

Explain each of these ways a market can be segmented…

☆ **Age** – This is basically how old the customer is. Businesses tend to segment their market into age brackets. Toys, for example, are aimed at younger audiences, potentially between ages 3 and 13.

☆ **Gender** – This is whether the target customers are typically going to be male or female. Make-up, for example, is targeted at females – this doesn't mean that males cannot buy it, it is just who the business is targeting.

☆ **Occupation** – Occupation means the job or career that the people within the target market may have. This could be a specific job, for example Gym equipment being targeted at Personal Trainers, or a more general group of jobs, Office Workers for example.

☆ **Income** – Some businesses segment their market based on how much money their potential customers make. Luxury branded items, for example, will be targeted at customers with more disposable (spare) income.

☆ **Geographic** – This is when businesses segment their market by their location. A local newspaper, for example, will segment their market to include only those in the area in which the newspaper reports.

☆ **Lifestyle** – Businesses could segment their market based on what their customers' lifestyle is like; this is basically their hobbies, their routines and their habits.

What are the benefits of Market Segmentation?

By segmenting their market, businesses are:

- Able to focus on the wants/needs of specific customers and more likely to meet these wants/needs.
- More likely to make sales because they've focused on specific groups of people (if they segment successfully).
- More able to focus their advertising and other marketing at the right groups of customers – if their market is segmented to include female customers, then the business could choose to advertise in magazines aimed at females, for example.
- More able to produce a specific customer profile, which is a portrait of the business's main target customer.

How do customers vary (how are they different)?

Customers are different/vary because of:

- The amount of money they are able to spend
- The amount of money they are willing to spend (some older customers may have more money, but may not be willing to spend this money as readily as younger customers)
- The quantity of products/services they require
- The quality of products/services they require
- The location in which they want/can purchase items (some customers prefer to buy online, for example)
- The time in which they want to/can purchase items

What Customer Feedback Techniques are available for business start-ups?

Customer Feedback Techniques are the methods a business uses to allow customers to tell them what they think about their products or services and can include:

- Social Media / Online Communities
- Websites with reviews
- Online surveys
- Customer comment cards
- Comments made to staff members
- Telephone/email surveys
- Email contact forms

Why are Customer Feedback Techniques useful for new business start-ups?

If things aren't going well for a business, customer feedback will give them the reasons why. Taking action could improve sales and help businesses meet customer wants/needs better. Customer feedback also makes people feel they are being listened to, so customer satisfaction will improve.

What is Market Research?

Market Research is the process of finding out what customers want and what they need. Businesses typically carry out Market Research before developing a new product as well as during the testing of the product to get the opinions of their potential customers.

What is the purpose of Market Research?

The purpose of Market Research is initially to find out what customers want and need – this helps businesses develop products that are more likely to be successful. Market Research also helps understand customers' tastes and opinions and can change the design or specification of products based on the outcomes of the research. Finally, Market Research can also be used to gauge what products are already on the market and what competitors are doing.

What is Primary (field) Market Research? Give example methods…

Primary Research, sometimes called Field Research, is when businesses gather their own data and information. This can be done through surveys, questionnaires, focus groups, observations, consumer trials and 'taste tests'. The data gathered is unique to the business and does not already exist.

What are the benefits of Primary (field) Research?

Carrying out Primary Research means that the results are exactly what the business wants to find out, because this research has been tailor made for their own specific needs. Researchers can include everything the business wants to find out from their potential customers.

What are the drawbacks of Primary (field) Research?

Primary Research is usually more expensive to carry out than Secondary Research because the business is creating and analysing everything from scratch. This also means that Primary Research is more time consuming to carry out and is, therefore, slower to get results for the business.

What is Secondary (desk) Market Research? Give example methods…

Secondary Research, sometimes called Desk Research, is when the business uses data or information that already exists. This is not tailor made for the business. Methods of Secondary Research include Internet research, books, newspapers and data already collected by competitors, the Government or other sources of statistics.

What are the benefits of Secondary (desk) Market Research?

