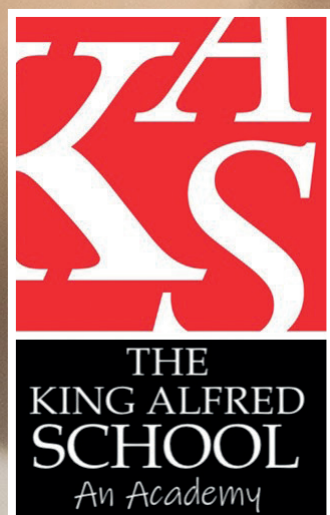


Year 9 Homework Booklet

*"Knowledge is power. Information is liberating.
Education is the premise of progress, in every
society, in every family"*

Nelson Mandela

Learning Cycle 1



Name:

Tutor:

Belong Believe Be Proud



Your Homework Booklet

Learning Cycle 1

This is your homework booklet, in your homework booklet you will find a knowledge organiser for each subject that you are going to study in learning cycle 1, these are a summary of the most important pieces of information that you need to know.

You will be expected to learn all this information and complete activities in your workbook.

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Your Homework Booklet

At TKASA, we place a great emphasis on the importance of reading in order to accelerate the development of your vocabulary and fluency in communication. Not only that, a good book will teach you more about the world around you and help you empathise with others. We recommend a minimum of 20 minutes of reading per day. Have a look at the reading list below for some inspiration

The Hunger Games

Suzanne Collins

Northern Lights

Philip Pullman

The Fault in Our Stars

John Green

The Lord of the Rings

J. R. R. Tolkien

Twilight

Stephenie Meyer

To Kill a Mocking Bird

Harper Lee

When Hitler Stole Pink Rabbit

Judith Kerr

Maggot Moon

Sally Gardner

Shug

Jenny Han

Jane Eyre

Charlotte Brontë

A Street Cat Named Bob

James Bowen

Stargirl

Jerry Spinelli

Roll of Thunder Hear My Cry

Mildred D. Taylor

Swallows and Amazons

Arthur Ransome

The Wheel of Surya

Jamila Gavin

The Earthsea Quartet

Ursula K. Le Guin

Never Say Die

Anthony Horowitz

Treasure Island

Robert Louis Stevenson

Fly-By-Night

Frances Hardinge

Mortal Engines

Philip Reeve

Geek Girl

Holly Smale

Flour Babies

Anne Fine

My Family and Other Animals

Gerald Durrell

Holes

Louis Sachar

Cirque Du Freak

Darren Shan

Cow Girl

G R Gemin

The Girl Who Drank the Moon

Kelly Barnhill

Learning Cycle 1



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Knowledge Quiz

Your teacher will quiz you on your knowledge organiser 3 times each learning cycle to check how well you are doing your homework.

The 'Mark' box must be used to record your score from each quiz.

	Maths	English	Science	Geography
QUIZ 1	/	/	/	/
QUIZ 2	/	/	/	/
QUIZ 3	/	/	/	/

	History	MFL	Drama	Music	PE
QUIZ 1	/	/	/	/	/
QUIZ 2	/	/	/	/	/
QUIZ 3	/	/	/	/	/

	Art	DT	Comp	RS
QUIZ 1	/	/	/	/
QUIZ 2	/	/	/	/
QUIZ 3	/	/	/	/



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How to use your knowledge organiser for homework

The Knowledge Organisers are designed to help you learn a wide range of knowledge which in turn will mean you are more prepared for your lessons as well as the new style GCSEs that you will sit in the future.

For homework you should use your knowledge organiser to complete one of our accepted strategies in your workbook you should either

- **Write**
- **Mind Map**
- **Transform**

Do not just copy into your workbook!

Here are some tips on how you can use your workbook

Your tutor will check your workbook each week

Look, cover Write, check, Correct

First

Look through and read the information on a section of your knowledge organiser



Then

Cover the section so you can no longer see the information

History

Cycle 1 in History will focus on: An introduction to studying history, a depth study enquiry called *why did William win the Battle of Hastings?* and a short enquiry into why the Church was so important in medieval times.

Key Words and Definitions	
Chronology	The order in which events happened
Primary Source	Something from the time being studied for example if you were studying The Battle of Hastings a shield from the Saxon shield Wall would be primary source
Interpretation	A view of the past created from primary sources e.g. a museum exhibition about the Battle of Hastings is an interpretation.
Cause	A reason why something happened
Consequence	A result of an event or change
Significance	A measure of how much impact an event, person or change has had.
Saxon	Most of the English people before 1066
Norman	People from Normandy, France e.g. William the Conqueror
Tactics	A planned action to help you achieve success
Cavalry	Soldiers on horseback
Infantry	Soldiers on foot
The Church	Christian organisation led by the Pope. England was a catholic country until the 16th century

Topic 1 What is History?

History is finding out about the past by using the evidence that has been left behind. It is also about asking questions and sorting out answers. In history we also look at how why interpretations are created

Here are the different **time periods** we use to divide up British History:

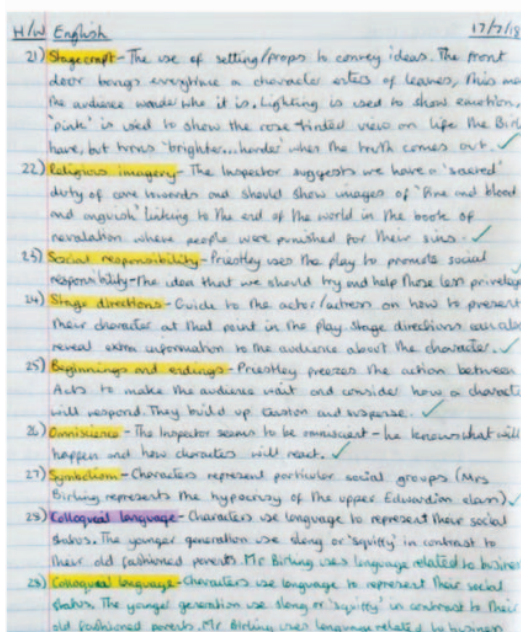
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1485 - 1603	Tudor Britain
1603 - 1714	Stuart Britain
1714 - 1837	Georgian Britain
1837 - 1901	Victorian Britain
1901 - 1910	Edwardian Britain

The five ways a historian can measure significance

- Did the person or event **matter to the people at the time?**
- Did the person or event **affect a large number or a small but important group of people?**
- Did the person or event **cause change** and if so, **how great** was the change?
- Was the change **long lasting or short term?**
- Is the person or event **still seen as important** today?

