ORMISTON SWB ACADEMY

Knowledge Organiser

Autumn Term 2024 – Year 9

Name: _____

Form: _____

Please remember to bring this into school everyday

Regular retrieval throughout a scheme of learning (daily, weekly and monthly) has been proven to reduce the rate of forgetting, supporting you to **retain more in long term memory**- making assessments/ exams way easier! The challenge for you as a student is to **make sure you use your knowledge organiser for each subject properly** to help you to know more and remember more over time. **We've created this walk through to support you** in using your knowledge organiser- for more support speak to your subject teachers

Using your Knowledge Organiser

You will use your knowledge organisers during lessons to engage and support with securing essential knowledge.
We expect you to use your knowledge organisers at home to support with independent study. Below you will find a step-by-step guide of 4 different revision strategies you can use at home. QR codes can be found at the back of this booklet which will link you to videos of these strategies in action.

Strategy 1- Look, cover, write, check – A really simple but effective way to use your knowledge organiser. Focus on a specific area of your knowledge organiser

1	2	3	4	5
Look	**Cover**	**Write**	**Check**	**Repeat**
Start with a **small section of knowledge** that you want to remember e.g *Henry VIII's wives in History.* Read through this section of the knowledge organiser (a couple of times if it helps)	Now **cover up this section** of your knowledge organiser with a post it note or scrap paper.	**Self quiz- what can you remember** and rewrite? Make sure you do this without looking back at your knowledge organiser.	**Remove the post it and check for accuracy**- did you get the key terminology? Was it spelt correctly? Was the order correct? If you drew a diagram, how much of this did you get correct? Most importantly- what did you miss out? Make your corrections in green pen.	After a short break away from your knowledge organiser repeat the look, cover, write, check **until you can recall all of the facts correctly without prompts.** This process can be used for any new knowledge that you want to acquire. It is good idea to do this on a regular basis, once a week.

Strategy 2-Self-Quizzing – You might try this after a few weeks of using your knowledge organiser. Get someone (or yourself) to set you 10 questions using your knowledge orgainser. These could be spellings, key words, equations etc to see how much you can remember! Record your score and see if you can beat your personal best each half term

1	2	3	4	5
Select topic	**Prepare the quiz**	**Answer it**	**Self check**	**Repeat**
Decide **which area you want to be quizzed** on (this might build up over time)	**Create 9 questions on that topic** or, ask somebody else to prepare 10 random questions for you.	**Set a time limit** (depending on the number of questions) and answer the questions without looking at your KO.	Now look at your KO to **self-check**- make a note of your score. Celebrate your successes and make a note of anything you missed or got incorrect.	**Return to this section** in 2/3 weeks- see if you can improve your score! Re-do those questions that you missed or got incorrect.

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Strategy 3- Mind-Maps- Mind maps provide a structured way to capture and organize ideas and information. Use your knowledge organisers (and other resources) to produce your own detailed mind-maps.

1	2	3	4	5
Select a topic	**Identify the key concepts/ideas**	**Add your visuals**	**Unpack the content**	**Test**
Choose a topic from your knowledge organsier/subject	Identify 3-5 key points that you need to remember for this topic and add these branches to your mind-map. You should colour code the different branches so you can visually identify the different concepts.	Add images/icons where appropriate to help you identify and remember key information.	Under each branch (key point), ensure you summarise the key information you need e.g. key dates, facts, beliefs, impact or influence. This will depend on the individual subject.	Once these are complete, you could use the look, cover, write, check method to test your knowledge.

Strategy 4- Flash Cards- Flashcards are small note cards used for testing and improving memory through practiced information retrieval. Flashcards are typically two-sided, with the prompt on one side and the information about the prompt on the other.

1	2	3	4	5
Select a topic	**Identify the key concepts/ideas**	**Add your visuals**	**Unpack the content**	**Test**
Choose a topic from your knowledge organsier/subject which you wish to summarise	On one side of your flash card add the concept or title e.g. Equality or, a question you need to know the answer to e.g. State three ways in which women have been treated unequally to men in the past	Add images/icons where appropriate to help you identify and remember key information.	On the reverse of the flash card add the essential knowledge needed for the concept or write to the answer to the question you have written. This will make it easier to revise from or, for others to ask you questions.	Once these are completed, see how much you can remember for each question/concept by writing it down on a separate piece of paper before you check your answers or, ask somebody to test you. Keep doing this until you can recall all of the information.

Contents Page

Year 9 – English – Noughts and Crosses

Key quotations

"Why couldn't my family live in a house like Sephy's?"

Chapter 2- Callum reflecting on his life and lack of privilege (g).

"What was it about the differences in others that scared some people so much?"

Chapter 2- Callum trying to understand discrimination (n).

"I hadn't fully realized just how powerful words could be before this. Whoever came up with the saying 'sticks and stones may break my bones but words will never hurt me' was talking out of his or her armpit."

Chapter 7- Sephy on the power of words.

"Stick to your own kind. If you sit with the blankers again, everyone in this school will treat you like one."

Chapter 7- Lola is another Cross who was angry that Sephy sat with the Noughts.

"The news lies all the time. They tell us what they think we would want to hear."

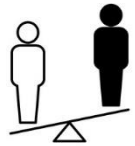
Chapter 15- Sephy knows that the media (p) can brainwash people.

"Just remember, Callum when you're floating up and up in your bubble, that bubbles have a habit of bursting. The higher you climb, the further you have to fall."

Chapter 32- Callum dreams of a better future where everyone is treated equally. Lynette is trying to advise Callum to be realistic about his future.

"That just the way it is. Some things will never change. That's just the way it is. But don't you believe them."

Chapter 32- Lynette tells Callum that he doesn't have to follow society's expectations.



Plot overview

CALLUM AND SEPHY

- Callum – a nought – is about to start at Heathcroft High – the Cross school that Sephy attends.
- The Noughts are treated differently by the staff and students.
- Sephy is beaten up for sitting with the Noughts.

THE TURNING AND THE PICNIC

- Sephy happily recalls a previous summer picnic but Callum remembers being accused of having stolen the first-class train ticket that Sephy has purchased for him.
- Though he resents the Crosses and a world that divides people, he cannot hate Sephy.

THE BREAKDOWN

- Jude fights with Lynette about her confused identity.
- Lynette's traumatic past is revealed.
- Callum tries to defend himself when he gains low marks for his work with Mr Jason who is 'half-nought'.
- Lynette commits suicide.
- Mrs Hadley attempts to commit suicide.

THE SPLIT

- Ryan McGregor and Jude join the LM.
- A bomb explodes at Dundale shopping mall.
- Sephy starts drinking.
- Callum is arrested after his house is raided.
- Callum is suspended from Heathcroft High.

THE TRIAL

- Sephy plans to go to a boarding school.
- Ryan McGregor is on trial for the bombing.
- Kelani Adams is mysteriously hired to defend the case.
- Sephy is called on as a witness against Ryan McGregor.
- Ryan pleads not guilty.

THE WAY IT IS

- News breaks that Ryan McGregor has been electrocuted, escaping from prison.
- Sephy tells Callum she would run away with him but he meets Jude and is encouraged to join the LM.
- Sephy goes to boarding school.

THE HOSTAGE

- Some years pass, and Callum is made sergeant with the LM.
- Sephy is taken hostage.
- Callum tries hard to be cold towards Sephy but they make love.
- Jude thinks that Callum has raped her.

THE CONFESSION

- Sephy finds that she is pregnant.
- Callum finds out about the pregnancy and risks all to see her, while Sephy's parents plan for her to have an abortion.
- Callum and Sephy meet in her rose garden– but Callum is captured and arrested.

DECISIONS

- Kamal Hadley offers Callum his life if he'll agree to admitting rape and thus enabling Sephy to have an abortion.
- He asks Sephy to choose between Callum's death and an abortion for her baby.

LOSING EVERYTHING

- The choice is made and Callum is hanged. As he dies he hears Sephy calling out that she loves him, just as she hoped he would.

Year 9 – English – Noughts and Crosses

Racism

Discrimination

Many of the hardships that Callum faces are based on real events in our own society. For example when he is abused when he is one of the first white students allowed into an all-black school; he only learns about black historical figures in class; and he is constantly put down by Crosses.

Justice

Inequality

Callum and Sephy both want justice (c) for Noughts; they want a world where everyone is equal, and they can be together. But when members of Callum's own family get caught up in the process of the law, it is clear that the legal system is rigged against them.

Forbidden Love

Conflict

Noughts and Crosses is a tragic love story. Like Romeo and Juliet, Callum and Sephy are torn apart by the warring sides to which each belongs. Their forbidden love and resistance takes place in a world of conflict.

Terrorism

Liberation Militia

The "Liberation Militia" (n) is a secretive group of Noughts who fight for equality (b) by planting bombs and murdering Crosses. Their terror tactics are like those of the IRA (o) in the latter half of the 20th century. As Callum becomes more upset and confused by the way he and his family are treated, he begins to relate to the LM.

Noughts
The McGregor Family

Ryan
Protective father
Joins the LM.

Meggie
Protective mother
Used to work for Hadley's.

Callum
Sephy's best friend who is intelligent and hard-working. Starts a Cross school which leads to discrimination (N) and bullying.

Jude
Callum's brother
Violent and aggressive
Joins LM.

Lynette
Jude and Callum's older sister.
She is mentally unstable.

Crosses
The Hadley Family

Kamal
Dislikes Noughts
Government official.

Jasmine
Neglected by husband and feels lonely.

Sephy
Privileged yet naïve to the brutal world around her. Daughter of the powerful Kamal Hadley. She learns to sympathise with Callum's suffering.

Minerva
Older sister of Sephy. She disagrees with Sephy's positive opinions of Noughts.

	Key terms	Definition
A	Discrimination	Treating a person or particular group of people differently because of their skin colour, sex or sexuality etc.
B	Equality /inequality	Equality - the right of different groups of people to have a similar social position and receive the same treatment.
C	Justice/ injustice	Justice - fairness in the way people are dealt with.
D	Prejudice	An unfair and unreasonable opinion or feeling, especially when formed without enough thought or knowledge
E	Segregation	The act of keeping one group of people apart from another and treating them differently, especially because of race, sex, or religion.
F	Ignorance	Lack of knowledge, understanding, or information about something.
G	Privilege	A special right or advantage granted or available only to a particular person or group.
H	Empathy	The ability to share someone else's feelings or experiences by imagining what it would be like to be in that person's situation.
J	Dual narrative	A story that is told from two different perspectives.
K	Apartheid	A policy or system of segregation or discrimination on grounds of race.
L	Classism	Prejudice against people belonging to a particular social class.
M	Social responsibility	Being responsible for how our actions can impact others in society
N	Militia	A military force that engages in rebel or terrorist activities in opposition to a regular army.
O	IRA	The Irish Republican Army who were a paramilitary organization that sought independence from Britain and a unified Irish republic.
N	Discrimination	Being treated differently because of age, sex, ethnic group or disability.
P	Media	Communicating to lots of people at once through TV, radio or the internet.

Year 9 – Maths – Unit A7 – Sequences

Finding Missing Terms

A sequence follows a pattern. Once you recognise that pattern you can find missing terms, or the next terms in the sequence.

Example:
1, 5, 9, 13, 17, … , …

If we want to find the next two terms, we can see the pattern/rule here is adding 4. So, the next two terms will be 21 and 25.

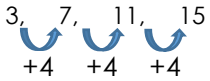
When there is more than one gap between terms in a linear sequence you can think about how much two 'jumps' are worth to find the common difference.
Example
4, … , 16, … , 28,

Two jumps is worth 12. One jump must be 6. The difference between each term is 6. The missing terms will then be 10 and 22.

Term to Term Rule

2, 6, 10, 14… This sequence follows the rule "add 4"
81, 27, 9, 3… This sequence follows the rule "divide by 3"
5, 8, 14, 23… This sequence follows the rule "add 3, add 6, add 9…"

You may be given the starting number then the rule.
Example Start at 3 add 4 each time



Position to Term Rule (Using the nth Term)

The nth term can be used to find any term in a sequence. To use the nth term you substitute in the value of the position you need.

Example
If the nth term is $3n - 5$ and you need to find the 10th term:

Substitute $n = 10$ into the nth term

$(3 \times 10) - 5 = 25$

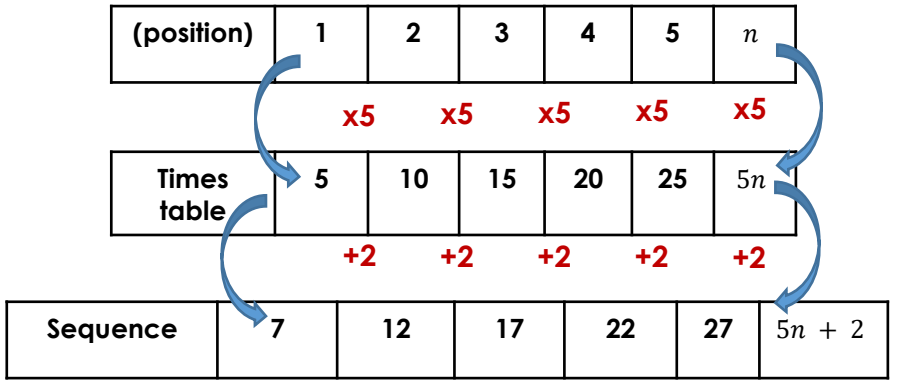
10th Term = 25

Finding the nth term

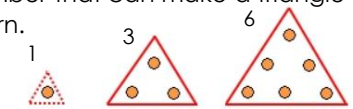
To find the nth term of a sequence, you first start by finding the difference of each term.

7, 12, 17, 22, 27, 32, 37, …
+5 +5 +5 +5 +5 +5

The difference between each term is 5. That means the sequence has something to do with the 5 times table, we can call this $\boldsymbol{5n}$
Then see what you need to do from the 5 times table to get to the number in the sequence



Therefore, the nth term of the sequence = $\boldsymbol{5n + 2}$

Keyword/Skill	Definition/Tips
Sequence	An ordered list of numbers or objects arranged according to a rule
Term	One of the numbers/objects in a sequence
Arithmetic/ Linear Sequence	A **sequence** made by adding or subtracting the same value
Geometric Sequence	A **sequence** made by multiplying by the same value each time.
Term to term rule	A rule that allows you to find the next **term** in a sequence if you know the previous term
nth term	The rule for finding any value in the sequence. Also called the Position to Term rule
Triangular Number	A number that can make a triangle pattern. E.g. 
Fibonacci Sequences	A sequence where the next number is found by adding up the previous two terms
Function	A special relationship where each input has a single output
Coefficient	A number used to multiply a variable 

Other topics/units this could appear in:
- Rearranging Equations
- Quadratic Sequences
- A Level Topics

Exam!
All sequences are not linear. If a sequence is going up by a different number each time, it can still be a sequence, it means it's just not linear.

Year 9 – Maths – Unit A7 – Sequences

Using the Nth Term

You can determine if a number is a term in a sequence by making it equal to the nth term and then solving the equation.
If the answer is an integer, then it is part of the sequence. If the answer is a decimal/fraction it is not part of the sequence.

Is 811 part of the sequence $8n - 5$?

$8n - 5 = 811$

$+5 \quad +5$

$8n = 816$

$\div 8 \quad \div 8$

$n = 102$ **Yes!**

Is 689 part of the sequence $5n + 6$?

$5n + 6 = 689$

$-6 \quad -6$

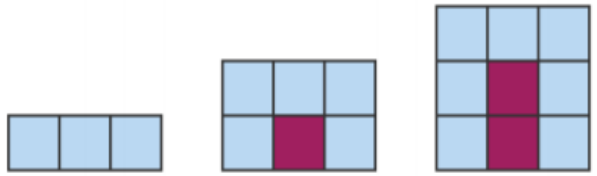
$5n = 683$

$\div 5 \quad \div 5$

$n = 136.6$ **No!**

Recognising Patterns from Diagrams

A number pattern in a diagram often requires counting shapes to find the rule. Look at how the pattern grows from one term to the next.



Pattern 1

0 purple
3 blue
3 in total

Pattern 2

1 purple
5 blue
6 in total

Pattern 3

2 purple
7 blue
9 in total

You can now predict that in pattern 4 there will be:
3 purple, 9 blue and 12 in total.

Special Sequences

There are some sequences you will need to recognise that aren't linear sequences.

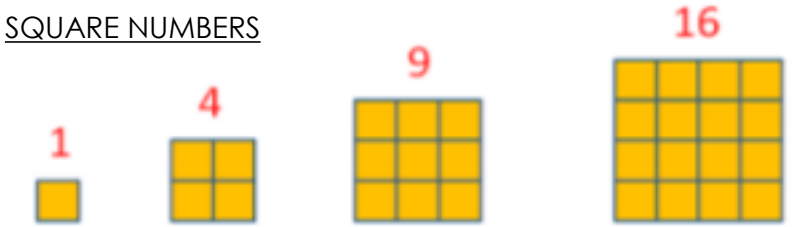
Square numbers – 1, 4, 9, 16, 25, 36, …

Cube Numbers – 1, 8, 27, 64, 125, 216, …

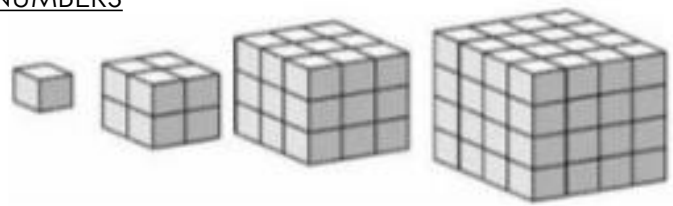
Triangle Numbers – 1, 3, 6, 10, 15, 21, 28, …

A Fibonacci Sequence – 1, 1, 2, 3, 5, 8, 13, 21, …

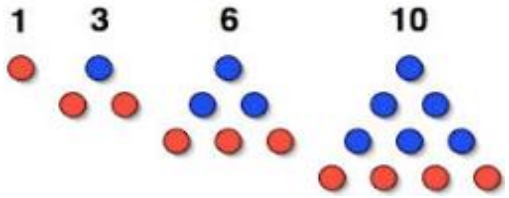
SQUARE NUMBERS



CUBE NUMBERS



TRIANGULAR NUMBERS



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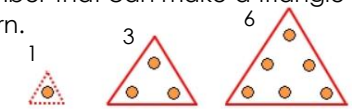
Triangular Number	A number that can make a triangle pattern. E.g. 
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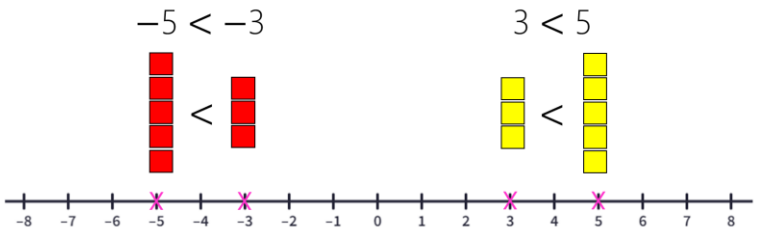
Year 9 – Maths – Unit A8 – Linear Inequalities

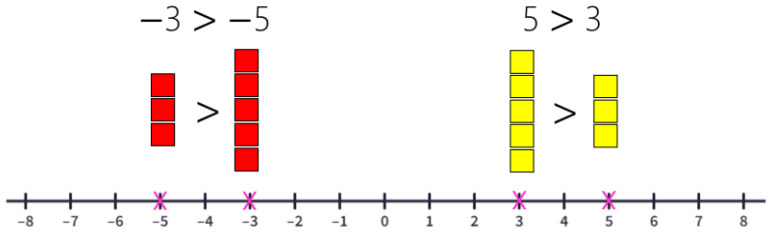
Inequality Symbols

$<$ - Less than $>$ Greater than
$\leq$ - Less than or equal to $\geq$ Greater than or equal to

$x < 2$ means x is less than 2
$x \leq 2$ means x is less than or equal to 2
$x > 2$ means x is more than 2
$x \geq 2$ means x is more than or equal to 2



Less than means to the left on the number line.
Sometimes this is smaller in magnitude, sometimes it is not.