Secondary Research is quicker to complete, because the data has already been collected and, in some cases, analysed.
Secondary Research is also cheaper to carry out – looking at websites for Internet Research is clearly cheaper than preparing and carrying out a questionnaire, for example.

What are the drawbacks of Secondary (desk) Market Research?

The data that is used when completing Secondary Research is not unique and not specific to the business's needs, unlike when Primary Research is carried out. Secondary Research doesn't allow businesses to ask further questions to those that took part in the research either.

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Composition- Chords within a key
Key terms and definitions

Term	Definition
Major	Happy sounding
Minor	Sad sounding
Diminished	Unsure sounding
Harmony	The harmonic mood of a piece/ Major/Minor
Chord progression	Series of chords
Flat	Flattened note (1 semi tone up)
Sharp	Sharpened note (1 semi tone down)
Relative Minor/Major	Related keys
Tonic	The main chord within a key
Quantize	Putting MIDI information in time
Structure	Sections of a piece
Verse, Chorus, Bridge, Intro	Popular section names
A. B- C- D-	Classical section names

Accompaniment	The additional parts
Bass line	The Bass part
Passing note	Notes from between the chord
Root note	The Main note of a chord- the Tonic
Inverted Bass	A note from within the chord which isn't the ROOT
Melody	The Main tune!
Conjunct	Stepwise melody
Disjunct	A disjointed melody
Circle of 5ths	FCGDAEB/BEADGCF
Repetition	A compositional device for repeating an idea/section/melody
The Musical elements:	TEMPO TEXTURE DYNAMICS HARMONY STRUCTURE RHYTHM MELODY SONORITY/TIMBRE

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Musical Elements- Year 9 Term One
Key terms and definitions

Tempo	***The speed of a piece of music.***
Vivace	*Lively and fast*
Andante	*Walking pace*
Moderato	*Medium pace*
Largo	*Slow*
Accellerando	*Getting faster*
Rallentando	*Getting slower*
Dynamics	***The volume of a piece of music.***
Piano	*Quiet*
Forte	*Loud*
Mezzo Piano	*Medium Quiet*
Mezzo Forte	*Medium Loud*
Crescendo	*Getting Louder*
Diminuendo	*Getting quieter*
Sonority	***The instruments heard in a piece of music.***
Strings	*Violin, Cello, Viola, Double Bass, Harp*
Brass	*Trumpet, French Horn, Trombone, Tuba*
Woodwind	*Flute, Clarinet, Oboe, Bassoon, Saxophone*
Percussion	*Drums, Cymbal, Maracas, Things You Hit*
Band Instruments	*Electric/Acoustic Guitar, Bass Guitar, Keyboard, Synthesiser*
Voices	*Male/female voice, soprano, alto, tenor, bass*

Texture	***The layers used in a piece of music.***
Monophonic	*One single layer*
Homophonic	*Thick layers following the same pattern*
Polyphonic	*Lots of layers moving on their own*
Unison	*All doing the same*
Harmony	***The feel of the music.***
Major	*Happy sounding*
Minor	*Sad Sounding*
Rhythm/Metre	***The rhythmic patterns and timing in a piece of music.***
Beats in a bar	*How many beats are counted in the bar.*
Time signature/Metre	*4/4, 3/4, 6/8, 2/4*
Polyrhythm	*Lots of rhythms played at once*
Cross rhythm	*Rhythms crossing over each other*
Syncopation	*Rhythms off the main beat*
Melody	***The main tune in a piece of music.***
Steps/Conjunct	*Notes in a tune close together*
Leaps/Disjunct	*Notes in a tune far apart*
Scales	*A pattern of notes to create a melody from*
Structure	***The sections of a piece of music.***
Binary	*Section Order: A, B*
Ternary	*Section Order: A, B, A*
Rondo	*Section Order: A, B, A, C, A*
Arch	*Section Order: A, B, C, B, A*
Popular structure	*Intro, Verse, Chorus, Bridge, Outro*