Interpretations are versions of history. Authors, film makers, and museum designers are all producers of interpretations. There are different interpretations of the same event or person.

Learning Cycle 1



Next

Try and write out the key definitions or facts that you need to know

Now

Uncover the section of your knowledge organiser and check how correct you were

Finally

Correct anything that you wrote down that was incorrect

Belong Believe Be Proud

Look, cover Mind Map, check, Correct

First

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Then

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Learning Cycle 1



Next

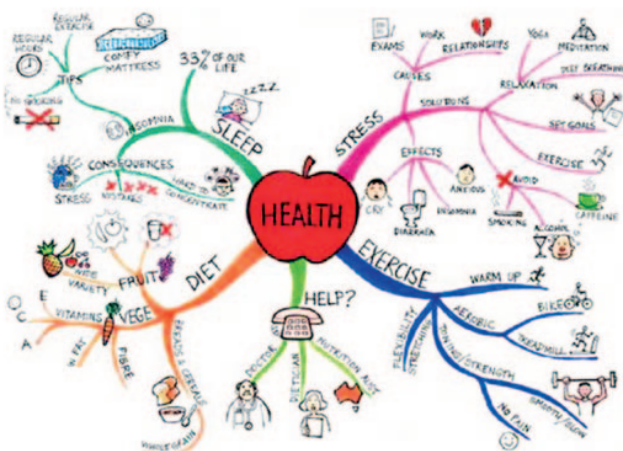
Create a mind map that maps out everything from your knowledge organiser using keywords, colour and images

Now

Uncover the section of your knowledge organiser and check how correct you were

Finally

Correct anything that you wrote down that was incorrect



Belong Believe Be Proud



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Learning Cycle 1

Kings	Play	Chess	On	Fine	Glass	Sets
K	P	C	F	K	G	S
I	H	L	A	I	E	P
N	Y	A	M	N	N	E
G	L	S	I	G	G	C
D	U	S	L	D	S	E
O	M		Y	O		S
M				M		

Next

Transform the information on the knowledge organiser into either a mnemonic or series of images

Now

Uncover the section of your knowledge organiser and check how correct you were

Finally

Correct anything that you wrote down that was incorrect

Belong Believe Be Proud

THE PRIORY LEARNING TRUST

7

Safeguarding

Speaking to people you trust - friends, family and teachers or support staff at school

Art therapy/ reading

Eating well

Exercising - doesn't have to be at the gym, a walk on the beach? After school club

Social media detox - or stay away from the ones that give you the most anxiety body image - instagram?

Listening to music

Watch your favourite film or tv programme

Self care pamper - facemask?

Spend time with your pets

Try a new hobby or skill?

Organise your time

Useful Numbers

Samaritans - To talk about anything that is upsetting you
116 123

Mindline Somerset - **01823 276 892**

National Suicide Prevention Helpline UK - Offers a supportive listening service to anyone with thoughts of suicide. **0800 689 5652**

Text "**SHOUT**" to **85258** to contact the **Shout Crisis Text Line**

Mind provides confidential mental health information services **0300 123 3393**

The Mix provides judgement-free information and support to young people aged 13-25 on a range of issues **0808 808 4994**

FRANK (National Drugs Helpline) - National drugs helpline offering general advice and information. **0300 123 6600**

In Charley's Memory is a charity that offers one-to-one counselling for young people aged 11-25 in North Somerset and Somerset. **01278 557490**

Young Somerset is the largest youth work charity in Somerset and our mission is to put young people first. **01278 722100**

Safeguarding

Around the school there are posters with members of **TKASA Safeguarding Team**.

If you are worried about something or someone please contact one of the **Safeguarding Team**

Belong Believe Be Proud

Year 9: Cycle one in English will focus on exploring and enjoying the Classics: Greek and Roman mythology and literature. You will be exploring some key stories like The Iliad, The Trojan Wars and Greek Tragedy. Classics will help you to understand allusions in later Literature. You will also expand your knowledge of etymology (the origins of words) to aid your spelling and improve your vocabulary.

Quiz One: key descriptive writing techniques. SOAPAIMS

Simile	Comparison using 'like' or 'as'
Onomatopoeia	Words that look like they sound
Alliteration	2+ words that start with the same letter
Personification	Giving inanimate objects human characteristics
Adjectives	Words describing a noun
Imagery	Creating a visual image with words
Metaphor	Direct comparison
Senses	See, hear, touch, taste, smell.

Using these 'ingredients' in your writing will help to make your descriptive writing more engaging for the reader.

Learn these descriptive techniques so that you can improve your writing.

Quiz 2: Revise the sentence starters for this important writing structure.

<u>P</u> Point	The writer uses language to create the effect that...
<u>E</u> Evidence	"Short QUOTATION."
<u>T</u> Technique	The powerful _____ is an example of this.
<u>E</u> Explain	This shows This also shows Another thing it shows
<u>R</u> Reflect	Reflect: The writer is trying to teach us that...

Quiz 3: Tier 3 vocabulary. Learn to spell and to use these words in a sentence

Hubris	Excessive pride or defiance leading to the character's downfall
Tragedy	Where the main character is brought to ruin, often through their tragic flaw.
Pathos	An experience creating feelings of sympathy, pity and sorrow.
Tragic hero	A character with good qualities who is eventually has tragic downfall.
Catharsis	Emotional state (usually pity or fear) felt by the audience
Hamartia	The hero's fatal flaw. (jealousy/ambition)
Moral	From "moralis" meaning lesson learned. The moral is the lesson of the story.