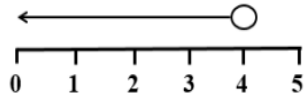
Greater than means to the right on the number line.
Sometimes this is bigger in magnitude, sometimes it is not.

Representing inequalities on a number line

Symbol	Circle	Direction of Arrow
<	Open ○	Left
>	Open ○	Right
≤	Closed ●	Left
≥	Closed ●	Right

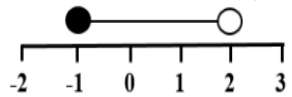
We use open and/or closed circles to represent inequalities on a number line. A closed circle means that the number **is** included in the represented group of values. An open circle means that the number **is not** included in the represented group of values.

The inequality $x < 4$, would be represented like this.



We call this a comparative inequality. That is because there are an infinite amount of numbers less than 4 that we are comparing to our inequality.

$-1 \leq x < 2$ would look like this.



This is a restrictive inequality as we have a lower and upper limit for the inequality. It is either equal to or greater than -1 and it is less than 2.

Keyword/Skill	Definition/Tips
Integer	Whole number including 0 and negative numbers. No fractions or decimals.
Inequality	Compares two values showing if one is less than, greater than or not equal.
Greater than	One number is BIGGER than another number.
Less than	One number is SMALLER than another number.
Equal to	Two things have the SAME value.
Equation	Says that two things are equal. (1 + 1 = 2).
Satisfy	A value that solves an equation. E.g. 2x + 1 = 9 x =4 so x=4 satisfies the equation.
Variable	A symbol for a number we don't know yet, usually a letter.
Coefficient	A number used to multiply a variable. E.g. 6y = 6 x y . y is the variable and 6 is the coefficient.
Inverse	Opposite of (i.e. x and ÷, + and -)
Comparative Inequality	An inequality with one limit. Comparing a number to other values.
Restrictive Inequality	An inequality with an upper and lower limit.

Year 9 – Maths– Unit A8 – Linear Inequalities

Solving Inequalities

We can solve inequalities the same way that we solve equations.

Example 1:

$2x + 1 \leq 9$
$(-1) \quad (-1)$

$2x \leq 8$
$(\div 2) \quad (\div 2)$

$x \leq 4$

You may get asked to represent your solution on a number line

Unlike equations, with inequalities we get a set of many solutions.

Example 2:

$4x + 3 > 12 + x$
$(-x) \quad (-x)$

$3x + 3 > 12$
$(-3) \quad (-3)$

$3x > 9$
$(\div 3) \quad (\div 3)$
$x > 3$

We can solve restrictive inequalities the same way but treat them as two separate inequalities.

Example:

$-3 \leq 2x + 3 < 10$

$-3 \leq 2x + 3$ and $2x + 3 < 10$
$(-3) \quad (-3)$ and $(-3) \quad (-3)$

$-6 \leq 2x$ and $2x < 7$
$(\div 2) \quad (\div 2)$ and $(\div 2) \quad (\div 2)$

$-3 \leq x$ and $x < 3.5$

$-3 \leq x < 3.5$

When we multiply or divide both sides of an inequality by a negative number, we must rotate the inequality sign to keep a true statement.

$x > 2$ Some values of x: 3, 4, 5, ...
$(\times -1)$ $(\times -1)$
$-x < -2$ Some values of $-x$: $-3, -4, -5$

Example:

$4 - 3x > 12$
$(-4) \quad (-4)$

$-3x > 9$
$(\div (-3)) \quad (\div (-3))$

$x < -3$

Whenever we solve an inequality (or an equation) we want to have the positive x not the negative x.

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Restrictive Inequality	An inequality with an upper and lower limit.

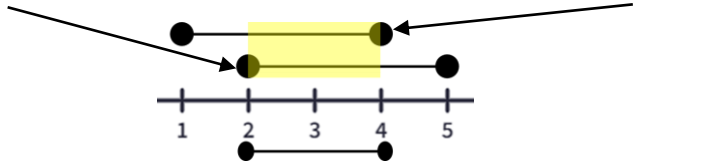
Year 9 – Maths– Unit A8 – Linear Inequalities

Solving Systems of Linear Inequalities

Sarah will be at the park from 2 p.m. until 5 p.m.

Joanna will be at the park between 1 p.m. and 4 p.m.

$2 \leq x \leq 5$ $\quad$ $1 \leq x \leq 4$



They will be at the park together from 2 p.m. until 4 p.m.

$2 \leq x \leq 4$

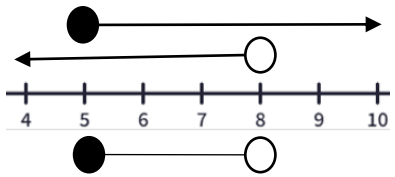
This is solving systems of linear inequalities. It is when we find values that satisfy two (or more) inequalities.
You may need to solve inequalities before you do this.

Example:
Find the set of numbers that satisfy both inequalities and draw a number line to represent it:

$2x \geq 10$
$x + 1 < 9$

$2x \geq 10$
$(\div 2) \quad (\div 2)$
$x \geq 5$

$x + 1 < 9$
$(-1) \quad (-1)$
$x < 8$

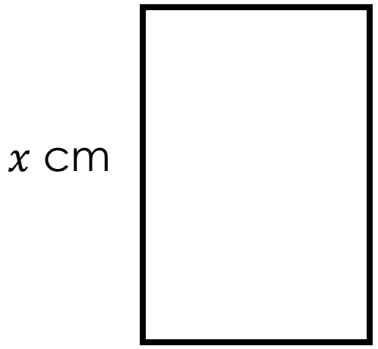


$5 \leq x < 8$

Inequalities in Context

We can form and solve an inequality when we see phrases like, "less than," "greater than," "at least," "at most" and more.

Example:
The width of a rectangle is 4cm and its height is unknown.
The area is at least 24cm^2
What can we say about its height?



$A \geq 24cm^2$

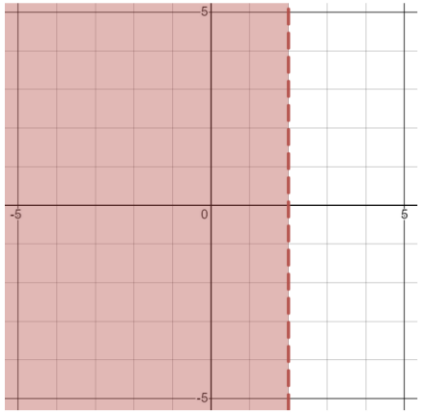
$4x \geq 24cm^2$
$(\div 4) \quad (\div 4)$
$x \geq 6cm$

The height is at least 6cm

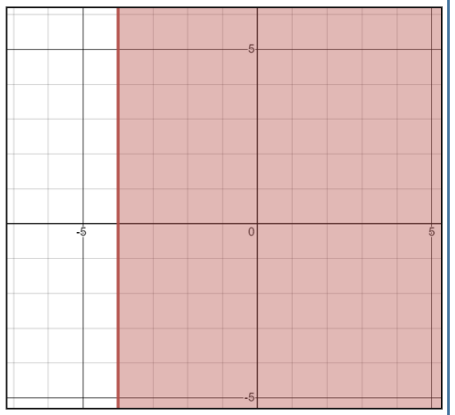
Representing Inequalities on a Graph

We can represent inequalities on a graph by shading the correct region. When the inequality uses ≤ or ≥ then we use a solid line. We use a dotted line when it involves < or >.
Shade the correct region based on the inequality.

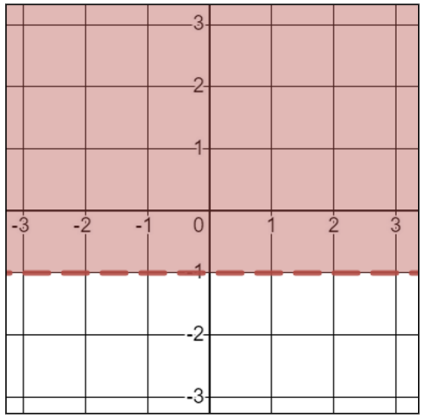
This is the region $x < 2$.



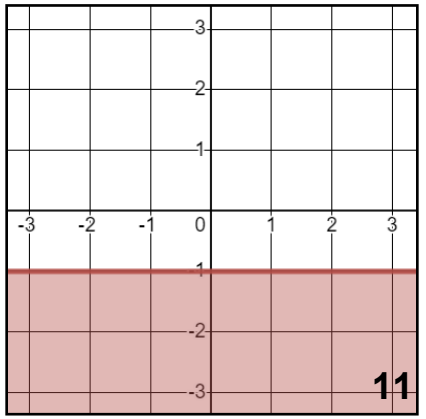
This is the region $x \geq -4$.



This is the region $y > -1$.



This is the region $y \leq -1$.



Year 9 – Maths – Unit NP12 – Standard Form

Index form makes it easier to write large and small powers of 10.

$10\,000 = 10^4$
$100\,000 = 10^5$
$1\,000\,000 = 10^6$
$0.1 = 10^{-1}$
$0.01 = 10^{-2}$
$0.001 = 10^{-3}$

$$3.04 \times 10^8 = 304000000$$

Standard form — Ordinary Number

Standard index form, known as standard form, makes it much easier to write large and small numbers.

A number is in standard form when it is written as $A \times 10^n$, where A is a number between 1 and 10 and n can be any integer. The power of 10, n, tells us how many place value columns to move up or down.

Keyword/Skill	Definition/Tips
Decimal Numbers/ Ordinary Numbers	The numbers we use in everyday life are decimal numbers, because they are based on 10 digits (0,1,2,3,4,5,6,7,8 and 9). 29000 is an example of an ordinary number.
Standard Form	A way of writing very large numbers or very small numbers using a number between 1 and 10, multiplied by a power of 10.
Power	The number of times a base number is multiplied by itself.
Index	A small number placed on the upper-right of a base number to inform how many times to multiply by itself.

Converting Numbers into Standard Form

Convert 3920000 into standard form.

We need a decimal point between the first and second digit.

$$3920000.$$

We need to move the digits 6 place value columns.
Therefore $3920000 = 3.92 \times 10^6$

Convert 0.00081 into standard form.

We need a decimal point between the first non-zero digit and the second digit after that.

$$0.00081$$

We need to move the digits 4 place value columns.
Therefore $0.00081 = 8.1 \times 10^{-4}$

Converting Standard Form into Ordinary Numbers

Convert 3×10^3 into an ordinary number.
We can see how many times we need to multiply by 10.
$3 \times 10^3 = 3 \times 10 \times 10 \times 10$
$3 \times 1000 = 3000$
$3 \times 10^3 = 3000$

We can see this using a place value grid too.

1,000	100	10	1	0.1	0.01	0.001	0.0001
Thousands	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths	Ten Thousandths
			3				
		3	0				
	3	0	0				
3	0	0	0				

Convert 2.4×10^{-3} into an ordinary number.
Multiplying by 10^{-1} is the same as dividing by 10
(You will have saw this in NP1).
$2.4 \times 10^{-3} = 2.4 \times 10^{-1} \times 10^{-1} \times 10^{-1}$
$2.4 \times 10^{-3} = 2.4 \div 10 \div 10 \div 10$
$2.4 \times 10^{-3} = 0.0024$

We can see this using a place value grid too.

1,000	100	10	1	0.1	0.01	0.001	0.0001
Thousands	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths	Ten Thousandths
			2	4			
			0	2	4		
			0	0	2	4	
			0	0	0	2	4

Year 9 – Maths – Unit NP12 – Standard Form

Adjusting into Standard Form

84×10^5 is a number not in standard form (84 is not between 1 and 10).

To convert into standard form, we can adjust each side of the number

We can first divide 84 by 10

$$84 \times 10^5$$

$\div 10$

$$8.4 \times 10^5$$

The number is now 10 times smaller, so we need to adjust the power of 10 to keep it balanced.

$$8.4 \times 10^5$$

$\times 10$

$$8.4 \times 10^6$$

Now the number is in standard form. $84 \times 10^5 = 8.4 \times 10^6$

Another example:

0.0801×10^9

We need to multiply 0.0801 by 100. $100 = 10^2$

$\times 10^2$

8.01×10^9

Now we need to divide by 10^2 to keep it balanced.

$\div 10^2$

8.01×10^7

Multiplying Standard Form

We can multiply numbers in standard form without converting them into ordinary form.
We use commutativity to reorder the multipliers.

Example:

$$(2 \times 10^4) \times (4 \times 10^5)$$

Remember to add the powers when multiplying two powers!

$$= 2 \times 4 \times 10^4 \times 10^5$$

$$= 8 \times 10^9$$

Make sure to check if your answer is in standard form (if the question asks for it).

Example:

$$3.1 \times 10^7 \times 5 \times 10^{-2}$$

$$= 3.1 \times 5 \times 10^7 \times 10^{-2}$$

$$= 15.5 \times 10^5$$

$\div 10$

$$= 1.55 \times 10^5$$

$\times 10$

$$1.55 \times 10^6$$

Dividing Standard Form

We can divide standard form in the same sort of method as multiplying.

$$8.8 \times 10^{14} \div 4 \times 10^6$$

We can write the division as a fraction.

$$= \frac{8.8 \times 10^{14}}{4 \times 10^6}$$

We can write this as a multiplication of two fractions.

$$= \frac{8.8}{4} \times \frac{10^{14}}{10^6}$$

Carry out the divisions and check it is standard form.

$$= 2.2 \times 10^8$$

Always make sure you convert back to standard form; most exam style questions will ask your answer to be in standard form with these questions.

$$3 \times 10^{11} \div 6 \times 10^3$$

$$= \frac{3 \times 10^{11}}{6 \times 10^3}$$

$$= \frac{3}{6} \times \frac{10^{11}}{10^3}$$

$$= 0.5 \times 10^8$$

$\times 10$ $\div 10$

$$= 5 \times 10^7$$

Year 9 – Maths – Unit NP12 – Standard Form

Adding & Subtracting Standard form

When we are adding or subtracting, we have seen they need to be in the same counting unit. There are two ways we can look at adding and subtracting standard form.

Method 1

You can convert standard form into ordinary numbers and then do the calculation.

Example:

$(4.8 \times 10^5) + (1.9 \times 10^4)$

Make sure you align the place value columns.

$$\begin{array}{r} 480000 \\ +\ 19000 \\ \hline 499000 \end{array}$$

We can convert our answer back intro standard form.

$$499000 = 4.99 \times 10^5$$

Example:

$1.09 \times 10^4 - 2.3 \times 10^2$

Make sure you align the place value columns.

$$\begin{array}{r} 10900 \\ -\ 230 \\ \hline 10670 \end{array}$$

We can convert our answer back into standard form.

$$10670 = 1.067 \times 10^4$$

Method 2

You can also add and subtract numbers in standard form by making the counting unit – the power of 10 – the same. The most efficient way to do this is to convert both into the larger power of 10.

Example:

$$(5 \times 10^5) + (2 \times 10^6)$$

$\div 10$ $\times 10$

$$= (0.5 \times 10^6) + (2 \times 10^6)$$

$$= (0.5 + 2) \times 10^6$$

$$= (2.5 \times 10^6)$$

Here our answer is in standard form, so we do not need to adjust it.

Example:

$$1 \times 10^{10} - 9 \times 10^9$$

$\div 10$ $\times 10$

$$1 \times 10^{10} - 0.9 \times 10^{10}$$

$$(1 - 0.9) \times 10^{10}$$

$$0.1 \times 10^{10}$$

$\times 10$ $\div 10$

$$1 \times 10^9$$

Problems with Standard Form

With mathematic questions, we need to be able to deduce which operation we are doing. Key words in the question tell us this information.

Example:

Spain has an area of $5.1 \times 10^5\ \text{km}^2$.
The area of Portugal is $9.2 \times 10^4\ km^2$.
What is the difference between the areas of the two countries?

The word that helps us here is **difference**. This means we need to subtract. You can use either method you have been shown here. I will use method 2.

$$5.1 \times 10^5 \ - \ 9.2 \times 10^4$$

$$= 5.1 \times 10^5 - 0.92 \times 10^5$$

$$= 4.18 \times 10^5$$

Look out for words which help us deduce the operation we need to do in worded questions.