BTEC Sport UNIT 6: Leading sports activities

Key words	Definition		
Attributes	A characteristic given to a person or group (communication/organisation/knowledge/activity structure/ target setting/use of language)	PARK-Q	The Physical Activity Readiness Questionnaire (**PAR-Q**) is an easy to use form that is used to see if participants should check with their doctor before becoming much more physically active
Qualities	Passion and enthusiasm is an important characteristic for a leader and one that can displayed in a number of ways (appearance/confidence/humour/leadership/motivation)	Risk assessment	A process of evaluating the potential risks that may be involved in an activity that you are undertaking. S
Responsibility	Responsibility means accepting that you have control over your thoughts, actions, and feelings. Recognising that you have the power to make both good choices and poor choices (professional conduct/equality/health and safety/ child protection/ ethnical values/rules and regulations)	Components of fitness	Agility. Balance. Body Composition. Cardiovascular Endurance. Coordination. Flexibility. Muscular Endurance. Muscular Strength
Intrinsic motivation	You do something for your own love and enjoyment, gaining self-satisfaction	Laissez Faire Leadership	Very little if any leadership, more responsibility on players or pupils to run drills
Extrinsic motivation	You do it for extra rewards such as medals, certificates, money, recognition	Warm up/ cool down	A warmup gradually increases your cardiovascular system by raising your HR and body temperature therefore increasing blood flow to your muscles. Warming up may also help reduce muscle soreness and lessen your risk of injury. Cooling down after your workout allows for a gradual recovery allowing the heart rate and blood pressure to be reduced to normal state.

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Autocratic leadership	Full control due to hazards/dangers	Activity structure	The relationships among the subjects, actions, objectives, tools, rules and outcomes involved in an **activity**
Democratic leadership	Some leadership lead by pupils – for example a warm up	Transition	Changing from one state or condition to another

Sports Leadership: Unit 6 Leading sport activities			
Unit 6: A: know the attributes of a good leader B: Planning/leading a sport lesson C: Review/analysis your leadership	**Key Elements that must be covered**	**Key Terms**	**Assignments**
A  	-Skills	Communication, organisation, knowledge,	3 posters based on attributes, qualities and responsibilities – sport examples used throughout to support knowledge and understanding.
	- Advanced skills	Activity structure, target setting, use of language, evaluations,	
	-Qualities	Appearance, enthusiasm, confidence,	
	-Additional qualities	Leadership style, motivation, humour, personality	
B 	- Safe practice	- Organisation of group/activity - Safe supervision (e.g. as a leader, coach)	Practical element, students will lead their planed sessions
	- Delivery style	- Proactive/reactive/demonstration/explanation	
	- Communication skills	- Verbal/non-verbal & appropriate language & technical terms	
	- Motivation techniques	- Encouragement, extrinsic motivators (e.g. rewards, prizes)	
	- Activity-specific knowledge	- Appreciation/understanding of current techniques and tactics which are appropriate to the requirements of the performers	
	- Adaptability	- Making adjustments in an activity that isn't working,	

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		addressing issues you hadn't prepared for	
C 	- Key aspects to consider in evaluating planning and delivery of a sports activity session	– Against the plan (e.g. was the order of activities effective? against the delivery (e.g. did I keep everyone motivated?)	- Students to explain their strengths and areas for development in their session - Explain what they would change and why' were they to deliver the session again? - What would the student personally change from how they delivered their session
	- What did not go well?	– Against the plan (e.g. did I consider an appropriate number of activities?) against the delivery (e.g. was the group listening to me?)	
	- What could be improved for the future?	- Against the plan (e.g. were the group's objectives met?) against the delivery (e.g. could I position myself better when communicating with the group?)	

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Questions targeting key words	
What is the difference between intrinsic and extrinsic motivation?	When would someone approach a lesson with Laissez Faire style leadership?
State a sporting example when you would have to be an autocratic leader?	As a sport leader what are you responsible for?
What is a good sports leader?	Prior to delivering a lesson what would you do?
Can you list good qualities of a sports leader?	How can you identify who is a good sports leader or not?
What are the different components of fitness?	Why is it important to have good transition when changing from one drill to another?
Why do we warm up and cool down?	What is the purpose of a PARK-Q and a risk assessment ?