QUIZ 3 Part 2: Learn the steps to the super sentence and write your own example.

Step 1: 3 words or ideas.

Step 2: Add a colon :

Step 3: Explain your words

Step 4: Add a simile

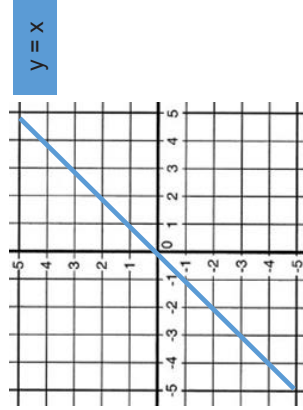
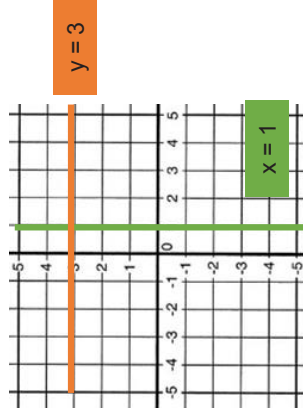
Example super sentence.

Buildings, cars, trains: these handmade achievements lie discarded on the broken ground like autumnal leaves when the north winds blow.

Cycle 1 in **Maths** initially looks at the straight graphs and how to draw them when given the equation. We then move on and look at how we can form linear equations from words and solve them to find unknowns. Later in the cycle we investigate 3D shapes, looking at isometric drawing and properties of 3D shapes.

GRAPH – KEY WORDS AND DEFINITIONS

horizontal	lines that are parallel to the horizon
vertical	lines at right angles to the horizon
graph	a visual diagram used to represent statistical information or functions and equations where two lines cross
intercept	
function	a mathematical relationship from a set of inputs to a set of outputs
gradient	gradient is the steepness and direction of a line as read from left to right
parallel	lines that are equidistant apart, the same distance apart
perpendicular	two lines that meet at a 90° angle
reciprocal	A number that when multiplied by another number results in 1



Topic 1: Straight line graphs

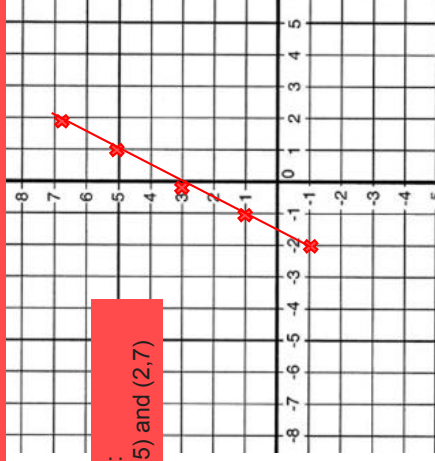
When you are need to draw a graph of an equation it is best to draw a table of values, this is so that you can get some **coordinates** to plot.

X	-2	-1	0	1	2
Y	-1	1	3	5	7

Substitute values into the expression $y = 2x + 3$

If $x = 2$, $(2 \times 2) + 3 = 7$
 If $x = 1$, $(2 \times 1) + 3 = 5$
 If $x = 0$, $(2 \times 0) + 3 = 3$
 If $x = -1$, $(2 \times -1) + 3 = 1$
 If $x = -2$, $(2 \times -2) + 3 = -1$

Coordinates to plot are:
 $(-2, -1)$ $(-1, 1)$ $(0, 3)$ $(1, 5)$ and $(2, 7)$



Draw the **graph** of $y = 2x + 3$, for values of x between -2 and 2

Topic 2:

Forming and solving linear equations

Inequalities and **equations** are solved exactly the same way, you just need to remember to treat the inequality ($<$ $>$) symbols the same way that you would the equals ($=$) symbol.

In order to solve a **linear equation** or a **simple equation** we need to work out the value of the unknown variable by doing the opposite of what the operation tells us to do.

EQUATION – KEY WORDS AND DEFINITIONS

equation	a mathematical statement containing an equals sign, to show that two expressions are equal
unknown	a variable that represents a quantity that is not known
solve	work out the answer to the problem
coefficient	a number which multiplies a variable, for example $3x$, the number 3 is the coefficient
substitute	replacing numbers with letters and vice versa
inequality	a way of comparing values, for example, $3 > 2$ means that 3 is greater than 2

Solving equations with an unknown on one side

Solve:

$$3x + 6 = 18$$

$$- 6$$

$$- 6$$

Because we have + 6 in the equation, we need to $- 6$

$$3x = 12$$

$$\div 3$$

$$\div 3$$

Because we have 3 lots of x , we need to divide by 3, to find the value of 1 of the unknowns (x)

$$x = 4$$

Solving equations with an unknown on both sides

Solve:

$$5x + 6 = 2x + 9$$

$$- 2x$$

$$- 2x$$

$$3x + 6 = 9$$

$$- 6$$

$$- 6$$

$$3x = 3$$

$$\div 3$$

$$\div 3$$

$$x = 1$$

When solving a **linear equation** with an unknown on both sides, look for the side with the least number of **unknowns** on first and combine them, in this case $2x$ is smaller than $5x$.

Topic 3: Testing conjectures

When you are testing conjectures it is good to remind yourself of the key different types of numbers; **odd, even, prime, factors** and **multiples**.

The **factors** of number are the numbers that will multiply to form that number, for example, the factors of 24 are 1, 2, 3, 4, 6, 8, 12 and 24, as $1 \times 24 = 24$, $2 \times 12 = 24$, $3 \times 8 = 24$ and $4 \times 6 = 24$.

The **multiples** of a number are the numbers that are in that multiplication table, for example the multiples of 5 are 5, 10, 15, 20, 25... because $1 \times 5 = 5$, $2 \times 5 = 10$, $3 \times 5 = 15$, $4 \times 5 = 20$, $5 \times 5 = 25$...