SI Units

Unit name	Abbreviation	Measurement
metre	m	length
kilogram	kg	mass
second	s	time
ampere	A	electrical current
kelvin	K	temperature
mole	mol	number of particles
candela	cd	light intensity

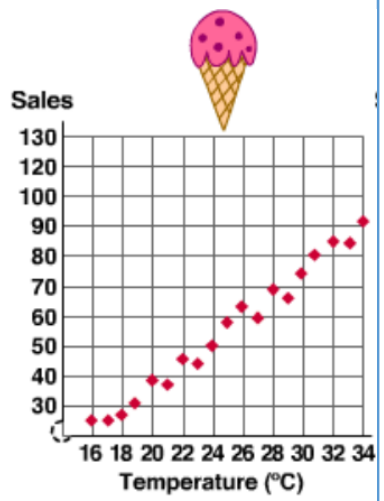
Year 9 – Maths – Unit SP2 – Bivariate Data & Time Series

Scatter Graph

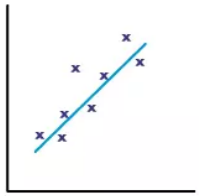
A scatter graph is a diagram where points are plotted to show the relationship (correlation) between two variables.

The value of one variable is shown along the x-axis and the values of the second variable is shown on the y-axis.

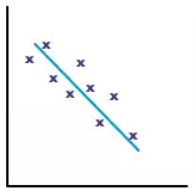
The scatter graph to the right shows the temperature compared with the number of ice-creams sold.



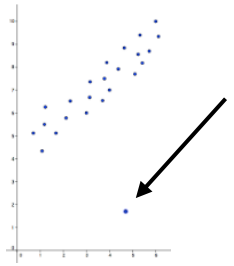
Positive Correlation



Negative Correlation



No Correlation



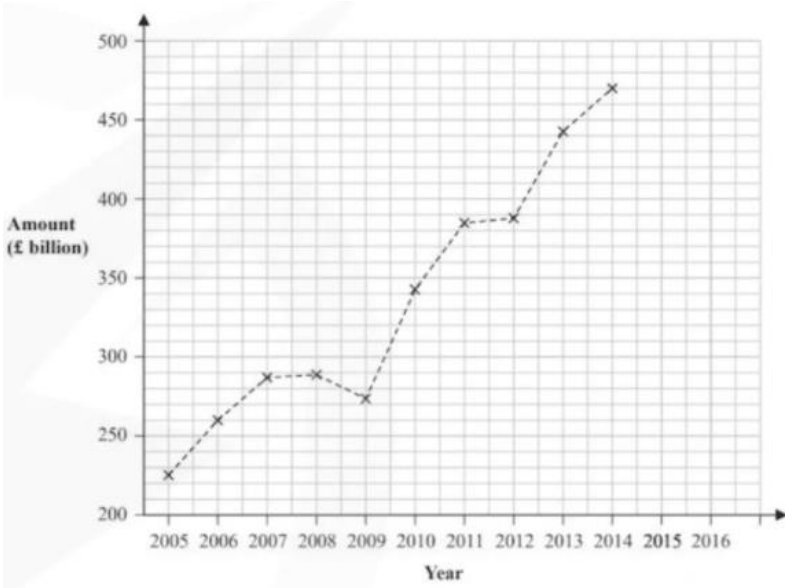
Outlier

Time – series graph

Time series graphs show data fluctuations over time and are used to predict trends, cycles and seasonality.

Example

The time series graph below shows the amount of money invested by a company between 2005 and 2014.
The general trend of the graph is an increase in the amount of money invested over time.



Keyword/Skill	Definition/tip
Scatter graph	A diagram with points plotted to show a relationship between two variables.
Variable	A quantity that can change or vary, taking on different values.
Line of best fit	A straight line that best represents the data on a scatter graph.
Correlation	A relationship between two or more things.
Positive correlation	Both variables increase or both variables decrease.
Negative correlation	One variable increases and the other decreases or vice versa.
No correlation	There is no relationship between the two variables.
Outlier	A value that lies outside most other values.
Time-Series	A line graph of repeated measurements taken over regular time intervals.
Trend	A direction in which something is changing.

Exams!

- When interpreting scatter graphs always refer to what the graph is showing. For example "it has positive correlation so the hotter it is the more ice creams that are sold"

Exams!

- Once all points have been plotted, ALWAYS draw a line of best fit. (Scatter graph)
- Use line of best fit to estimate answers.

Other topics/Units this could appear in:

- Coordinate Geometry
- A-Level Statistics - Correlation

Lines of Best Fit

The line of best fit is used to make estimates about the information in your scatter graph (this can be called interpolation).

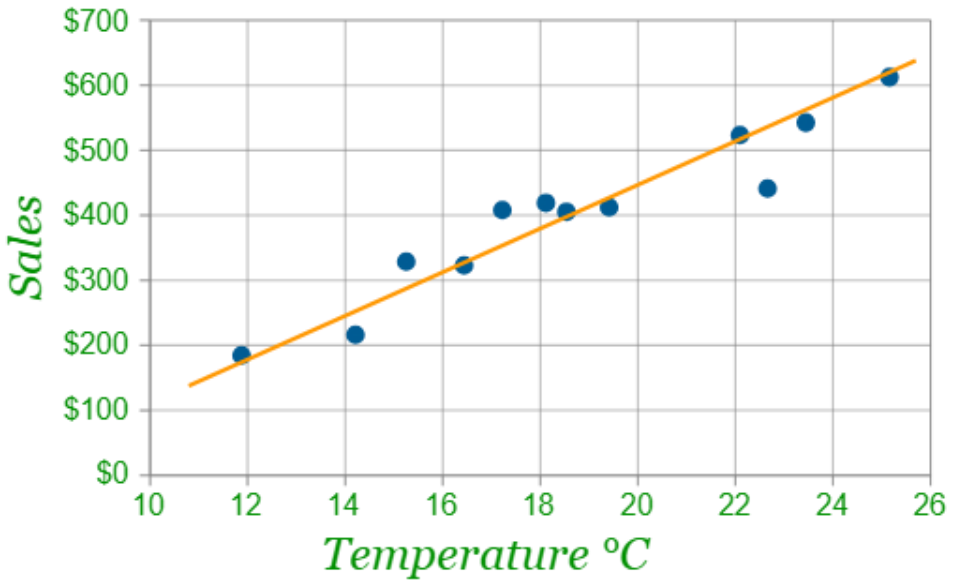
The line of best fit does not need to go through the origin (sometimes it may, but it doesn't have to!

There should approximately be the same number of points above and below the line. Sometimes it may not go through any points.

The line should extend across the whole graph.

It is only an estimate because the line is designed to be an average representation of the data.

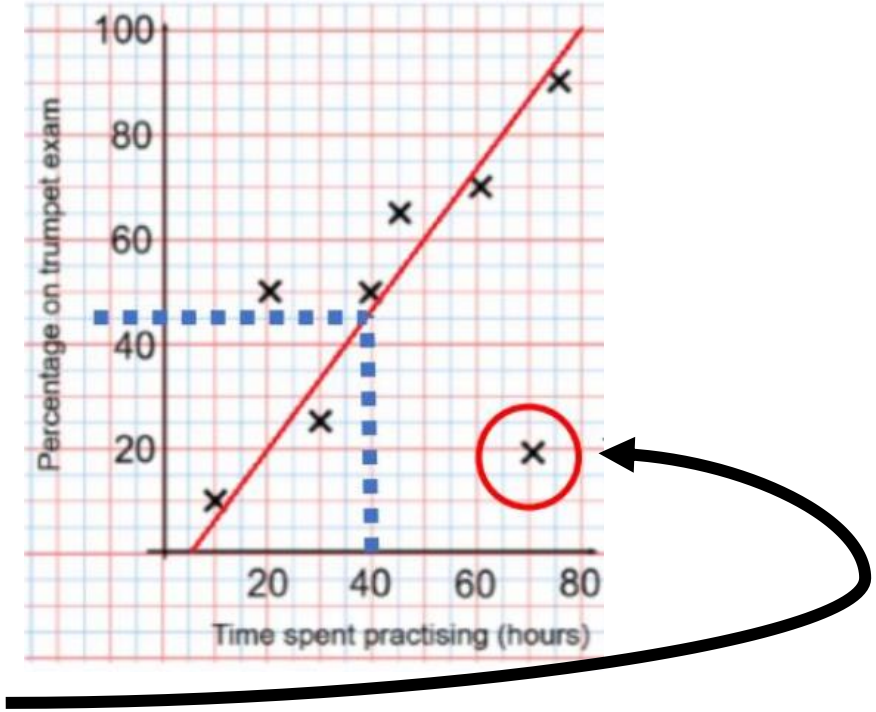
It is always a straight line.



Using a Line of Best Fit

Interpolation is using the line of best fit to estimate values inside our data point.

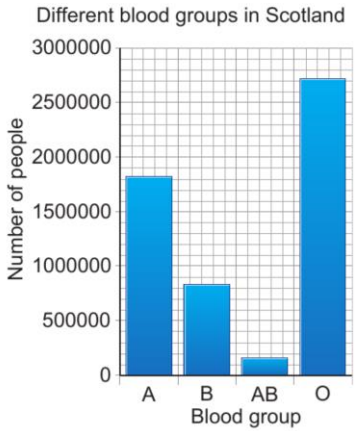
For example: 40 hours revising predicts a percentage of 45.



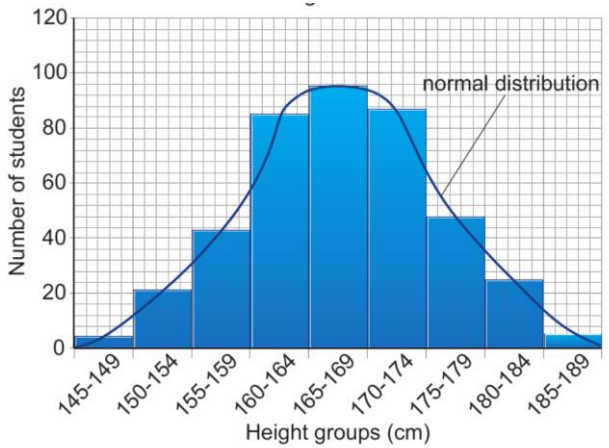
This point is an outlier. It is an outlier because it doesn't fit this model and stands apart from the data.

Extrapolation is where we use our line of best fit to predict information outside of our data. This is not always useful – in this example you cannot score more that 100%. So, revising for longer cannot be estimated.

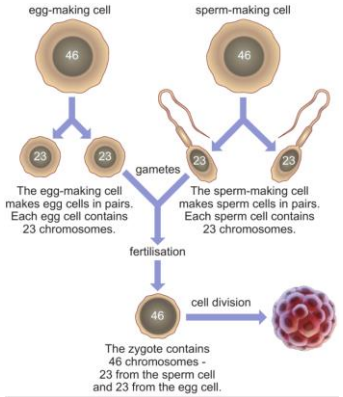
Year 9 – Science- B3a. Genetics and Evolution



D | Data about discontinuous variation can be plotted on a bar chart, with gaps between the bars.



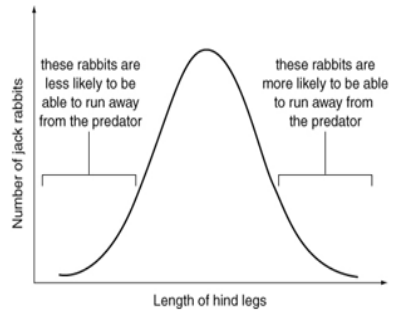
F | Data about continuous variation can be plotted on a bar chart without gaps between the bars.



E | A zygote contains the chromosomes carried in both the egg cell and the sperm cell.

Natural selection

All characteristics vary slightly amongst the members of a species. We can often draw a bell curve (**normal distribution**) to show variation in a characteristic.



If conditions in a habitat change, then variation in a characteristic may help some members of a species to survive better than others. Imagine a new predator moves into the area in which jack rabbits live. By chance, some jack rabbits will have slightly longer hind legs that allow them to run faster. These are the jack rabbits that are more likely to survive and reproduce. So, the next generation of jack rabbits will have slightly more rabbits with longer hind legs.

This process is known as **natural selection**. Charles Darwin and Alfred Russel Wallace both came up with the idea that it is natural selection happening over and over again, over a long period of time that causes **evolution**.

Endangerment and extinction

Changes in an **ecosystem** can cause species to become **endangered** or **extinct**. This is usually due to:

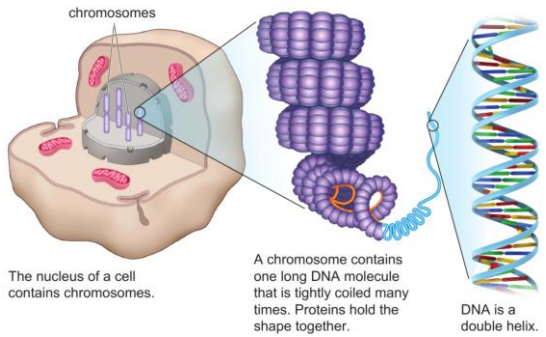
- changes in physical environmental factors
- competition from other organisms
- disease
- Human activities (e.g. hunting, clearing habitats, using poisons).

We can try to stop this happening and preserve **biodiversity** (the number of species) by:

- protecting areas and setting up nature reserves
- setting up breeding programmes in zoos
- banning the hunting of some animals or the collecting of wild plants
- Setting up **gene banks** (to store parts of organisms, such as seeds and gametes).

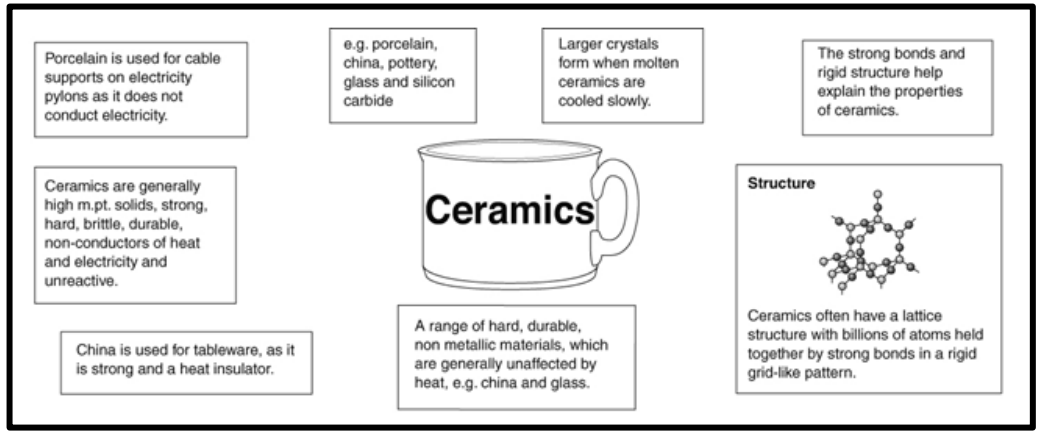
We should preserve biodiversity because:

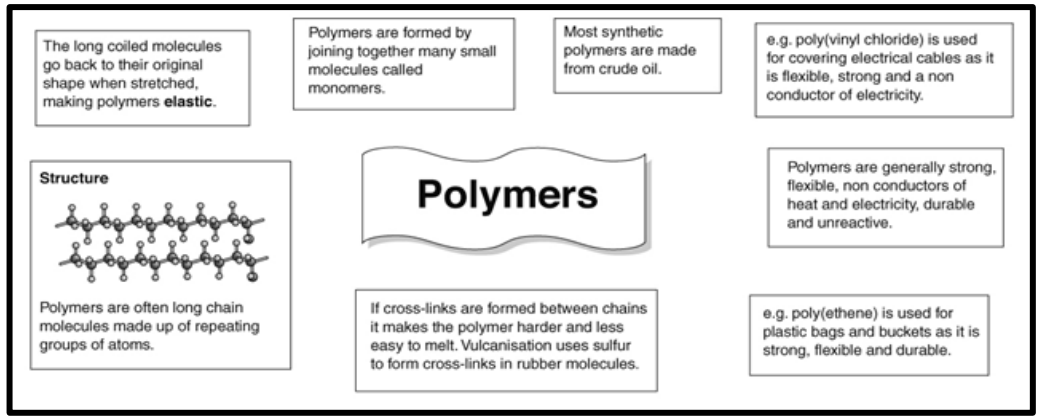
- organisms depend on one another (they are **interdependent**)
- we won't be able to make use of organisms if they become **extinct**
- More biodiverse areas recover better from natural disasters.

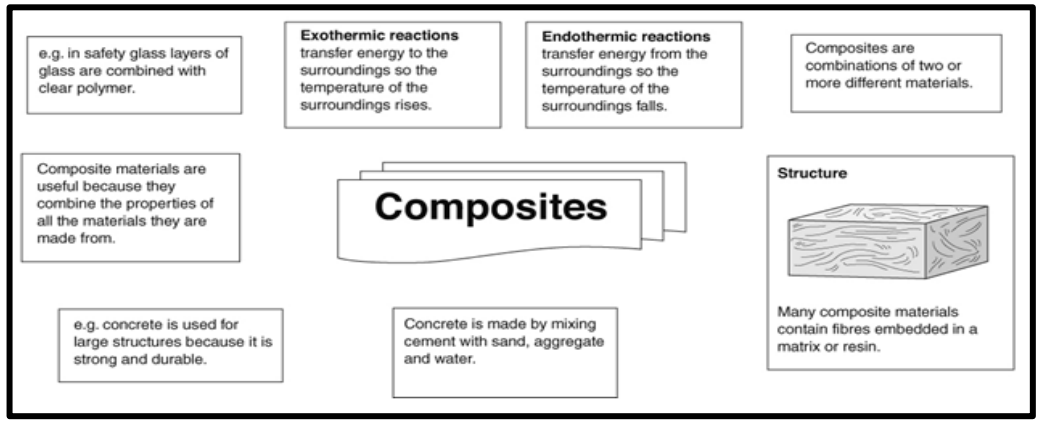


Keyword	Definition
genus	A group of similar organisms. The genus name is the first word in the scientific name for a species (the second word is the 'species name'). Different closely-related species belong to the same genus.
species	A group of organisms that can reproduce with each other to produce offspring that will also be able to reproduce.
variation	The differences between things.
continuous	Continuous data can take any value between two limits. Examples include length, mass, time.
discontinuous	Data values that can only have one of a set number of options are discontinuous. Examples include shoe sizes and blood groups.
environmental variation	Differences between organisms caused by environmental factors.
inherited variation	Differences between organisms that are passed on to offspring by their parents in reproduction.
normal distribution	If the value of a variable changes in a continuous way, it will often show a normal distribution. This means that the middle values of the data range are most common and values at the highest and lowest extremes are least common. This sort of data forms a bell shape on charts and graphs.
gamete	A cell used for sexual reproduction.
zygote	Another term for 'fertilised egg cell'.
chromosome	A structure found in the nuclei of cells. Each chromosome contains one enormously long DNA molecule.
DNA	A substance that contains genetic information. Short for deoxyribonucleic acid.
gene	Section of the long strand of DNA found in a chromosome, which contains instructions for a characteristic.
sex chromosome	Chromosome that determines the sex of an organism. In humans, males have one X sex chromosome and one Y sex chromosome, while females have two Xs.
endangered	When a type of organism is in danger of ceasing to exist.
extinct	An organism that no longer exists is extinct.
gene bank	Any facility that stores genetic material from different organisms (e.g. seeds, gametes, tissue samples).
evolution	A change in one or more characteristics of a population over a long period of time.
natural selection	A process in which an organism is more likely to survive and reproduce than other members of the species because it possesses a certain inherited variation.