TESTING CONJECTURES – KEY WORDS AND DEFINITIONS

show that...	all working needed to get to a given answer or complete a diagram to show given information
prove...	more formal than 'show', all steps must be present
conjecture	a statement that is assumed correct without significant proof
factorise	finding the factors of an expression, the opposite to expanding brackets
expand	remove brackets
binomial	a polynomial that contains two unlike terms

Topic 4: Expanding Brackets

There are several different methods you could use to **expand** a bracket, look at the different methods presented here and see which one you find most helpful, no method is better than another.

METHOD 3: ALGEBRA TILES

Expand and simplify $(x + 2)(x + 3)$

METHOD 1: GRID

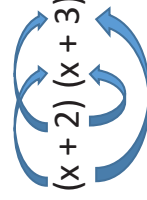
Expand and simplify $(x + 2)(x + 3)$

	x	$+ 2$
x	x^2	$2x$
$+ 3$	$3x$	$+ 6$

$$x^2 + 5x + 6$$

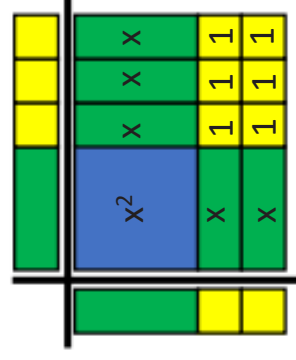
METHOD 2: FOIL

Expand and simplify $(x + 2)(x + 3)$



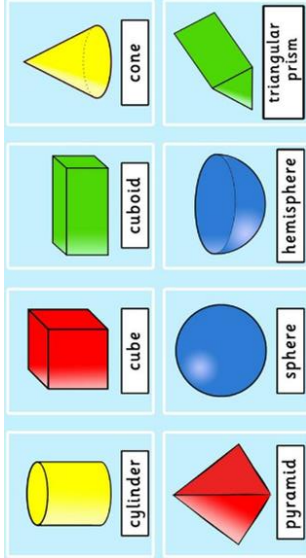
First: $x \times x = x^2$
 Outside: $x \times 3 = 3x$
 Inside: $2 \times x = 2x$
 Last: $2 \times 3 = 6$

$$x^2 + 5x + 6$$



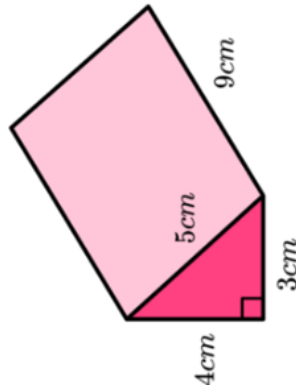
$$x^2 + 5x + 6$$

Topic 5:
3D Shapes



3D SHAPES – KEY WORDS AND DEFINITIONS	
face	the flat surface of a 3D shape
edge	the side of a 3D shape, where two faces meet
vertex	a point(s) where the edges of a solid figure meet
prism	a prism is a 3D shape with the same cross-section all the way along its length
net	a flat shape which can be folded up into a 3D solid
plan	a technical drawing showing the details of an object viewed from directly above
elevation	the view of a 3D shape from a given direction
area	a measure of the total surface of a 2D shape
surface area	the total area of each face of a 3D object
circumference	the distance around the outside of the circle (perimeter)
volume	the amount of space occupied by an 3D object

VOLUME:
To find the volume of a prism, you need to find the area of the cross-section (the face that runs through the shape) and multiply it by the length.



To find the **volume** of this prism, you need to find the area of the triangle and multiply by the length.

$$4 \times 3 = 12$$

$$12 \div 2 = 6$$

$$6 \times 9 = 54 \text{ cm}^3$$

Don't forget units for volume are cm^3 , mm^3 etc.

Face	Area
Front	$\frac{1}{2} \times 3 \times 4 = 6$
Back	6
Bottom	$3 \times 9 = 27$
Left side	$4 \times 9 = 36$
Right side	$5 \times 9 = 45$

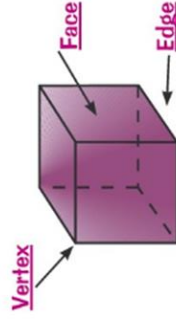
Total surface area = $6 + 6 + 27 + 36 + 45$
= 120cm^2

SURFACE AREA:

To find the surface area of a 3D solid, you need to find the area of all the faces and add them together.

For the triangular prism above there are 5 faces – see the table opposite for each of these areas.

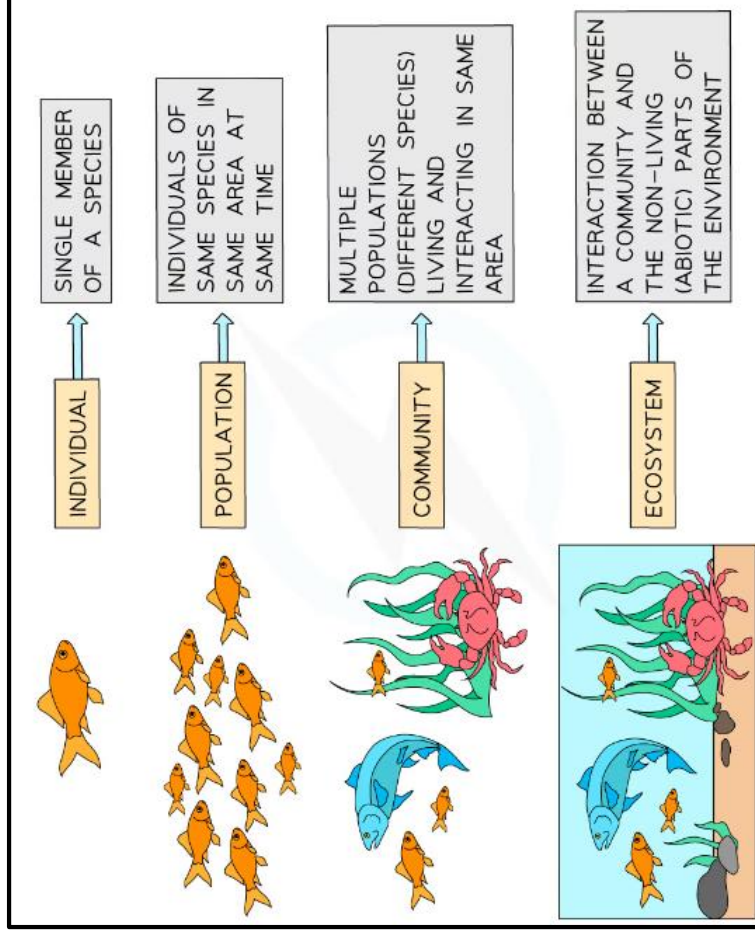
A cube has:
6 Faces
12 Edges
8 Vertices



Don't forget units for surface area are cm^2 , mm^2 etc.

Learning cycle 1 in Science will focus on exploring Biodiversity (Biology) and How We See (Physics).

Individual organism: a single member of a species
Population: a number of individuals of the same species living in the same area at the same time
Community: multiple populations (of different species) living and interacting in the same area
Ecosystem: the interaction between a community (the living, biotic part) and the non-living (abiotic) parts of the environment
Biodiversity: the range of animals and plants in a given area
Sustainable: An activity which does not consume or destroy resources or the environment.



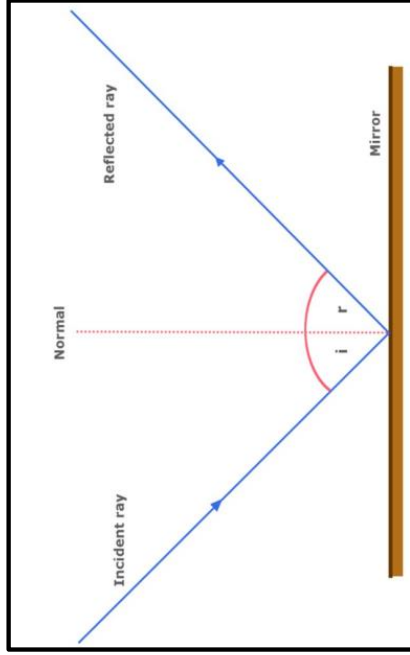
Biodiversity (Biology)

Humans use the Earth's **natural resources** for a number of purposes, including:

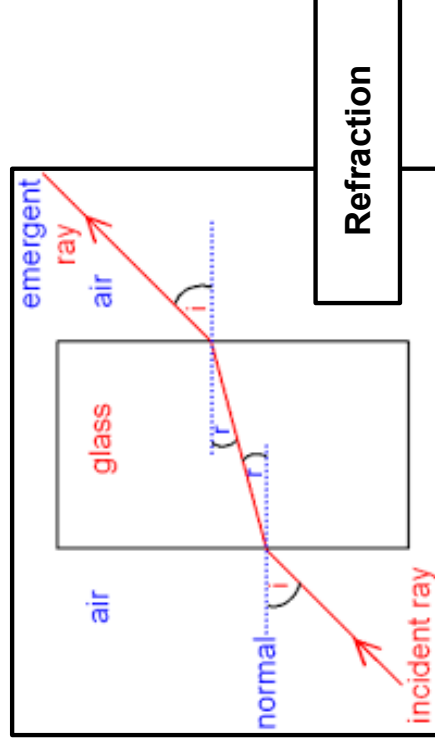
- energy and fuels for warmth
- building materials for shelter
- food through farming
- fuels for transport
- materials for clothing

The human population is growing very quickly and many people argue that humans are using up the Earth's finite resources at a rate which is too fast and therefore **unsustainable**.

How We See (Physics)



The angle of incidence = The angle of reflection



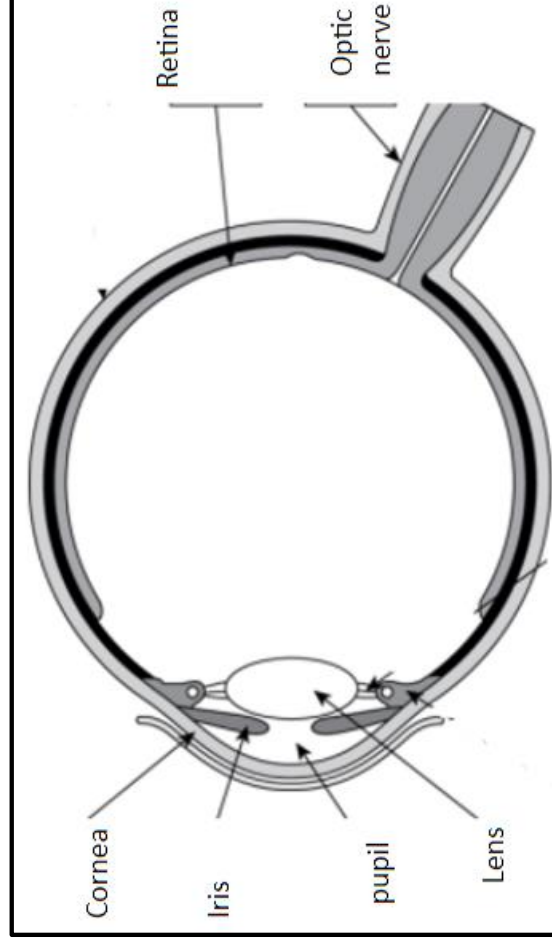
Normal: An imaginary but useful line at right angles to the boundary between air/glass. All angles are measured to this line.

Incident ray: Light ray moving towards a surface or boundary.

Angle of incidence: Angle between the normal and the incident ray

Angle of reflection: The angle between the reflected ray and the normal (the imaginary line drawn at 90 degrees to the reflecting surface)

Refraction: Process by which a wave changes speed and sometimes direction upon entering a denser or less dense medium, eg a light ray changes direction when refracted by a lens.