Year 9 – Science – C3a. Materials for the Future





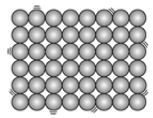
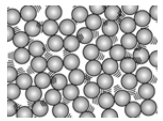
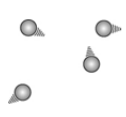


Keyword	Definition
brittle	Hard but easily broken or cracked
ceramic	A range of hard, durable, non-metallic materials, which are generally unaffected by heat. E.g. china and glass.
clay	Very fine particles of rock.
crystals	Pieces of a mineral with sharp edges. A solid with a regular shape and flat surfaces which reflect light
insulator	A material that does not allow something to pass through it (e.g. heat, electricity).
lattice structure	An arrangement of many atoms or other particles, which are bonded together in a fixed regular (grid-like) pattern.
crude oil	A fossil fuel formed from the decay of sea creatures over millions of years under the conditions of high heat and pressure and in the absence of air.
monomer	A small molecule that can join with other molecules like itself to form a polymer.
polymer	A substance made up very long molecules containing repeating groups of atoms. (Formed by joining monomer molecules together.)
polymerisation	The reaction that joins monomer molecules together to form a polymer.
vulcanisation	When rubber is heated with sulfur. The sulfur forms cross-links between the rubber molecules, changing the material's properties.
aggregate	Gravel, small stones or pieces of crushed rocks used in building.
composite material	A material made by combining two or more other materials. The separate materials do not react together.
cement	A substance that binds materials together. In building it refers to a mixture of clay and lime (calcium oxide).
concrete	Artificial stone made from a mixture sand, cement, water, and larger pieces of material such as gravel or small stones (aggregate).
fibre	A long thin continuous strand or thread.
thermal decomposition	Breaking down a compound into simpler substances using heat.
biodegradable	Capable of being decomposed (broken down) by organisms in the soil.
carbon capture technology	Technology that can be used to remove carbon dioxide from the waste gases produced by power stations and industrial processes preventing it from entering the atmosphere.
climate change	Changes that will happen to the weather as a result of global warming.
non-biodegradable	Not decomposed (broken down) by organisms in the soil.
impurity	Unwanted substance present in another substance.

Year 9 – Science- P3a. Fluids, Forces & Motion

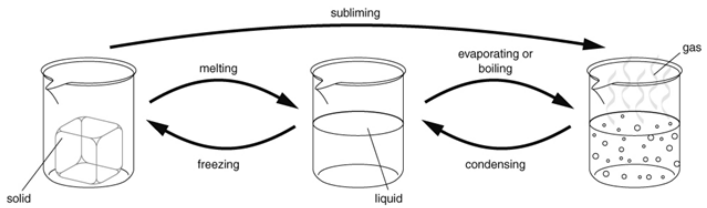
The particle model

The particle model can explain the properties of solids, liquids and gases.

	Solids	Liquids	Gases
Properties	• fixed volume • fixed shape	• fixed volume • take shape of container	• expand to fill container • take shape of container
Particle diagram			
Particles	• are close together • are held in fixed positions by strong forces	• are close together • are held by fairly strong forces • can move around	• are far apart • are held by very weak forces • can move around

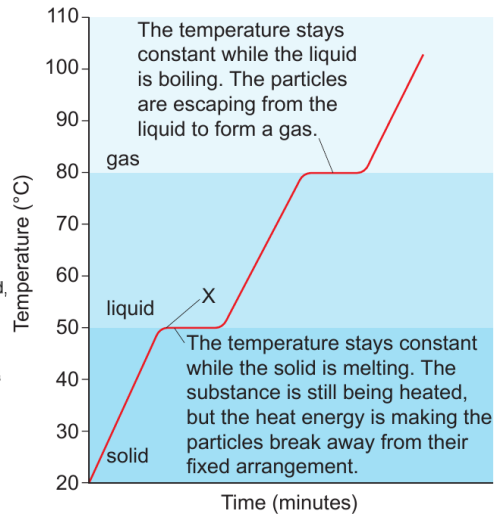
Changes of state

Substances can change state when they are heated or cooled. The three states of matter are solid, liquid and gas.



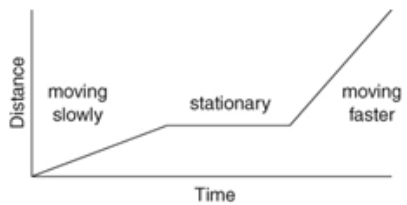
A liquid evaporates from its surface. When it is boiling, bubbles of gas form within the liquid.

How the temperature of a pure substance changes as it is heated



Distance–time graphs

A journey can be shown on a **distance–time graph**. This graph shows Kieron's journey to school. The steeper the line on the graph, the faster the object or person is moving.

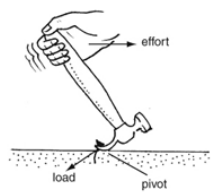


Levers and moments

Forces can be used to turn objects around **pivots**. A pivot is also known as a **fulcrum**.

Levers can be **force multipliers**, when they increase the force that is put in (the **effort**). They can be **distance multipliers** if they make the **load** move further than the effort. The amount the force or distance is multiplied depends on the distances between the load and the pivot, and the effort and the pivot.

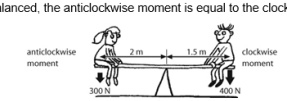
A turning force is called a **moment**. Moments are measured in **newton metres** (**N m**).



The hammer is acting as a force multiplier.

moment (in N m) = force (in N) × perpendicular distance from the pivot (m).

When an object is balanced, the anticlockwise moment is equal to the clockwise moment



For the seesaw:

the anticlockwise moment = 300 N × 2 m
= 600 N m

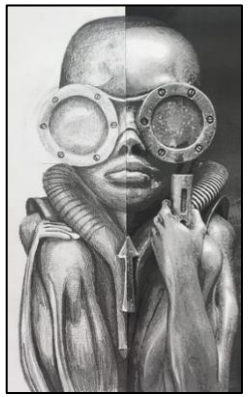
the clockwise moment = 400 N × 1.5 m
= 600 N m

The clockwise and anticlockwise moments are the same, so the seesaw is balanced, or **in equilibrium**.

Keyword	Definition
mass	The amount of matter that something is made from. Mass is measured in grams (g) and kilograms (kg). Your mass does not change if you go into space or to another planet.
particle theory	A theory used to explain the different properties and observations of solids, liquids and gases.
volume (matter)	The amount of room something takes up. Often measured in cubic centimetres (cm^3).
boiling point	The temperature at which a liquid boils.
freezing point	The temperature at which a liquid turns into a solid. It is the same temperature as the melting point of the substance.
melting point	The temperature at which a solid turns into a liquid.
sublime	When a solid turns into a gas, without becoming a liquid in between.
fluid	A gas or a liquid.
upthrust	A force that pushes things up in liquids and gases.
weight	The amount of force with which gravity pulls things. It is measured in newtons (N). Your weight would change if you went into space or to another planet.
distance-time graph	A graph that shows how far and how fast something travels during a journey. Steeper lines on the graph show faster speeds.
speed	How fast something is moving. Often measured in metres per second (m/s), miles per hour (mph) or kilometres per hour (km/h).
distance multiplier	A lever or other machine where the load moves further than the effort.
effort	The force put on something, especially a lever or other simple machine.
force multiplier	A lever or other machine where the load is bigger than the effort.
lever	A simple machine that consists of a long bar and a pivot. It can increase the size of a force or increase the distance the force moves.
load	The weight or force on something. For a machine, the load is the weight that is being moved.
moment	The turning effect of a force. It is calculated by multiplying the force by the perpendicular distance of the force from the pivot.
newton metre (N m)	The unit for the moment of a force.
pivot	A point about which something turns. Another name for fulcrum.
machine	A device, such as a lever or ramp, that makes it easier to move something by multiplying a force or a distance.
work	The energy transferred when a force moves an object. It is calculated using the size of the force and the distance moved by the force. The unit for work is the joule (J).

YEAR 9 ART BIOMECHANICAL KNOWLEDGE ORGANISER

Throughout our Autumn project in Year 9 we will be influenced by literacy, inspiring your imagination and ideas. In our Biomechanical project we will gain deeper independence on compositional layouts and advanced observational record skills.



When adding tone to your observational drawing follow the below steps…

1 Look at your model carefully and ask the following questions: **'Where are the dark areas?' 'Where are the light areas?'**
2 Think about your **stroke size, direction** and **hold** on the pencil.
3 Aim to add at least **5 levels** of tone
4 Blend your tones to create a **gradation** (do not smudge!)
5 Look every **3 seconds** at your model to pick up the right tones

Artist Spotlight: H. R. Giger

H. R. Giger is a recognized as one of the world's most famous artists of Fantastic Realism. Born in 1940 in Switzerland, Giger studies Architecture and industrial design. Mostly famous for his surrealistic biomechanical dreamscapes both in fine art and film. Giger's work is showcased in the film Alien, receiving the Visual Effects Oscar.

Key word definitions

Line 1 - Realism (artwork that looks accurately real)
Line 3 – Architecture (designing and building structures)
Line 3 – Industrial design (design of a manufactured product)
Line 6 – Surrealistic (dream like)
Line 7 – Biomechanical (mechanics of a living body)
Line 11 – Visual effects (computer generated art)
Line 14 – Extra-terrestrial (a being from outer space)

ARTIST RESEARCH

Research into the artist
- Artist bio (one sentence)
- Artist techniques, skills and processes (one sentence)
- What is the title of the work? (if applicable)

Describe the Art
- What do you see in the work? What is happening?
- What is the context? (portrait, landscape, abstract)
- What words describe the work? (contemporary, delicate, bold)
- Can you link the work to other art pieces/movements?

Analyse the Art
- What is the medium of work? (pencil, paint, sculpture, digital)
- What visual elements/principles have been used?
  - Line - What mark–making techniques has the artist used?
  - Shape/Pattern/Form – What kind of shapes, patterns or forms can you find?
  - Tone /Colour - What colours or shading techniques does the artist use? How?
  - Texture – What kind of textures can you see/feel?
- What message does the work communicate? What do you think the work is about?

Evaluate the Art
- What do you think is good about the work? Why is it not good?
- How does the work make you feel? Why?
- Will you use the techniques or processes in your own work?
- How will this piece influence your future artwork?

Keyword	Definition
Analyse	Examine in detail.
Tone	Means the lightness or darkness of something. This can be a shade or how dark or light a colour appears.
Composition	The placement or arrangement of visual elements, thinking about space.
Directional shading	Shading that follows the contours of the form to create a 3D effect.
Gradient Blending	Is a visual technique of gradually transitioning from one shade to another, or one texture to another.
Anatomy	Bodily structure of humans or animals
Investigate	Test the qualities of materials, techniques or processes through practical work.
Skilful	Apply materials and techniques with a high level of understanding, ability and control.
Refine	Improve work taking into account feedback and aims.
Formal Elements	Key words that can be applied and used to describe 2D and 3D art and design.
Obscure	Not clearly expressed or easily understood.
Collage	Art made by sticking different materials or images together.
Application	To apply something or put something into action.

Year 9 Computing – Augmented Reality

What is it?

Augmented reality - is a new technology where companies have developed software on a higher scale than ever for mobile phones and proprietary devices

With the latest developments in augmented reality the technology is used in shopping apps such as Argos, IKEA or Nike allowing customers to see products before they purchase them.

What does **reality** mean? Natural, Real

Examples of uses –

- Navigation systems use AR to superimpose routes on a live view of a road
- Military fighter pilots see an AR projection of their height, speed and other data on their helmet
- Neurosurgeons use AR projection of a 3D brain to assist them in performing surgery

AR = the overlay of computer-generated inputs onto a real-world environment

What do we mean by real world?
Our environment
Our planet

e ?

Technology:

- Overlay of computer generated inputs
  - Text
  - Graphics
  - Photographs
  - Audio
  - video

AR vs VR

Almost anyone with a smart phone can access AR. Augmented reality merely adds to a user's real-life experience. VR (Virtual reality) produces a computer-generated simulation of an alternate world. AR uses real world settings while VR is completely virtual.

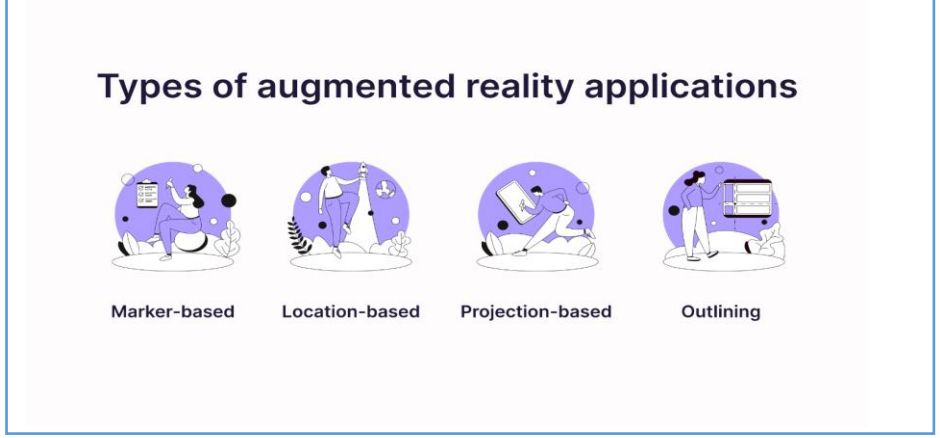
Keywords	Definition
Augment	To enhance or alter and make more effective
Aesthetics	principles concerned with the nature and appreciation of beauty
Prototype	a first or initial version of a product
Interactive	allowing a two-way flow of information between a computer and a computer-user; responding to a user's input.
Real-world	The real environment as apposed to the simulated or imaginary world
Computer generated	a sound or visual that has been created in whole or in part with the aid of computer software or hardware
Virtual reality	the computer-generated simulation of a 3D image or environment that can be interacted with in a seemingly real or physical way by a person using device

Year 9 Computing – Augmented Reality

AR Headset

Top Industries adopting Augmented Reality in 2022

- Manufacturing
- Mining
- Maritime
- Education
- Healthcare
- Travel sector



User interaction for AR headsets

- Types of interaction:
  - gaze
  - hand gestures.
- Gaze:
  - gaze-based navigation
  - tracks where the user is looking
  - targets items in the environment.
- Hand gestures:
  - hand gestures used to interact with targeted item.

Advantages and disadvantages of AR

Advantages	Disadvantages
The best of both worlds: combining the digital world with the real world.	Privacy and security concerns: collecting private and personal information about the users.
Virtual communication: improves digital communication by making it more immersive with virtual information.	Intrusiveness issues: the software records the world around the user which raises questions regarding taking photos of the public.
Supports business activities: retailers can use augmented reality to display their products.	Promotes dangerous behaviour: by focusing on augmented reality information accidents could happen in the real world.
Extends smart devices so they play an additional role in users' lives.	It can be expensive to install and maintain augmented reality software and hardware.

Example – AR can be used to help shoppers shop for a product without going to a shop

- More convenient, easy to access with a device
- Easy to access around the world, quick

Year 9 Computing – Augmented Reality

What does augment mean?
- enhance
- alter
- make more effective.

What does real-world environment mean?
- our surroundings
- our planet
- our world.

What does reality mean?
- natural
- real.

The sectors where AR can be used in
- architecture
- education
- entertainment
- retail
- lifestyle.

The uses of AR:
- training
- virtual tours
- marketing
- visualisation of designs, interiors, and concepts

What is AR and what is its purpose?

- Technology:
  - overlay of computer-generated inputs:
    - text
    - graphics
    - photographs
    - audio
    - video.

Forms of reality

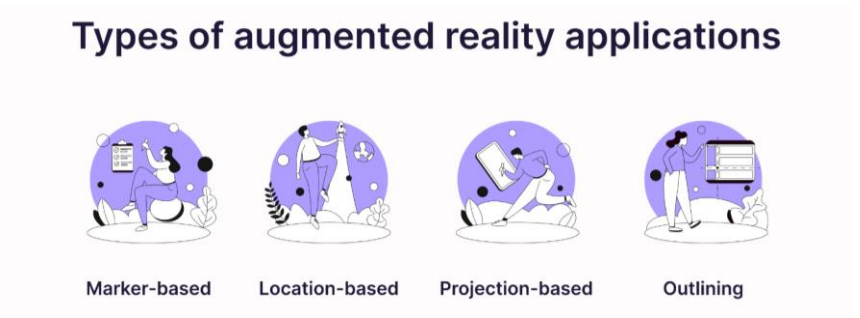
- Augmented reality:
  - the overlaying of computer-generated inputs onto a real-world environment.
- Mixed reality:
  - the interaction of computer-generated inputs with physical objects in the real-world environment.
- Extended reality:
  - a term used for all forms of real and virtual environments.
- Virtual reality:
  - a computer-generated simulated environment.

Year 9 Computing – Augmented Reality

Types of AR

Types of AR:

- object recognition/marker-based
- location-based/markerless
- superimposed (sometimes referred to as superimposition).



Consideration when Designing Types of AR

- Questions to ask:
  - What content do we want to display on the live camera view?
  - Where should we place the content within the user's view?
- Answers dependent on:
  - AR software application being used – each require different user interaction.

Markerless

- More versatile than marker-based.
- More adaptable to a wider variety of functions/activities.
- The user decides where to place virtual object.
- It relies on device's hardware to gather information.
- An accelerometer detects the orientation of a smart device.
- A digital compass:
  - is a sensor that finds direction
  - uses Earth's magnetic fields
  - always finds North.
- GPS (global positioning system) uses satellites to establish the location of an object.