Cycle 1 Knowledge Organiser: The Russian Revolutions

Cycle 1 Year 9 History will focus on the big question of **why there were two revolutions in Russia in 1917**. This will include an enquiry into why it took so long to find out what really happened to the Russian royal family.

Key words and definitions

abdication	when a ruler such as Tsar Nicholas II chooses to give up power
assassinate	to murder a leader, such as a king, emperor or political leader
Bolsheviks	Russian communists
communism	a political idea based on everyone being equal;
duma	Russian parliament
heir	The person who is to take the throne on the death of the monarch
haemophilia	disease where the blood does not clot
revolution	overthrowing a government by force or making great change
state	a nation or its government
tsar	emperor of Russia
autocrat	a monarch with total power
tsarina	Empress of Russia
Peace, Bread, Land	Lenin's most popular slogan
Coup d'état	A take-over of power
Winter Palace	Home of the tsar and later headquarters of the Provisional Government.

TIER 2 Vocabulary

conceivable = something which is possible to imagine or think
concur = to agree with something
debatable = something which can be discussed or argued about
preclude = to prevent something or make it impossible

Why were there two revolutions in Russia in 1917?

Chronology of Russian history

1894	Tsar Alexander III died; his son Nicholas became Tsar Nicholas II Nicholas married Alexandra of Hesse, a German princess.
1904	Alexei is born but is discovered to have Haemophilia. War with Japan
1905	Revolution – Tsar Nicholas has to set up a duma. Rasputin was introduced to the royal family
1914	The Great War (WW1) began.
1915	Tsar Nicholas took personal command of the Russian army.
1916	Rasputin was murdered.
1917	Feb/March: Revolution – Tsar Nicholas abdicated; Provisional Govt. April: Lenin returned to Russia promising 'Peace, Bread, Land' November: Revolution – Bolsheviks take power.
1918	March: Bolsheviks make peace with Germany July: Tsar Nicholas and his family disappear
1920	Anna Anderson appears in Berlin claiming to be a daughter of the tsar.
1991	End of Communist Russia; bones of the Romanovs discovered, and DNA testing confirmed their identity.
2018	All Romanov bones accounted for – mystery ended.

1. Tsar Nicholas was incompetent.
2. Tsar Nicholas refused to give any of his power away.
3. Nicholas was a useless war leader and commander of his troops.
4. During the war, Nicholas left his wife to run the country. She was hated because she was German. She was influenced by Rasputin.

Political problems



Economic problems

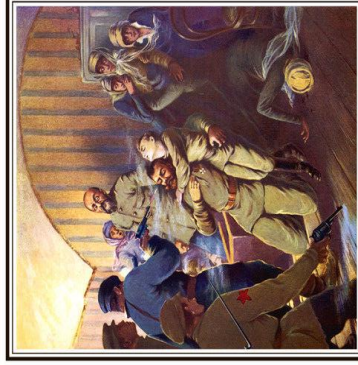


Impact of World War I

1. The Russian army kept losing battles.
2. Tsar Nicholas's leadership was dreadful. He was unable to make a decision, and ones he did make were often based on a vision which Rasputin had written to him about.
3. There were bread riots in early 1917.
4. Protests grew and revolutionary groups began to become popular.
5. Nicholas was forced to abdicate in March 1917.

1. Russia was not economically strong. The war put too much pressure on the Russian economy.
2. Russia's railway system was poor. Supplies for the war and for soldiers did not reach their destination.
3. There were food shortages because peasants were forced to join the army.

Why did it take so long to find out what happened to the Russian royal family?



No Grave, No Body Yet Discovered.
An investigator found bullet holes in a room in Ekaterinburg, said to have been occupied by Nicholas and his son. There were stains, as of blood, on the floor. But the bullet holes were too high on the wall to have resulted from shots fired at short persons standing or sitting. And the body has not been found. Nor does anyone seem to know where the grave was made. Until the grave is found and the body produced, or until Nicholas appears and proves his identity, there always will be doubt as to his fate. What has happened to his wife, two daughters and son is an almost equally great mystery.

A description of what happened on 17th July, 1918

By the beginning of July 1918 it was clear that **Ekaterinburg** was going to fall to the **Whites**. The killing was planned under the new commandant of the House of Special Purpose, **Yakov Yurovsky**, who decided to recruit a squad to murder the royals all together in one session and then burn the bodies and bury them in the woods nearby. Early on that July morning, the bleary-eyed Romanovs and their loyal servants stood in the **cellar** as the heavily armed murder squad filed into the room. Yurovsky suddenly read out a death sentence. Then the men used their weapons. Each was meant to fire at a different family member, but many of them secretly wished to avoid shooting the girls, so they **all aimed at the loathed Nicholas and Alexandra**, killing them almost instantly. The firing was wild; the killers managed to wound one another as the room filled with swirling dust and smoke and screams. When the first volley was done, most of the family was still alive. The mayhem lasted 20 agonising minutes. The bodies were hidden and so began a mystery which would last until 2018!

Cycle 1 Knowledge Organiser

Cycle 1 in Yr 9 Geography will focus on the topic of cities. We will look at megacities first and then study Kampala, the capital city of Uganda.