Object recognition/marker-based

This is the use of specifically designed markers to trigger augmented experience.

- Markers:
  - visual prompts
  - trigger virtual object/information
  - created using distinct patterns
  - act as anchors.
- Triggers:
  - activate AR experience.
- Anchors:
  - objects recognised by AR software.

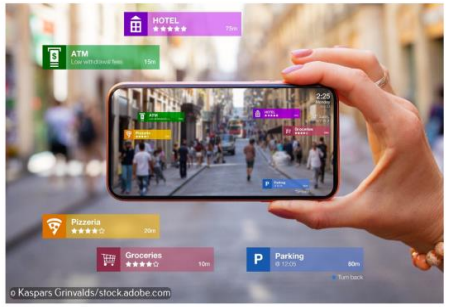
Superimposed

- Uses object recognition.
- Replaces original image partially or fully.
- Used a lot in healthcare sector e.g. to superimpose x-ray onto patient's body.

Markerless

Location-based

- Digital content tied to specific location.
- Often used for navigation.



Year 9 Computing – Augmented Reality

AR interaction

Types of user interaction/layers

- static
- interactive.

Types of user interaction

- User interaction:
  - reflects the real user experience after an interaction with the user interface
  - experiences are generated by the user.
- Design consideration:
  - think about how the user is going to interact with the AR app
  - depends on the devices they are going to use.

Layers

- Layers contain information and/or objects laid on top the real world viewed by the user.
- Static:
  - digital content such as text, 3D models and visual cues
  - appearance does not change during user interaction
  - no display of continuous movement.
- Interactive:
  - digital content such as animation and videos
  - changes appearance during user interaction
  - changes continuously with time
  - displays flow of continuous movement.

User interaction for AR headsets

- Types of interaction:
  - gaze
  - hand gestures.
- Gaze:
  - gaze-based navigation
  - tracks where the user is looking
  - targets items in the environment.
- Hand gestures:
  - hand gestures used to interact with targeted item.

User interaction for AR headsets

- Important considerations:
  - user's hands must remain in the viewing area of the headset
  - will not function correctly if user's hands out of view of headset
  - user's should be notified if hands reach the boundaries of headset view
  - design must use hand gestures accepted by the headset
  - keep interactions simple.

AR headset

Video © Gorodenkoff/Shutterstock

User interaction for mobile devices

- Type of interaction:
  - hand gestures by touching the screen
  - interaction occurs in 3D (real-world) space.
- Hand gestures are based on touching the screen:
  - swipe
  - pinch
  - tap
  - rotate.
- Important considerations:
  - interactions should be kept simple
  - user should receive feedback when placing or interacting with an object.

Voice interaction

- Type of interaction:
  - voice control.
- Voice control considerations:
  - Commands should be kept simple and concise.
  - Commands must be able to be stopped, reversed, undone.
  - Do not use similar sounding commands.
  - Do not use commands that are pre-set system commands.

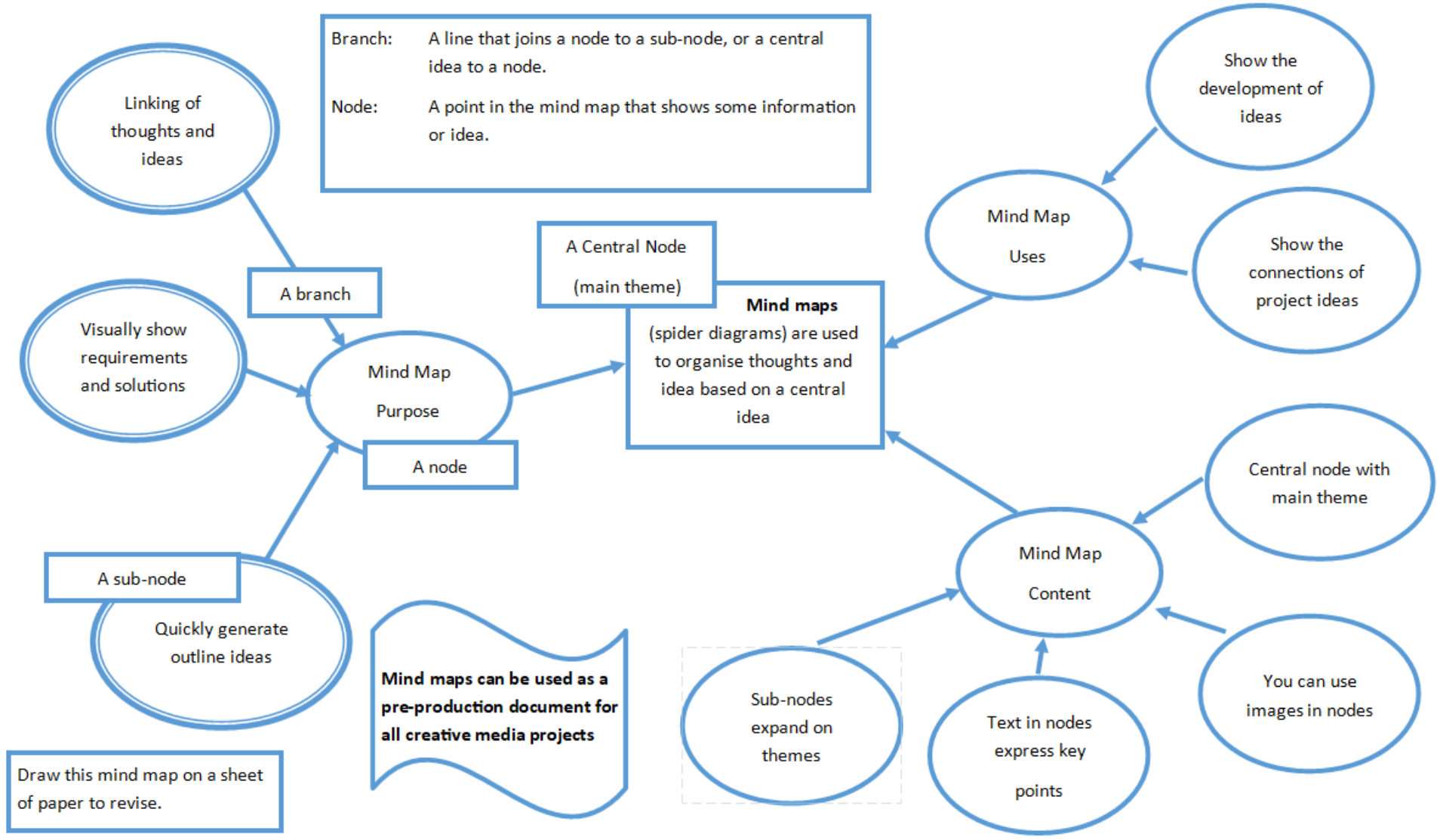
Voice interaction

- Additional important considerations:
  - User should receive feedback as with any other form of interaction.
  - Consider that users can have different dialects and access.
  - Test with different people.
  - Give the user prompts to use a command.

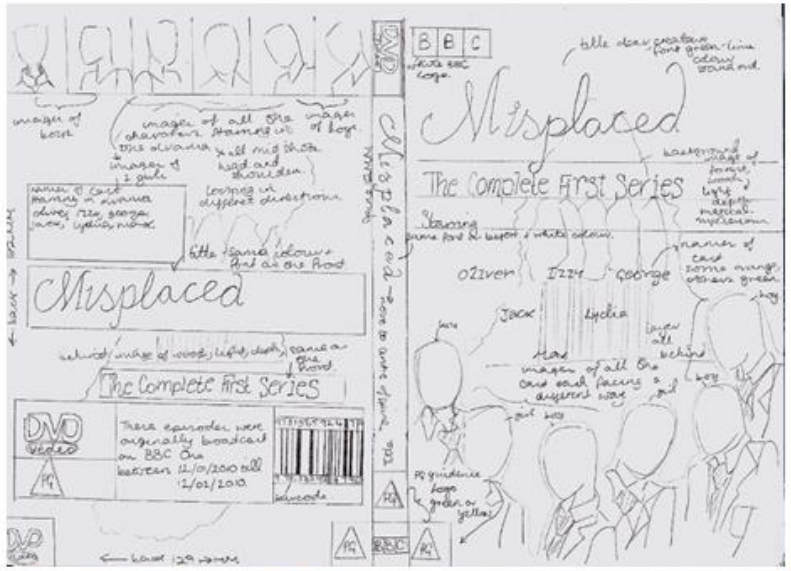
Year 9 Computing – Augmented Reality

Mind Maps

You must be able to understand the purpose and use the content of different pre-production documents



You must be able to understand the purpose and use the content of different pre-production documents



Visualisation Diagrams

Visualisation diagrams are a rough drawing or sketch of what the final static image product is intended to look like. They will have annotations to describe the design ideas. Typically, a visualisation diagram is hand drawn, but it does not need any artistic skills to communicate ideas.

It is intended to demonstrate the layout and content of the product that is being illustrated

You might produce several drafts to demonstrate ideas to your client. Your client might choose the draft they like the most. There must be sufficient information in the visualisation diagram for the client to make a decision about their preferred design.

Visualisation diagrams are valid for static designs, that is an image that does not move. It is, therefore, relevant for designs such as a magazine cover, a DVD cover, or an image for a website. It would not be suitable for a video or an animation.

Look closely at the detail in the example visualisation diagram. Compare the concepts in the visualisation diagram and compare them to the final product that was produced. Do you notice the similarities and the differences.

Notice how the visualisation diagram was not modified as ideas developed in the pro-

Purpose:

- ⇒ Plan the layout of a static or still image in a visual manner
- ⇒ To show how a finished item might look like

Uses :

- ⇒ CD/DVD cover design
- ⇒ Poster, such as for a film, event, leaflet or advertisement
- ⇒ A single game scene of display of a single scene
- ⇒ Comic book page layout
- ⇒ Web page layout
- ⇒ Magazine front cover

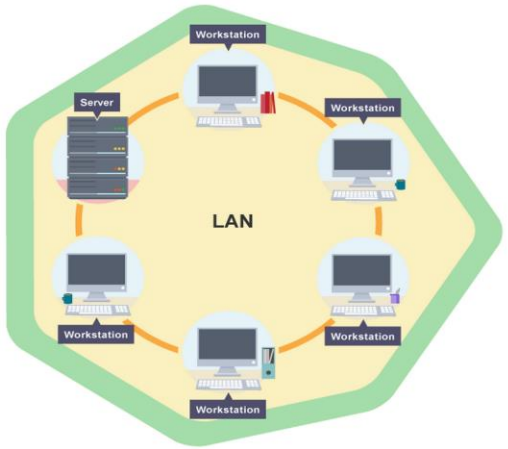
Content:

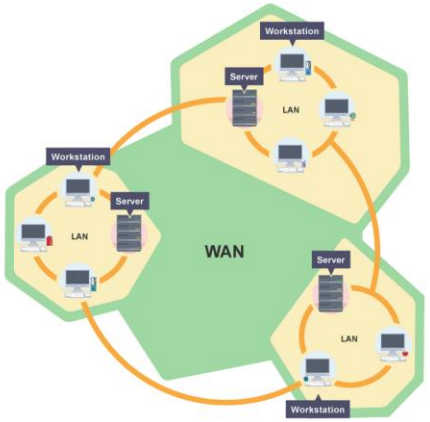
- ⇒ Multiple images, layout and positions of items.
- ⇒ Colours and colour schemes
- ⇒ Position and styles of text
- ⇒ Fonts, font colours and size
- ⇒ Notes as annotations which provide

Year 9 – Computing – Networking

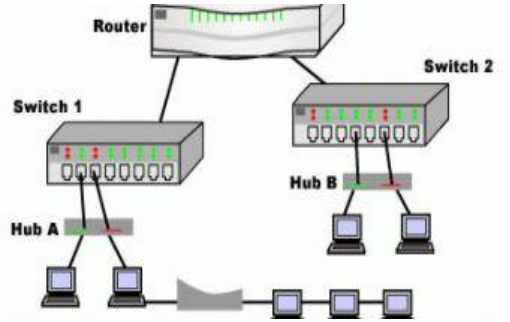
Network
A collection of computers connected together.
LAN
Network over a local geographical area (eg School)
LAN has its own infrastructure of cabling and network hardware due to distance and practicalities
WAN
Network over a large geographical area (eg WWW)
WAN uses external hardware and external infrastructure e.g. use of satellite, phone lines or The Internet.
Advantages
- Share Internet Connection
- Share Peripherals
- Share files
- Sends Emails

Dis-Advantages
- Risks of Viruses and Hacking
- Expensive Hardware
- Specialist staff often needed (eg Network Manager)





Possible Careers
- Network Manager
- IT technician
- Security Engineer
- Teaching

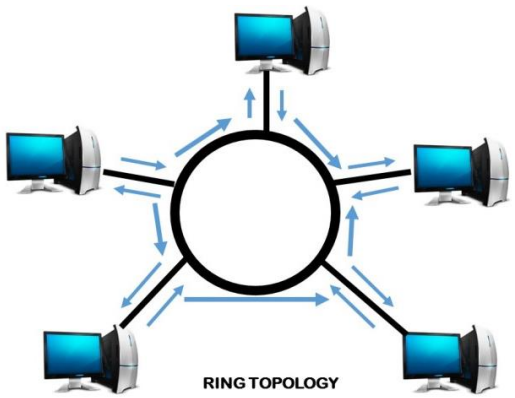


Hardware

Hub
used to connect multiple devices to the network. Now obsolete (use Switch)
Switch
connecting computers and other network capable devices together to form a network.
NIC (Network Interface Card/controller)
Internal hardware allows a device to be connected to a network. Use for wired and wireless networks
Transmission Media – What is used to transmit data across a network –.
Wired - Ethernet cable (CAT 5e and CAT 6 twisted pair). A networking standard. Coaxial cable , an older standard or Fibre optic very fast but more expensive.
Wireless
Radio and microwaves to transmit data e.g. Wi-Fi is the standard for for networks – uses two radio frequencies 2.4ghz and 5 ghz
Wireless Access Points
for wireless networks – allows devices to connect to a network wirelessly
Server
A computer that holds data to be shared with other computers. A web server stores and shares websites. Servers require server software.
Router
Connects Server to Internet and transmits data (as packets) between networks

Year 9 – Computing – Networking

Topology
The layout of a network

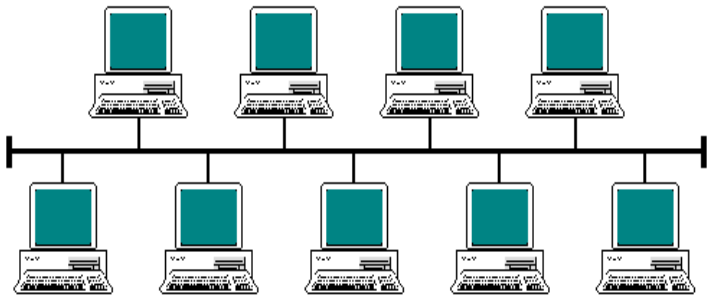


In a ring network each device is connected to two other devices, this forms a ring for the signals to travel around.

Each packet of data on the network travels in one direction and each device receives each packet in turn until the destination device receives it.

Bus topology uses one main cable to which all nodes are directly **connected**.

The main cable acts as a backbone for the network.



Remember: these can be good or not so good factors

Factors that affect the performance of Networks

Bandwidth – the amount of data that can be transferred over a given time. **Greater bandwidth = better network can perform.**

If more people are using bandwidth on a network this can cause congestion and slow the network down.
How to solve: You could limit the bandwidth available to different users on the network address

Wired Connections – generally faster and more reliable than wireless

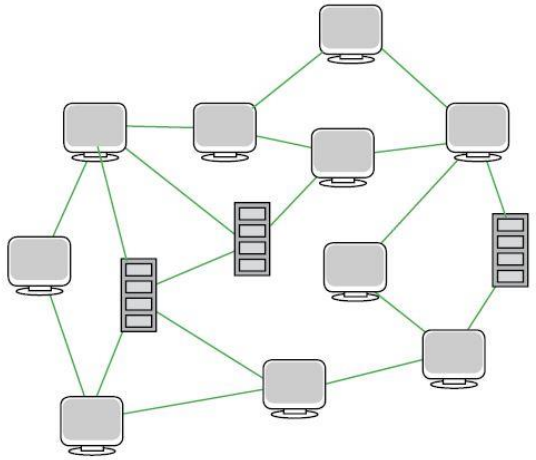
Fibre optic cables = better performance than copper cables

Wireless performances depends of signal quality – Physical objects such as thick walls and interference from other devices can affect the network

Choice of hardware and network topology can also have an affect on the performance

Year 9 – Computing – Networking

Topology
The layout of a network

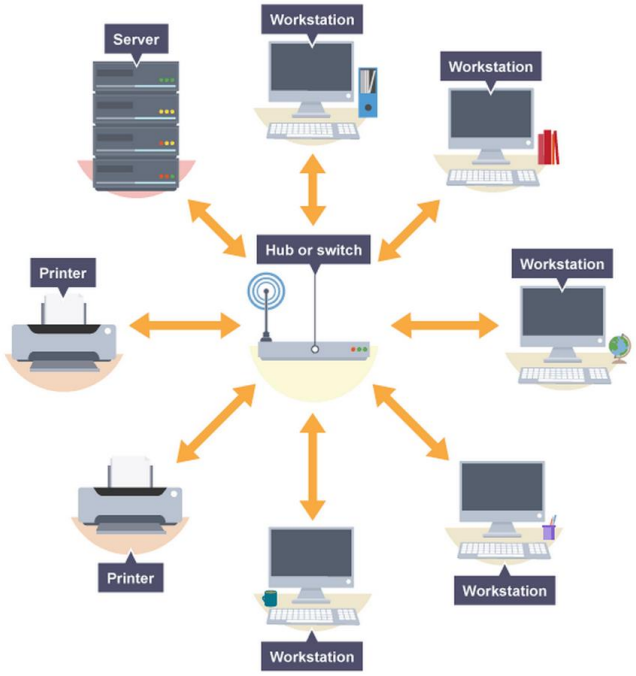


Mesh

Relatively new topology

Decentralised - Where some or all of the workstations or other devices are connected directly to each of other. Most are usually connected to the node that they exchange the most data with.

Advantage
No single point where it can fail
If one device fails then the data is sent along a different route to its target
Disadvantage
Very expensive – a lot of wire is needed to connect devices together BUT can overcome this by using wireless technology
down.



Star

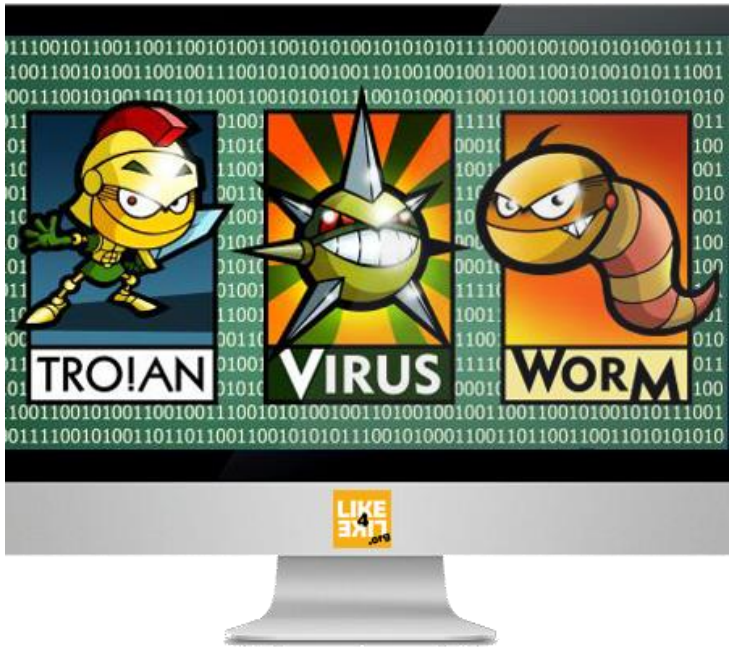
Each device on the network has its own cable that connects to a **switch** or server. It is centralised.
Central switch or server allows many devices to be connected to it

Advantage
very reliable – if one cable or device fails, then all the others will continue to work
high performing as no data collisions can occur
Simple to add more devices to network
Better performance – all data sent to central device so all devices can transmit data at once
Disadvantage
expensive to install as this type of network uses the most cable, and network cable is expensive
if a hub or switch fails, all the devices connected to it will have no network connection

Year 9 – Computing – Networking Threats

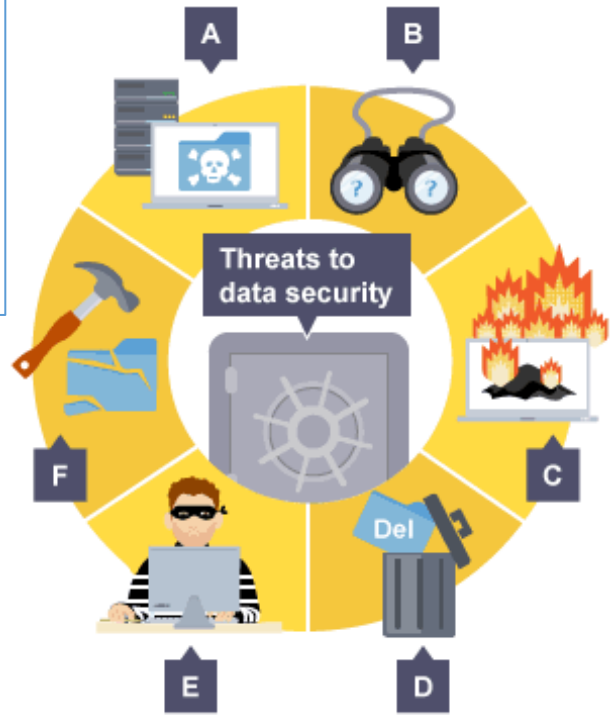
- **People as the weak point in secure systems**

- **Social engineering** - is a way of gaining sensitive info or illegal access to networks by influencing people, usually employees of large companies
- **Phishing** – another type of social engineering – criminals send emails or texts to people pretending to be well known business. They request uses update their details , when users do this the criminals use the details on the users account e.g. bank details



Possible Careers

- White hacker
- MI5 (GCHQ)
- Security Engineer
- Teaching



Key

A	Corrupted	D	Deleted
B	Lost	E	Hacked
C	Destroyed	F	Damaged

Network security threats

Malware – Malicious software installed on someone's device without their knowledge or consent.

Typical actions of malware:

Delete/modify files
Scareware – tells user PC is infected with lots of viruses – to pay for problem to be fixed
Locking files – ransomware – pay to get files back
Spyware – secretly monitors actions and sends info to hacker
Rootkits - alter permissions given hackers admin level access to devices
Backdoor – holes in someone's security leaving them open to future attacks

Malware can access your device in different ways

Viruses – in attachments, or .exe files activated when opened
Worms – self replicating viruses - spread quickly
Trojans – malware disguised as legitimate software users install them not realizing they have hidden purpose

Year 9 DT – Knowledge organiser: Passive Amplifier

keyword	definition
amplifier	a device used for increasing the amount of sound
disassemble	take something to pieces
measure	to find the size, amount, dimensions of something
assemble	to fit together in a particular place
construct	build or make something
CAD (computer aided design)	a design produced on computer software
CAM (computer aided manufacture)	a method of manufacturing using a computer operated machine

Passive amplifier

A passive amplifier, or speaker, is essentially a speaker that requires no electricity. It uses the walls of the amplifier to reflect the sound, making it sound louder.

What is the difference between a passive and active amplifier?

An amplifier is a device that increases the amount of sound.

Passive amps do not need any electricity and work because they focus sound pressure levels in sound or audio, like a trumpet.

Active amps require power and work to increase the amplitude of electrical audio signals

Exploded diagrams

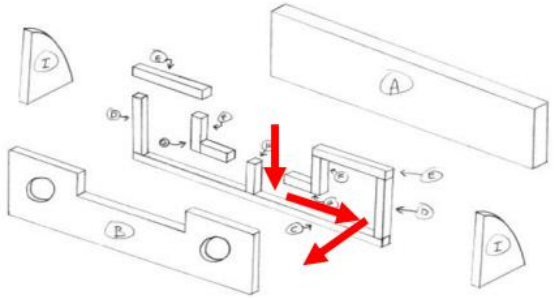
Exploded diagrams show how a product can be assembled and how the separate parts fit together, with dotted lines showing where the parts slide into place. The diagrams also show components that would usually be hidden in a solid drawing.

In our DT Workshop we use the following PPE:

- Apron
- Goggles
- Ear Defenders
- Heat Proof Gloves

How it works:

The sound flows down through the phone speaker around the channel and then out through the holes. Every passive amplifier needs this channel for the sound to flow through and out to work effectively.



Year 9 – Food Technology

There are **seven** major classes of nutrients: carbohydrates, fats, dietary fibre, minerals, proteins, vitamins, and water. These nutrient classes can be categorised a either **macronutrients** (needed in relatively large amounts) or **micronutrients** (needed in smaller quantities).

Macronutrients:

Carbohydrates provides the body with **energy**. There are two main types, complex and simple. **Complex carbohydrates** give **long lasting energy**. These are found in foods such as bread, pasta and cereals. **Simple carbohydrates** make blood sugar levels go up very quickly. This provides a **short burst** of **energy.** These are found in 'sugary; foods such as cakes, jams and sweets.

Protein is needed for **growth** and to **repair** cells. Protein is made up of amino acids. Proteins that are high in essential amino acids are called **high biological value (HBV)** proteins. These are found in milk, cheese, fish, eggs, meat and soya beans. Proteins that are low in amino acids are called **low biological value (LBV)** proteins. These are found in nuts, cereals and pulses.

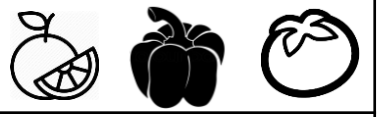
Fats are used by the body for **energy.** Fat also forms an insulating layer under your skin to keep us **warm** and **protect our organs,** such as our kidneys. There are two main types of fat, **saturated** and **unsaturated.** Foods such as meat, cheese and butter are high in saturated fats. Foods such as seeds, fish and vegetable oils are high in unsaturated fats. We should eat less saturated fats.

Fibre helps food to move through our bowels and prevent **constipation**. Foods such as vegetables, wholemeal bread and beans are high in fibre.

Water is needed for lots of reasons, keeping our body at the right **temperature**, **digesting** food, **lubricating** our bones and keeping us **hydrated**. Water is found in drinks, fruits and vegetables.

Keywords	Definition
Constipation	Difficulty empting the bowels
Cholesterol	A type of fat found in our blood
Immune System	A set of tissues which work together to resist infection
Diabetes	A disease that occurs when your blood glucose (blood sugars), is too high.

Micronutrients:

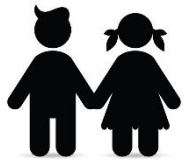
Vitamin	What we need it for	Examples of where we get it from
A	Good vision, especially when it is dark	
B Group	Releasing energy from carbohydrates	Meat 
C	Fighting diseases and helping the body to absorb iron	
D	Along with calcium, it helps our body make strong bones and teeth	Oily 
Minerals	**What we need it for**	**Examples of where we get it from**
Iron	To make red blood cells to carry oxygen around the body	Green leafy veg 
Calcium	Along with vitamin D, calcium helps make strong bones and teeth	

Consequences of a poor diet:

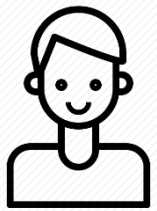
- Eating too many carbohydrates, fatty foods or sugary foods can lead to **obesity,** which can increase the risk of **type 2 diabetes** and **heart disease.**
- Eating too many salty foods can cause **high blood pressure.**
- Too much saturated fat can lead to **high cholesterol.**

Year 9 – Food Technology

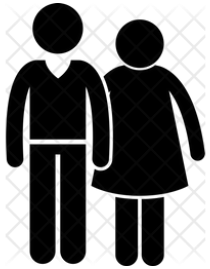
Nutritional needs according to age – Everyone should aim to follow the healthy eating guidelines, but our nutritional needs change throughout each stage of our lives.



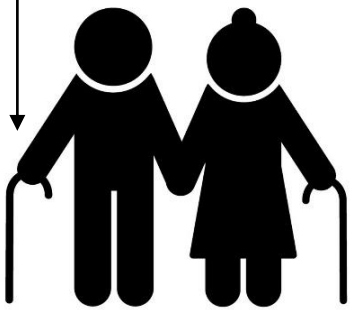
Children, grow quickly and are very active. They need protein to help them grow and repair the body. Carbohydrates are needed for energy to support their physical activity. Calcium and Vitamin D are needed for healthy teeth and bone development.



Teenagers, should aim for a balanced diet. Rapid growth spurts happen around the early teens, girls usually start these earlier than boys. Protein is needed to cope with growth spurts, boys tend to need more due to muscular tissue development. Girls need more iron and Vitamin C as they lose these nutrients through a period. Teenagers also need Calcium and Vitamin D, to support the skeleton reach peak size and bone density.



Adulthood, at this stage growth and development stops. Men require more calories than women because they have more lean muscle and are generally taller and larger. Iron is important for adult women as they continue their periods. Calcium and Vitamin D to keep the skeleton strong as women tend to lode bone strength.



Late Adulthood, as we age our muscle is replaced with fat, so eating high in fat foods must be avoided. Calcium and Vitamin D is needed to help stop bones from becoming weak and brittle. Vitamin B12 is needed to keep the brain healthy and prevent memory loss. Fibre is needed to prevent constipation as the digestive system begins to weaken and Vitamin A is needed to help maintain good eyesight.

Diet and Lifestyle – You may have to plan a meal for someone with a dietary requirement (intolerances, allergies, ethical, religious beliefs and diet related health problems) all affect what people eat.

Vegetarians avoid eating meat and fish for a variety of reasons, including:

- Dislike the taste and texture of meat
- Religious beliefs
- Family influences

Vegans do not eat any foods from animal origin. This includes meat, fish, dairy and honey. To obtain a range of nutrients, vegetarians and vegans do eat:

- Wholemeal bread and flour
- Soya/ plant based products
- Fruit and vegetables

An **allergy** is a reaction to the immune system your body has to a particular food. The most common types are nuts and shellfish. Symptoms include a rash to swelling of the throat and mouth and difficulty breathing.

Food intolerance occurs when a person has difficultly digesting a particular food. Common examples include lactose (cow milk) and gluten (wheat).

Keyword	Definition
Diet	The type of food we eat and drink
Growth Spurt	Growing quickly and suddenly in a short period of time
Rickets	A disease in children from a lack of vitamin D and calcium, causing bones to soften and bend, particularly in legs
Osteoporosis	A medical condition in which the bones become brittle and fragile from a lack of calcium and vitamin D
Iron deficiency anaemia	A condition where a lack of iron in the body leads to a reduction in the number of red blood cells.
Bone density	The amount of bone mineral in bone tissue
Obesity	The state of being grossly fat or overweight
Diabetes	A disease in which the body's ability to produce or respond to the hormone insulin is impaired, resulting in abnormal metabolism of carbohydrates and elevated levels of glucose in the blood.
Tooth Decay	Damage to a tooth caused by dental plaque turning sugars into acid.
Constipation	Difficulty emptying the bowels

Year 9 – Geography – Misrepresented Places - Africa

Africa is a continent

The African continent has a land area of 30 million sq km.

Africa is home to 54 countries all with their own culture, traditions, level of development and biodiversity.

The continent of Africa experiences a range of different climates due to its size. In the north it is an arid and hot climate (along the tropics). Along the equator it is warm and wet.

Africa representation

Representations of place come in many forms: from social media platforms, TV programmes, films, adverts, or even music. All these cultural forms influence how we may think and feel about different places.

There are two sides to the story of the song 'Do they know it's Christmas'. On one hand, the song raised over 10 million for charity.

On the other hand, it creates many misconceptions about the continent of Africa. For example, the phrase 'no rain nor rivers flow' despite the world's largest river running through the continent.

The book 'Africa is not a country' discusses this song in more depth.

Africa's resources

Africa has a large quantity of natural resources, including oil (a fossil fuel), gold (a metal), salt (a mineral) and cocoa beans (food).

Recently discovered oil reserves have increased the importance of the commodity on African economies.

Ghana is the continent's largest producer of gold, followed by South Africa and Mali.

The abundance of natural resources in Africa have helped many countries develop.

However, natural resources are not always a blessing and can create vulnerabilities. Poor governance, trans-boundary dynamics and competition over scarce resources can all create conflict for Africa.

The exploitation of oil is also causing environmental damage.

China in Africa

China's growing population increases the demand for resources and therefore China are investing in Africa countries for resources.

Chinese FDI mostly pays from improving infrastructure in Africa, such as better transport links and technology.

China is heavily investing in countries such as Algeria, Egypt and Angola which are oil rich.

Chinese investment can be argued to have been both successful and unsuccessful. Some countries, such as the Democratic Republic of Congo, have been left in debt.

Keyword	Definition
Borders	A line separating two countries. This can be natural or human created.
Commodity	A raw material or primary agricultural product that can be bought and sold, such as copper or coffee.
Development	The process of something evolving and changing to improve.
Foreign direct investment (FDI)	Foreign Direct Investment is money from large international companies being invested in a country.
Industrialisation	The development of industry in a country or region
Infrastructure	Basic physical structures such as buildings, roads, power supplies, transport links.
Mercator projection	A common map projection that fits all countries on the map by 'shrinking' countries al the equator.
Natural resources	Materials or substances that occur in nature which can be exploited for economic gain.
Permafrost	A thick layer of soil below the surface which remains frozen all year round.
Representation	The description or portrayal of someone or something.
Sanctions	A penalty imposed by one country on another to stop it acting aggressively or breaking international law.
Tundra	A vast, flat, treeless Arctic region of Europe, Asia, and North America in which the ground is permanently frozen.
Vulnerabilities	The state of being exposed to the possibility of being attacked or harmed.

Year 9 – Geography – Misrepresented Places – Africa and Russia

Africa case study - Nigeria

The population of Nigeria is 206.1 million and this is growing by 2,5% per year.

The life expectancy is 54.6 years.

The gross domestic product per capita (GDP per person) is $2,160.

However, the country experiences high inequality, income of Nigeria's top five richest men could end poverty at a national level, yet 5 million people face hunger in the country.

Russia's physical geography

Russia, the largest country in the world, occupies one-tenth of all the land on Earth.

It spans 11 time zones across two continents (Europe and Asia) and has coasts on three oceans (the Atlantic, Pacific, and Arctic).

Russia's climate has warm dry summers and cold winters with temperatures of -30°C and sometimes heavy snowfall.

Siberia in northern Russia is dominated by a huge boreal forest which stretches the entire length of the Arctic circle.

Russia's resources

Russia is a major producer of copper, gold and lead.

Russia holds the world's largest natural gas reserves, the second largest coal reserves and the eight largest oil reserves.

Crude oil accounts for $123 billion of its export revenues.

The recurrent problem with extraction of natural resources is that they are almost always situated in inaccessible places. This is due to the size of Russia and its cold climate.

Russia has vast oil reserves in the Arctic but cannot exploit them. This is a self-imposed restriction as companies do not have the experience or technology for the country to benefit from these resources.

Russia and conflict

In the past 500 years, Russia has been invaded several times from the west.

Russia has repeated attempts to occupy Poland throughout history. The country has a narrow corridor into which Russia could drive its armed forces to block an enemy advance toward its own border, which, being wider, is much harder to defend.

The physical geography of Russia provides the country with natural protection, for example long borders (the border between China and Russia is 4,300 km), mountainous borders (Caucasus between Russia and its border with Iran and Turkey), and freezing climates (temperatures in Siberia can read -60 degrees Celsius).

Russia and Ukraine

There has been tension between Ukraine and Russia for centuries.

Ukraine was part of the Soviet Union until 1991.

Experts say that Russian President Vladimir Putin has been looking for an excuse to go to war with Ukraine in an effort to rebuild the former Russian Empire.

Russia's military is eight times the size of Ukraine's.

Sanctions have been given to Russia due to the attacks. These include an import ban on Russian gold, a ban on the export of luxury goods to Russia and the UK has imposed a 35% tax on some imports.

Russia's economy has been impacted by the sanctions. Car sales have fell by 83.5% and GDP is predicted to fall by 30%.

Abandoned Russia

The collapse of the Soviet Union later led to many abandoned villages.

Unemployment and poor living conditions forced people out of the village and led them to migrate toward the cities.

In northern Russia, there are hundreds of abandoned settlements and ruined factories.