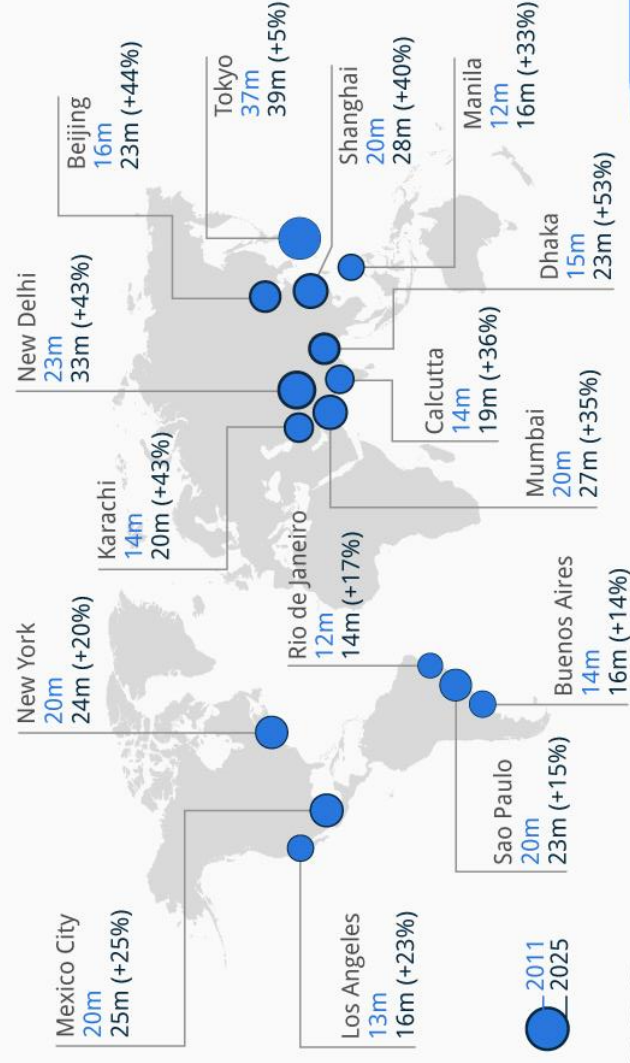
Key words and definitions	
Megacity	City with a population of 10+ million
Natural increase	Birth rate – death rate
Rural urban migration	People moving from the countryside to the cities
LIC	Low income country
Economic opportunity	Chance to earn money
Resources	Things we need to live
Services	When someone does something for someone else
Sanitation	Provision of toilets and disposal of wastewater
Absolute poverty	People are too poor to meet their basic needs
Air pollution	When air has high levels of particles & other pollutants
Traffic congestion	Roads are blocked by traffic jams
Malaria	Disease spread by mosquitoes which kills a child every 30 seconds globally
Dysentery	Disease causing diarrhoea which kills 600 000 people globally each year
BRT	Bus rapid transit

Topic 1: Megacities

Learn the names and locations of the 15 top megacities. Which 3 were the largest in 2011? Which 3 are predicted to grow most rapidly?

The World's Megacities Are Set for Major Growth

Population growth of the world's top 15 megacities (millions, 2011-2025)



* including metropolitan areas
 @StatistaCharts Source: UN Population Division, World Economic Forum

statista

Topic 2: Kampala

Description	Capital city of Uganda, a LIC in East Africa - Population of 1.5 million - 60+% live in slums
Importance	<ul style="list-style-type: none"> ● Regionally - nearest city for people in Central region - hospitals, schools etc ● Nationally- organisations like Makerere University serve the whole of Uganda ● Internationally - The East African Development Bank has its HQ in Kampala
Causes of growth	<ul style="list-style-type: none"> ● Natural increase - women in Uganda have an average of 5.71 children ● Migration - rural urban migration means cities are growing by 5.3% a year
Opportunities created by growth	<ul style="list-style-type: none"> ● Access to services (Health & education) - i.e Makerere University, International Hospital ● Access to resources (water & energy) - only 32% of people in rural areas have access to basic water supplies, but 79% in cities do. ● Economic - large employers include Airtel and Uganda Breweries
Challenges created by growth	<ul style="list-style-type: none"> ● Slums & squatter settlements - i.e. Kivulu ● Providing clean water, sanitation & energy - water costs 3x more in slums than in richer areas, 'flying toilets' = plastic bags ● Providing access to services - limited access to medical care - many children suffer malaria & dysentery ● Reducing unemployment & crime - violent crime is fuelled by poverty and domestic violence ● Managing environmental issues (waste, pollution, congestion)- cooking fires and burning rubbish cause serious air pollution.
Bus Rapid Transit BRT	<ul style="list-style-type: none"> ● Needed to tackle traffic congestion and air pollution and so that people who live in slums can travel to find work and access services ● It is planned to include 133 x 150 seat buses, 25km new bus lanes and automatic ticketing ● It will cost US\$1.18 billion and be part funded by a World Bank loan which will need to be repaid. ● The Kampala BRT was due to open in 2018 but this opening has been delayed.



Year 9 Cycle 1 Knowledge Organiser

Cycle 1 in RS will focus on: An introduction to Philosophy so that you can begin to understand the theories behind the big questions of life.

Key words and definitions

Philosophy	The study of knowledge, reality & existence
Design argument	The argument that an intelligent creator exists based on perceived evidence of the design of the natural world.
First cause argument	The argument that God exists based on the idea that everything has a cause.
Prime mover	God initiates all change and motion.
Analogy	A comparison between one thing and another.
Evolution	The development of organisms over time to adapt to their environments.
Big Bang theory	A theory about how the universe began.
Problem of Evil	Can God be loving if evil exists in the world?
Genesis	The first book of the Bible.
Atheist	Someone who disbelieves, or lacks a belief in a God or gods.
Agnostic	The belief that whether a God exists cannot be proved or disproved.

In KS3 RS you will study Philosophy and Ethics and learn how certain concepts can be applied in society today, including:

Philosophy
Is there a God?

Philosophy
What actions can be considered good?

Ethics
Is human life sacred?

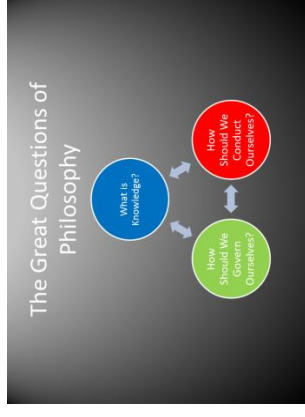
Ethics
Can ethical theories be applied to modern society?