Many villages are home to primarily pensioners and many others have less than 10 residents.

Year 9 – Geography – Dark Tourism

Dark Tourism

Dark tourism refers to visiting places where some of the darkest events of human history. This includes genocide, war and disasters. Popular television shows have introduced this tourism to more people.

There is controversy surrounding dark tourism. There is a lot to consider when it comes to visiting these places as they are sites of human suffering.

Some argue that human suffering is being exploited for economic gain.

However, it is important to consider where this money goes as in most cases it goes toward maintenance, preservation and education. Without dark tourism many sites would eventually disappear.

Some see the locations as a space, something abstract and measurable, such as the location on a map. Some see the locations of tragedy as a place, a location with cultural meanings and human connections.

Natural disasters

Pompeii

Pompeii is a vast site in southern Italy that has been preserved for visitors to explore the ruins of the Mount Vesuvius eruption in 79 A.D.

The eruption is one of the deadliest in European history. The eruption killed 2,000 in Pompeii and up to 16,000 lost their lives in the wider area.

The main cause of death was pyroclastic flows, an extremely hot and fast flowing mass of ash, toxic gas and debris that burnt people alive. Pompeii shows the remains of these people that have been preserved as plaster casts.

One third of this site is unexcavated meaning damage to the area is minimal.

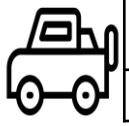
There are replica body casts at the site of Pompeii, this creates human connection with the site.

Mount Merapi

Many people visit Indonesia each year to see the villages that have been destroyed by Mount Merapi eruptions. Particularly the eruption in 2010 that thirteen years on villagers still talk about.

The volcano spewed 140 million cubic metres of rock and ash, destroying three communities, and a series of eruptions killed 353 people, with more than 61,000 evacuated. More than 3,000 buildings were damaged.

Tourism here is very important to the local and national economy. It helps people rebuild their lives following disasters. To many visitors the volcano is a space to visit, to locals it is a place where they must accept many risks and has caused devastation.



Keyword	Definition
Avalanche	A mass of snow, ice, and rocks falling rapidly down a mountainside.
Concentration camp	A place where large numbers of people are deliberately imprisoned in a relatively small area with inadequate facilities to provide forced labour.
Controversy	A prolonged disagreement.
Crevasse	A deep crack in a glacier or ice sheet.
D-Day	The D in D-Day stands for Day. It is a code used for the day of any important invasion or military operation.
Disaster	An event that results in loss of life.
Economic	Something specifically relating to money.
Eddy	A circular current.
Excavated	Dug up.
Extermination camp	A camp with the sole purpose of murder.
Incarcerated	Imprisoned.
Nuclear	Energy released during fission or fusion.
Place	A location that has cultural meanings and human connections.
Preserved	Maintain in its original or existing state,
Pyroclastic flow	A dense destructive mass of very hot ash, lava and gas that is ejected explosively from a volcano.
Radioactive	Emitting or relating to the emission of ionizing radiation.
Space	A location that is measurable, such as where it is on a map.
Summit	The highest point of a hill or mountain.
Tourism	The commercial organisation and operation of holidays and visits to places of interest.
Upwelling	The upward motion of water.

Year 9 – Geography – Dark Tourism

Conflict

Normandy

Many people associate Normandy with the setting for D-Day in 1944.

Each year there are over 5 million visitors to the sites and museums devoted to D-Day and the Battle of Normandy.

Many people see Normandy as a place with historic meaning, while others visit this space in France for its stunning beaches.

Since 2019, Normandy Tourism and the Normandy region are committed to tourism being sustainable, specifically by encouraging use of the train, bikes and footpaths. Normandy have had to do this due to large tourist numbers contributing significantly to France's carbon footprint.

Auschwitz

Geography impacted where concentration camps were located. They could only go in locations of Nazi German control and extermination camps were outside of Germany.

Each year 2.3 million people visit Auschwitz Birkenau. 11% of the tourists that go to Poland visit Auschwitz, some argue that we should not give money to an industry that makes money from human suffering. However, the Auschwitz-Birkenau foundation is a non-governmental and non-profit organisation.

The house of commandant Rudolf Hoess has been lived in by later generations. These generations have seen the site as a space.

Prisons

Alcatraz

Alcatraz Island is a small island 1.25 miles offshore from San Francisco, California, United States.

In 1934, the island was converted into a federal prison. The strong currents around the island and cold-water temperatures (10 degrees Celsius) due to upwelling made escape nearly impossible. The area also has an eddy that would be difficult to swim through and 11 species of shark.

Alcatraz closed after 29 years of operation in 1963 because it was too expensive to continue running. The island now has prison tours for people to see and attracts 1.5 million each visitors per year.

Nuclear Disasters

Chernobyl

In 1986 a routine 2—second shut down of the system seemed to be another test of electrical equipment but seven seconds later, a surge created a chemical explosion that released who amounts of radiation into the atmosphere.

Residents were given two hours to gather their belongings before evacuation began. Approximately 350,000 people were evacuated as a result of the accident and a radiation zone is still in place today. Many predict it will be up to 3,000 years before the area is safe for residency.

In 2021 nearly 73.1 thousand tourists visited the Chernobyl Exclusion Zone in Ukraine in 2021.

Fukushima

The Fukushima nuclear power disaster was triggered by an earthquake in Japan. The earthquake caused a 15-metre-high tsunami wave that hit the nuclear power plant.

Over 100,000 people were evacuated because of this event. Each year over 50,000 people visit the area.

Deadly tourism

Mount Everest

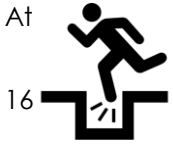
Mount Everest us Earth's highest mountain above sea level,. The China-Nepal border runs across its summit point.

Over 310 people have died trying to reach the summit of Mount Everest.

Until the beginning of the 21st century, mountaineering was an exclusive activity accessible only to a few. Twenty years later, despite being a high-risk activity that requires a high level of specialised skill, its popularity among recreational climbers has drastically increased.

The recent trend can be explained by the shift to commercial guided-tour industry which is capitalising on better accessibility to big mountains, affordable transportation and more advanced equipment.

In 2015, a 7.8 magnitude earthquake struck Nepal and the surrounding countries. The shaking triggered an avalanche into the base camp on Mount Everest. At least 22 people were killed.



In 2014, a chunk of the glacier came away from the mountain and killed 16 people.

Crevasses on Mount Everest are around 160 feet. People falling into these cause a lot of deaths.

Year 9 History – World War 2

Sep 1939 Germany invades Poland starting WW2

Sep 1939 Britain declares war

1940 Battle of Britain

Sept 1940 The Blitz

1940 Dunkirk

1941 Russia joins the war

1941 December Pearl Harbour Attack bring in the USA

1944 D-Day The Allies land in France

1945 Germany surrender

1945 August Japan surrender after the Atomic bombing of Hiroshima/Nagasaki

Why was there another world war?

- ***Adolf Hitler***, leader of the Nazi Party, had ambitions of world domination.
- Germany was angered at the terms in the **Treaty of Versailles**. Hitler announced that he would rearm Germany in violation of the Treaty.
- By 1939, Nazi Germany was ready for the next phase of Hitler's racial program, which called for **Lebensraum**, or "living space," for the Aryan race.
- Some blame Neville Chamberlain and the **appeasement** tactic for being too weak.

What happened at Dunkirk?

The German Army trapped the British and French armies on the beaches around **Dunkirk**. Soldiers were trapped and an easy target for the Germans.

Boats and ships transferred rescued the soldiers and brought them back to Britain. Poor planning meant that many soldiers were left to die. However, Britain saw it as a huge success, it increased morale and led to the victory of war.

The Blitz

Germany bombed British towns and cities known as 'The Blitz'. London was bombed for 57 nights in a row.
Britain prepared by building air raid sirens, black out curtains and Anderson shelters.
The attacks had an impact on morale, many lost faith in winning the war.
Their damaged cities and loss brought the war to people's homes.

The end of WW2

Hitler's death: Hitler then shot himself before he could be captured

Fall of Berlin: the German High Command signs the surrender of all German forces. Ending the war in Europe.

Atomic bomb: The Japanese surrendered after a second atomic bomb was dropped on Nagasaki, ending WW2.

How did WW2 start?

Between 1935 and 1939 Hitler invaded Austria, Sudetenland and Poland.
Hitler's invasion of Poland in September 1939 drove Great Britain and France to declare war on Germany.

Why were children evacuated?

The fear of German bombing on British cities causing civilian deaths, led to the government ordering the **evacuation** of children.
They sent the children to volunteer families in the countryside. This meant they were separated from their own families and sent with little to no home comforts.

Women's role

The lack of men in Britain during the war meant that women took on many new roles. They worked in **munitions** factories, farming, nursing and lots more.
The war allowed more job opportunities for women and started the discussion into gender equality.

The Battle of Britain

The Battle of Britain was a war in the air against the German Luftwaffe. The RAF were successful in defending Britain against the air attacks.
Britain's preparation, Germany's lack of plan and Britain shooting German planes faster than they could rebuild led to the success.

Who else was involved?

Japan
They attacked Pearl Harbor, located in Hawaii. Japan believe that they were destined to rule over all of Asia. The USA was getting in their way.

Russia/ USSR
In June 1941, Hitler invaded Russia in his efforts to destroy Communism. In the city of Stalingrad the Soviet Union pushed Germany back, marking their first major defeat. The tide of war was changing.

Countries in the Empire
The Dominions (Canada, NZ, Australia) and the colonies in Egypt, supplied extra man power, supplies and battlefield support to help Britain win the war.

The USA
The Americans declared war on Japan after their attack on Pearl Harbor. Helping end WW2 with the use of the atomic bomb.

Year 9 History – World War 2

Key Words

Keyword	Definition
Treaty of Versailles	Treaty with conditions that ended the state of war between Germany and the Allied Powers after WW1
Nazi	A member of the National Socialist German Workers' Party.
Evacuation	The action of fleeing a place under attack
Blitzkrieg	Attacking from the air and on the land powerfully with modern military technology for a quick defeat of enemies on the battlefield
Appeasement	A diplomatic policy, to avoid conflict, with an aggressive power by giving the power what they want.
Armistice	An agreement made by opposing sides in a war to stop fighting for a certain time; a truce.
Home front	The civilian population and activities of a nation whose armed forces are engaged in war abroad.
Atomic bomb	A bomb which derives its destructive power from the rapid release of nuclear energy, causing damage through heat, blast, and radioactivity.
Aryan Race	A concept in Nazi racial ideology of the ideal German person – a superior race of people.
Luftwaffe	German term for an air force
Munition	military weapons, ammunition, equipment, and stores.
V.E Day	the day (8 May) marking the Allied victory in Europe in 1945.
Invasion	Taking control of a country or region with an armed force
Triumph	Winning something or being successful
Lebensraum	A German word meaning "Living Space" - in reference to fertile land in Eastern Europe (Poland, Baltic states, Belarus, Ukraine, Russia) - the future territory of the German Empire under the Nazi's.
Blitz	A German bombing campaign against Britain from the air
Air Raid	An attack from the air
Black Out	When windows are blocked out to hide any light
Conscription	When men were forced to join the army
Propaganda	Information, which is often false, which a political organisation publishes to make people agree with what it is saying.
Operation Barbarossa	The invasion of Russia
Empire	a large group of states or countries ruled over by a single leader.
Communism	A political belief that everyone should be seen, a theory or system of social organization in which all property is owned by the community and each person contributes and receives according to their ability and needs.

Samba Music

Year 9 Music Knowledge Organiser

a. Key Words

Structure - How the sections of the music are put together.
Ostinato - A short repeated rhythmic or melodic pattern.
Ornamentation - Embellishing a melody.
Syncopation - Off beat.
Cross Rhythms - Two different rhythms at the same time.
Polyphonic Texture - More than two different rhythms at the same time.
Sambista - Leader of a Samba ensemble.
Rubato - Fluctuations in the tempo.
Son Clave - A syncopated rhythm in Samba music that has a 2:3 or 3:2 version.
Call and Response - A musical conversation where one instrument plays and another responds.

b. Artists

Bellini

Fundo de Quintal

Exaltasamba

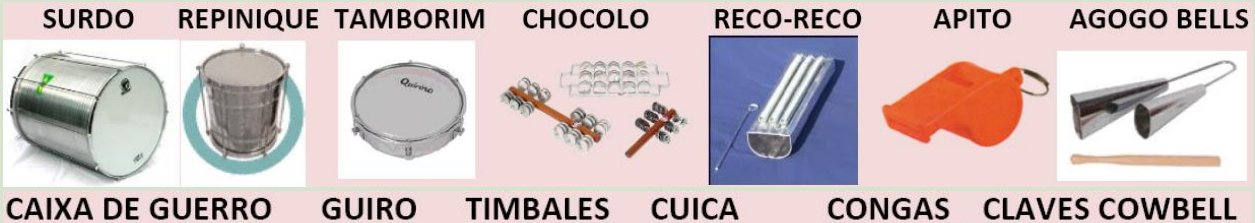
Shakira has been influenced by Samba music

c. History of Samba Music

Samba is a musical genre and dance style with its roots in Africa via the West African slave trade and African religious traditions. Samba is an expression of Brazilian cultural expression and is a symbol of carnival.

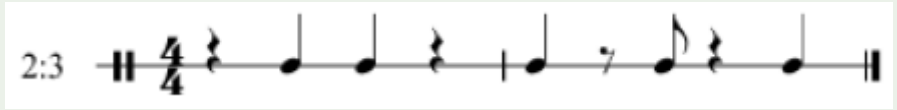
d. Typical Instruments in Samba

The instruments of Samba have been influenced by Portuguese colonies who imported slaves from Africa.



e. Rhythm and Metre

Samba music is built around **OSTINATOS** usually 4 or 8 beats long (regular phrases). Each group of instruments can have their own ostinato featuring **OFFBEAT RHYTHMS** and **SYNCOPATION**. Often the **SON CLAVE SYNCOPATED** rhythm is used, either the **2:3** or **3:2**. Samba music is built up of lots of different sections. For each section, the **SAMBISTA** will need to know an **OSTINATO.**



f. Structure

Samba music often starts with an **INTRODUCTION** often featuring **CALL AND RESPONSE RHYTHMS** between the Samba Leader and ensemble. The main Ostinato rhythm of Samba is called the **GROOVE** when all the instruments of the Samba Band play their respective rhythms over-and-over again forming the main body of the piece. The **GROOVE** is broken up by **BREAKS** - 4 or 8 beat rhythms providing contrast and **MID SECTIONS** – one or two instruments change the rhythm of their ostinato and the others stay the same or stop. Sometimes **BREAKS** and **MID SECTIONS** feature a **SOLOIST** who "shows off" their rhythms. The **SAMBISTA** must signal to the group when to change to a different section which is normally done with an **APITO** (Samba Whistle – loud!). A piece of Samba can end with either a **CALL AND RESPONSE** pattern or a pre-rehearsed ending phrase of rhythm. The **FORM AND STRUCTURE** of a piece of Samba may look like the following:

Intro	Groove	Break 1	Groove	Break	Groove	Mid-Section 1	Groove	Break 1	Groove	End

g. Key Features

- Texture varies (monophonic, polyphonic, call and response, cross-rhythms).
- Dynamics are loud.
- Tempo is fast.
- Based on rhythms. Only the different timbres of percussion provide different pitches. No melody.

h. Questions

1. What is the role of the Sambista?
2. What are the two versions of the son clave?
3. What happens in the groove section?
4. Name an artist that has been influenced by Samba music?

Year 9 PRE – Term 1A and 1B : Is all life sacred?

Key Words

Sanctity of Life: The idea that life is sacred and given by God
Quality of Life: The standard of health, comfort and happiness experienced by an individual or group
Intrinsic Value: The idea that we have value automatically and naturally, and we cannot lose this.
Moral dilemma: A situation in which a difficult choice has to be made.
Soul: The spiritual or immaterial part of a human being or animal, regarded as immortal.
Conception: When sperm fertilises an egg.
Contraception: The act of preventing/stopping pregnancy.
Viability: When it is medically acknowledged that a foetus could survive outside the womb.
Abortion: The deliberate termination of a human pregnancy.
Saviour Siblings: The concept of creating a zygote through IVF (In-Vitro Fertilisation – outside of the body) which is a genetic match for a sick sibling.
Agape: The Christian teaching meaning compassionate love; showing kindness to those in need
Capital Punishment/ death penalty: punishing someone by death, lawfully, for crimes committed.
Deterrent: To put someone off e.g. the death penalty may put offenders off committing serious crimes.
Reformation: To help someone to change their ways.

What is the Sanctity of Life?

- Many religious believers, for example Christians and Muslims, believe that **all human life is sacred (special).** Life is a gift that should be valued.
- The concept of sanctity of life often stems from the belief that we were created by God, therefore we automatically have intrinsic value; we can never lose what it is that makes us so special.
- For example, in **Christianity**, the Bible teaches that ***'God breathed life into Adam',*** which teaches Christians that our special nature comes from God
- Many religions link our sacred nature with the idea of us having a **soul.**

When does life become sacred?

- The question of 'when does life begin' has been debated for many years.
- Many religious believers have clear views about abortion, and these beliefs generally stem from the debate of when we get our 'sacred' nature. Is it at birth, or some earlier point?

Conception 	- When the sperm meets the egg. - At the point, DNA has been determined and something has been created which, if it continues will become a human.
Heartbeat 	- A foetus' heartbeat can be detected 3-6 weeks into the pregnancy. - For many, it makes sense that if a foetus has a heartbeat, they are considered a 'life'.
Viability 	- This is when the foetus is considered 'viable' meaning that they would be likely to survive outside the womb. - Legally this is at 24 weeks and abortion is illegal under a number of circumstances after this point.
Birth 	- A full term pregnancy is considered to be 37-40 weeks. - This is when the baby is here is the world; we celebrate our birthdays from this point.

What are the moral issues surrounding abortion?

England	- Abortion was made legal in 1967 and a limit of 28 weeks was established, in 1990 the law changed, making the cut off 24 weeks. - Cut off for an abortion is 24 weeks in most circumstances, unless it is a life-or-death situation, the cut of can be extended. - 2 doctors must agree in most circumstances, 1 if it's a life-or-death situation.
Northern Ireland	- Abortion was made legal in March 2020. - Cut off for abortion is 12 weeks in Northern Ireland. - Limit of 24 weeks if it is a life-or-death situation. - In 2021, political leaders stated that women can still not access services to have a termination and have to travel to other parts of the UK to access medical care.

How do different Christian respond to abortion?

Methodists 	- Christianity teaches that life begins at conception, and we would receive our soul at that point too. - The Bible suggests that God has planned the life of every human, even before conception: ***'Before I formed you in the womb I knew you'.*** - Some Christians, such as Methodists, still disagree with abortion but would say it is **acceptable in some circumstances**, such as if the child would be severely disabled, or if the mother's life was at risk.
Catholics 	- Therefore, abortion does end a sacred life, meaning it is generally considered to be wrong. Catholics are very strict and follow a strong sanctity of life ethic, meaning they consider abortion to be murder and therefore against the 10 commandments: 'Do not commit murder'.

Should human life be created to save another?

- One advancement in medicine in recent times is the idea of **'Saviour Siblings'.**
- This is the idea that a child is born in order to provide an organ or cell transplant to a sibling that is affected by a fatal disease.
- The child is **conceived through IVF**, a procedure where the sperm and the egg are combined outside of the womb and, if they are a genetic match for the sick child, the fertilized egg will be implanted into the mother's womb. This fertilized egg is called a zygote.
- Whilst some people believe this offers a genius opportunity to save a child's life, others, such as **Roman Catholics**, believe it is not acceptable to create a child to simply use them to save another's life. A Catholic Archbishop taught: ***'To conceive a child to use him – even if it is to cure – is not respectful of his dignity'.***
- In addition, if a zygote is created that is not a genetic match, it is destroyed.
- Many religious believers would consider this zygote to already be a life.

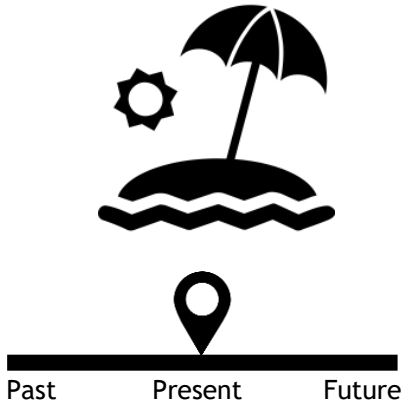
Do our actions affect our sanctity of life?

- Some people do actions which do not respect the sanctity of life of others, for example they may commit crimes such as murder.
- If this happens, **does the criminal lose their sanctity of life**?
- Religious people would generally say no – you cannot 'lose' your sanctity of life, because it is intrinsic – it's just part of who we are.
- **<u>The Death Penalty:</u>**
- In some countries, those who take the life of others may be given the death penalty as a punishment. They may be killed, for example, by hanging or lethal injection.
- This is **not legal** in the UK but still happens in countries such as the USA, China and Saudi Arabia.
- **Reasons for the death penalty: *An eye for an eye***: if you kill, you deserve to be killed, It puts other people off committing such serious crimes (it's a **deterrent**), It brings justice to the family of the victim.
- **Reasons against the death penalty:** It goes against the sanctity of life – the criminal is still sacred, Christian quote: **'Human beings were made in God's image',** One of the **10 commandments: 'Do not kill'.**

Year 9 Spanish – Topic 1 – Holidays

¿Adónde vas normalmente de vacaciones? Where do you normally go on holiday? **A**

Normalmente normally **Generalmente** generally **A veces** sometimes **Siempre** always **Nunca** never	**voy a** I go to	**España** Spain **Escocia** Scotland **Gales** Wales **Francia** France **Grecia** Greece **Italia** Italy **Turquía** Turkey **los Estados Unidos** the USA	**en autocar** by coach **en avión** by plane **en barco** by boat **en coche** by car **en tren** by train	**con mi familia** with my family **con mis amigos** with my friends **con mis padres** with my parents



Me encanta I love **Me gusta** I like **Prefiero** I prefer **Suelo** I tend **Puedo** I can **Lo que más me gusta es** what I like most is	**comprar recuerdos** to buy souvenirs **descansar** to relax **jugar al fútbol** to play football **montar en bici** to ride my bike **nadar en el mar** to swim in the sea **nadar con delfines** to swim with dolphins **tomar el sol** to sunbathe **visitar monumentos** to visit monuments **comer comida deliciosa** to eat delicious food **descubrir la cultura** to discover culture **descubrir la naturaleza** to discover nature **ver la puesta del sol** to watch the sunset **hacer deportes acuáticos** to do water sports **hacer turismo** to do sightseeing **ir a la playa** to go to the beach **ir al parque temático** to go to the theme park **ir de tapas** to go for tapas **ir de excursión** to go on a trip	**porque** because **ya que** because **dado que** given that	**es** it is **puede ser** it can be	**una experiencia fantástica** a fantastic experience **una experiencia inolvidable** an unforgettable experience **emocionante** exciting **genial** great **guay** cool **increíble** incredible **maravilloso** marvellous **relajante** relaxing

Cuando… when …

hace buen tiempo
the weather is nice

hace calor
the weather is hot

hace sol
the weather is sunny

hace mal tiempo
the weather is bad

llueve
it rains

y and **o** or **pero** but **por ejemplo** for example **porque** because **entonces** so
sobre todo especially **si** if **también** also **primero** firstly **después** then **finalmente** finally

Year 9 Spanish – Topic 1 – Holidays

¿Adónde fuiste de vacaciones recientemente? Where did you go on holiday recently? **B**

El año pasado last year **El verano pasado** last summer **El invierno pasado** last winter **Hace dos años** two years ago **Recientemente** recently	**fui a** I went to	**España** Spain **Escocia** Scotland **Gales** Wales **Francia** France **Grecia** Greece **Italia** Italy **Turquía** Turkey **los Estados Unidos** the USA	**en autocar** by coach **en avión** by plane **en barco** by boat **en coche** by car **en tren** by train	**con mi familia** with my family **con mis amigos** with my friends **con mis padres** with my parents

Durante las vacaciones during the holidays
el primer día on the first day **el segundo día** on the second day
el último día on the last day

Fue
it was

una experiencia fantástica
a fantastic experience
una experiencia inolvidable
an unforgettable experience
un sueño hecho realidad
a dream come true

emocionante exciting
genial great
guay cool
increíble incredible
maravilloso marvellous
relajante relaxing

Me encantó I loved it
Me gustó I liked it
Lo pasé bomba I had a great time

porque because
ya que because

dado que
given that

compré recuerdos I bought souvenirs
descansé I relaxed
jugué al fútbol I played football
monté en bici I rode my bike
nadé en el mar I swam in the sea
nadé con delfines I swam with dolphins
tomé el sol I sunbathed
visité monumentos I visited monumentos

descansamos
we relaxed

nadamos
we swam

comí comida deliciosa I ate delicious food
descubrí la cultura I discovered culture
descubrí la naturaleza I discovered nature
vi la puesta del sol I watched the sunset

descubrimos
we discovered

hice deportes acuáticos I did water sports
hice turismo I did sightseeing

hicimos
we did

fui a la playa I went to the beach
fui al parque temático I went to the theme park
fui de tapas I went for tapas
fui de excursión I went on a trip

fuimos
we went

hacía buen tiempo
the weather was nice

hacía calor
the weather was hot

hacía sol
the weather was sunny

hacía mal tiempo
the weather was bad

llovía
it was raining

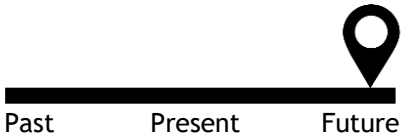
y and **o** or **pero** but **por ejemplo** for example **porque** because **entonces** so
sobre todo especially **si** if **también** also **primero** firstly **después** then **finalmente** finally

Year 9 Spanish – Topic 1 – Holidays

¿Adónde vas a ir de vacaciones en el futuro? Where are you going to go on holiday in the future?

C

En el futuro in the future **El verano próximo** next summer **El invierno próximo** next winter **El año próximo** next year	**voy a** I am going **vamos a** we are going	**ir a** to go to	**Argentina** **Colombia** **Costa Rica** **Cuba** **Perú** **la República Dominicana** Dominican Republic **México**	**con mi familia** with my family **con mis amigos** with my friends **con mis padres** with my parents
Si fuera rico/rica if I were rich **Si ganara la lotería** if I won the lottery **Si pudiera** if I could	**me gustaría** I would like **quisiera** I would like			



Será it will be	**una experiencia fantástica** a fantastic experience **una experiencia inolvidable** an unforgettable experience **un sueño hecho realidad** a dream come true	**porque** because **ya que** because **dado que** given that	**voy a** I am going **vamos a** we are going	**comprar recuerdos** to buy souvenirs **descansar** to relax **jugar al fútbol** to play football **montar en bici** to ride my bike **nadar en el mar** to swim in the sea **nadar con delfines** to swim with dolphins **tomar el sol** to sunbathe **visitar monumentos** to visit monuments **comer comida deliciosa** to eat delicious food **descubrir la cultura** to discover culture **descubrir la naturaleza** to discover nature **ver la puesta del sol** to watch the sunset **hacer deportes acuáticos** to do water sports **hacer turismo** to do sightseeing **ir a la playa** to go to the beach **ir al parque temático** to go to the theme park **ir de tapas** to go for tapas **ir de excursión** to go on a trip
Sería it would be	**emocionante** exciting **genial** great **guay** cool **increíble** incredible **maravilloso** marvellous **relajante** relaxing		**me gustaría** I would like **quisiera** I would like **podría** I could	

hace buen tiempo
the weather is nice

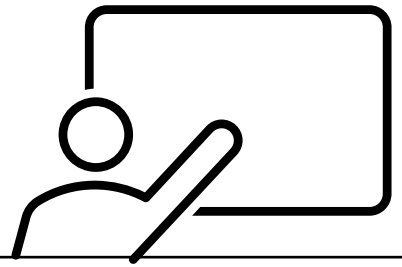
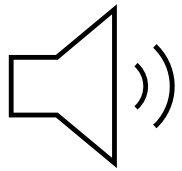
hace calor
the weather is hot

hace sol
the weather is sunny

hace mal tiempo
the weather is bad

llueve
it rains

y and **o** or **pero** but **por ejemplo** for example **porque** because **entonces** so
sobre todo especially **si** if **también** also **primero** firstly **después** then **finalmente** finally

LL 'Yuh' **Ll**amo	**Z** 'Th' **Z**umo	**Ge** 'Heh' **Ge**nial	**Ñ** 'Ny' Ma**ñ**ana
CE 'The' Ha**ce**r	**Que** 'Keh' Por**que**	**Gi** 'Hee' '**Gi**mnasio'	**V** 'B' **V**erde
CI 'Thi' **Ci**nco	**Qui** 'Kee' **Qui**en	**J** 'H' Me**j**or	**RR** 'rrrr' Ho**rr**ible
			**H** '-' **H**ola 

KS3 Spanish – Key vocabulary

Connectives

además in addition
también also
o or
pero but
y and
sino if not
porque/ya que because
sin embargo however

Opinions

me encanta I love
me gusta I like
prefiero I prefer
no me gusta I don't like
odio I hate

en mi opinión in my opinión
para mí for me
sin duda without doubt

considero que I consider that
creo que I believe that
diría que I would say that
pienso que I think that

Reasons

es
it is

bastante quite
completamente completely
demasiado too
muy very
tan as
un poco a bit

agradable enjoyable
divertido fun
emocionante exciting
guay cool
maravilloso wonderful
genial great
increíble incredible
relajante relaxing

aburrido boring
decepcionante disappointing
horrible awful
fatal terrible

Present

A veces sometimes
Normalmente normally
Nunca never
Siempre always
Por la mañana in the morning
Por la tarde in the afternoon
Por la noche in the evening

después after
finalmente finally
luego then
primero firstly
segundo secondly

tengo I have
soy I am
hay there is/ there are
juego I play
hago I do
voy I go

bebo I drink
charlo I chat
como as/like
escucho I listen
leo I read
uso I use
visito I visit

tener to have
ser to be
jugar to play
hacer to do
ir to go
beber to drink

charlar to chat
comer to eat
escuchar to listen
leer to read
usar to use
visitar to visit

Future

Esta noche This evening

Mañana Tomorrow

La semana próxima Next week

Este fin de semana This weekend

El año próximo Next year

En el futuro In the future

voy a I am going
va a He/She/It is going
vamos a We are going

voy a comer I am going to eat
voy a escuchar I am going to listen
voy a estudiar I am going to study
voy a hacer I am going to do
voy a ir I am going to go
voy a jugar I am going to play
voy a salir I am going to go out
voy a ver I am going to watch/see

será it will be
sería it would be
me gustaría I would like
si pudiera if I could

Past

Ayer Yesterday
Anoche
Yesterday evening
El fin de semana pasado
Last weekend
El año pasado
Last year
En el pasado
In the past
La semana pasada
Last week
Recientemente
Recently

era I was
tenía I had
había there used to be

fue it was

jugué I played
hice I did
fui I went
bebí I drank
charlé I chatted
comí I ate
escuché I listened
leí I read
usé I used
visité I visted

Self-Quizzing

Instructions: For this revision practice we would like you to create 9 questions from 1 subject using the knowledge organisers.

Tips:
- Write out the question first. Try questions that begin with: what, how, why.
- Answer the question without looking at your knowledge organiser. This will strengthen your memory and recall.
- Check your answer in green pen. Correct it if you didn't get it 100% right.

See link and QR Code below for a detailed video of this task:
https://www.youtube.com/watch?v=Y22g99Xj23A

Subject: _____

Question Number	Question	Answer	Self checking (green pen). Check your answer and give yourself a tick or a cross. If you got it wrong, correct your answer.
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9			**50**

Subject: _____

Question Number	Question	Answer	Self checking (green pen). Check your answer and give yourself a tick or a cross. If you got it wrong, correct your answer.
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9			

Subject: _____

Question Number	Question	Answer	Self checking (green pen). Check your answer and give yourself a tick or a cross. If you got it wrong, correct your answer.
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9			

Subject: _____

Question Number	Question	Answer	Self checking (green pen). Check your answer and give yourself a tick or a cross. If you got it wrong, correct your answer.
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9			

Subject: _____

Question Number	Question	Answer	Self checking (green pen). Check your answer and give yourself a tick or a cross. If you got it wrong, correct your answer.
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9			

Look, Cover, Write, Check

Instructions:

- Pick out key words and key facts from a subject and copy out the definition or the fact. For this activity use your knowledge organiser, exercise book or revision tools to **look** at the correct definition of a keyword or fact.
- Next **cover** the definition or fact over with your hand so that you have to memorise the definition.
- Next **Write** out the definition or fact in the definition box below.
- Finally **check** if you have written your definition or fact out correctly from memory.

Tips:

- Look at the keyword or fact and read it aloud or inside your head.
- Read over it twice more and cover it up with your hand.
- Whilst it is covered up, write out the definition or fact in the space below.
- Check what you have written against what you read. Make any corrections in green pen.

See link and QR Code below for a detailed video of this task

https://www.youtube.com/watch?v=ltEzF0DoaE4

Subject: _____

Look - look at the sentence or word on your knowledge organiser. Read over it twice.	Cover (cover up the sentence or word by putting your hand over it or turning the page)	Write – write the sentence or word here. Spelling and word order both matter!	Self checking (green pen). Check your answer and give yourself a tick or a cross. If you got it wrong, correct your answer.

Subject: _____

Look - look at the sentence or word on your knowledge organiser. Read over it twice.	Cover (cover up the sentence or word by putting your hand over it or turning the page)	Write – write the sentence or word here. Spelling and word order both matter!	Self checking (green pen). Check your answer and give yourself a tick or a cross. If you got it wrong, correct your answer.

Subject: _____

Look - look at the sentence or word on your knowledge organiser. Read over it twice.	Cover (cover up the sentence or word by putting your hand over it or turning the page)	Write – write the sentence or word here. Spelling and word order both matter!	Self checking (green pen). Check your answer and give yourself a tick or a cross. If you got it wrong, correct your answer.

Subject: _____

Look - look at the sentence or word on your knowledge organiser. Read over it twice.	Cover (cover up the sentence or word by putting your hand over it or turning the page)	Write – write the sentence or word here. Spelling and word order both matter!	Self checking (green pen). Check your answer and give yourself a tick or a cross. If you got it wrong, correct your answer.

Subject: _____

Look - look at the sentence or word on your knowledge organiser. Read over it twice.	Cover (cover up the sentence or word by putting your hand over it or turning the page)	Write – write the sentence or word here. Spelling and word order both matter!	Self checking (green pen). Check your answer and give yourself a tick or a cross. If you got it wrong, correct your answer.
			60

Mind Maps

Subject: _____

Instructions: Create a mind map for all the key topics associated within a specific part of a subject.

Tips:

- Read over the knowledge organiser and look for 3 – 5 main areas. Use these to start your mind map.
- Look for 3 – 5 main points in each part of your mind map. Add these to your mind map in a way that is concise and to the point (don't waste words).

See link and QR Code below for an explained video of this task in history:

https://www.youtube.com/watch?v=oh9BpSNvbME&t=37s

Mind Maps

Subject:

Topic: _____

Topic: _____

Mind Maps

Subject:

Topic: _____

Topic: _____

Mind Maps

Subject:

Topic: _____

Topic: _____

Mind Maps

Subject:

Topic: _____

Topic: _____

Mind Maps

Subject:

Topic: _____

Topic: _____

Flash Cards

Subject: _____

Instructions: Create a flashcard for all the key topics associated within a specific part of a subject.

Tips:

- Choose a topic to revise and identify the essential knowledge you need to remember
- On one side of your flash card add the key concept
- On the other side of your flashcard add the information which is essential for you to know for that concept
- If you remember all of the information on the flash card, well done! Review it in 3 – 4 days.
- If you can't remember all of the information the flash card, read the flash card 2 – 3 times and try again. Keep doing this until you can remember it.

Flash Cards

Subject:

Topic: _____

Topic: _____

Flash Cards

Subject:

Topic: _____

Topic: _____

Flash Cards

Subject:

Topic: _____

Topic: _____

Flash Cards

Subject:

Topic: _____

Topic: _____

Flash Cards

Subject:

Topic: _____

Topic: _____

Flash Cards

Subject:

Topic: _____

Topic: _____

Student Revision/Home Learning Timetable

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
3.00pm							Check next weeks HW & plan what days you will complete each set of HW.
4.00pm							
5.00pm							
6.00pm							
7.00pm							