Topic 1 Studying Philosophy

Asking questions are important in the study of Philosophy and Ethics. Sometimes, questions don't always have answers but they are still worthy of discussion.

Who
Why
Where
When
How

What is Philosophy?
past present future



There are **big questions** which we will consider and discuss in RS, such as:

1. **Why are we here?**
2. **Is there a God?**
3. **Why is there suffering in the world is God is all-loving?**
4. **Can the death penalty be justified?**
5. **What is a good action?**
6. **Is euthanasia wrong?**
7. **Do we have free will?**
8. **Is war ever acceptable?**

Belong Believe Be Proud

Philosophy

The Design Argument

This theory argues that there must be an **intelligent creator** as we can observe, using our senses and our reason, that something must have **designed** the natural world.

Aquinas argued that the natural world has **order and purpose** so everything must have been designed.

Aquinas gives an example of an arrow reaching a target. The arrow did not reach the target by itself. An archer must have aimed and fired the arrow.

Aquinas concludes that the universe must have had a designer as nature has order and purpose.

William Paley believed that the world is so complex that it must have purpose. Paley used a **watch** to illustrate his point. If he came across a mechanical watch on the ground, he would assume that its many **complex parts** fitted together for a **purpose** and that it had not come into existence by chance. There must be a **watchmaker**.

There are different beliefs about the cause of the universe.

1. Most religions offer an explanation about how the universe was created and this usually involves a **divine creator**. Religions tend to focus on why the universe was created.
2. **Scientific theories** have been proposed to try to offer an explanation as to how the universe was created. Scientific theories avoid trying to explain **why** the universe was created and instead focus on **how** the universe was created.
3. Many **scholars** have put forward theories about how and why the universe was created. Some scholars use only religion to support their argument, whilst other scholars combine both religion and science to try to explain how and why the universe was created.

The First Cause Argument

This argument is based on the idea that **everything has a cause**. The universe must have a cause and that cause is God.

Things stay the same unless some force acts upon them to make them move or change. An **'unmoved mover'** (God) must have set things into motion. Therefore, **God is the cause** of the universe.

Aquinas came to this conclusion because humans are contingent; we develop from something to exist i.e. parents. God must be the cause of everything's existence.

The Problem of Evil

How can God be all loving if evil exists? How can God be all-powerful if he does not rid evil? Either, God isn't all loving and powerful or the existence of God can be questioned.

What are the different religious viewpoints about creation?

Christianity	God made the universe in 6 days and rested on the 7 th .
Buddhism	Buddhists don't tend to focus on questions they can't answer. Buddhists are more concerned with reducing suffering in the here and now.
Judaism	G-d made the universe in 6 days and rested on the 7 th .
Islam	There is no single story of creation for Muslims. All Muslims believe God created the universe.

Evolution

Charles Darwin's research focused on how species **adapt to its habitat**. Darwin concluded that every species is in competition to survive, he called this 'Survival of the Fittest'. Species who evolve and adapt to their environment are likely to survive and those that don't adapt are likely to die. Darwin called this 'Natural Selection'.

Evolution rejects the design argument, that God has designed the world, and instead proposes that **humans evolve** from animals, which rejects the idea that God created humans.

The Big Bang Theory

The Big Bang Theory argues that all of the matter that is within the universe originates from the initial expansion of space from a single point in time – this was the Big Bang.

Religious believers can accept the Big Bang theory as they may believe God caused the Big Bang to occur which then created the universe.

Non-religious people might accept the Big Bang theory as the leading argument for how the universe began as the theory highlights laws of physics and laws of quantum mechanics, which led the universe to develop in the way in which it did.

LC1 is an introductory module in which we will revise family and activity related vocabulary. We will be looking at the past, present and future tenses.

Subject Pronouns	Singular je = I tu = you (informal) il/elle = he/she on = we	Plural nous = we vous = you (formal) ils = they (masc) elles = they (fem)
Nouns	identify places, people and things. Nouns have <i>gender</i> e.g. le collège (school) la femme (woman) les bonbons (sweets)	
Adjectives	describe nouns. They have to <i>agree</i> with the noun: e.g. le pantalon bleu → les pantalons bleus la chemise bleue → les chemises bleues	
Verbs	are doing words, e.g. il joue au foot = he plays football. Verbs need to be put into a <i>tense</i> (see below)	
Adverbs	add more detail to a sentence e.g. très (very), vraiment (really), souvent (often), quelquefois (sometimes)	
Infinitives	are the "to" form of the verb. French has three kinds: -ER (e.g. jouer) -IR (e.g. finir) and -RE (e.g. faire)	

Les adjectifs (adjectives)

drôle funny
pénible annoying
timide shy
égoïste selfish
aimable likeable
sensible sensitive
agaçante annoying
méchante nasty
charmante charming
impolie impolite/rude
arrogante arrogant
bavarde chatty
paresseux (se) lazy
généreux/se generous
sérieux/se serious
sportif/ve sporty
compréhensif/ve understanding
travailleur/se hard-working
têtu(e) stubborn

Relationships

je m'entends bien avec...
I get on well with...
je me dispute avec...
I argue with...
je me chamaille avec...
I bicker with...
je me fâche contre...
I get angry with...
je m'amuse avec...
I have fun with...
je m'intéresse à...
I'm interested in...
je m'occupe de...
I look after...
Mes parents sont...
My parents are...
mariés married
séparés separated
divorcés divorced

Adverbs of frequency

toujours always
fréquemment frequently
jamais never
souvent often
rarement rarely
quelquefois sometimes
parfois sometimes
d'habitude usually

Opinion phrases

Je crois que... *I think that*
Je pense que... *I think that...*
J'imagine que... *I imagine that...*
Je suppose que... *I presume that...*
Je dirais que... *I would say that...*
Il me semble que... *It seems to me that...*
D'une part... *On the one hand...*
D'autre part... *On the other hand...*

Time phrases

la semaine dernière last week
l'année dernière last year
avant hier the day before yesterday
hier yesterday
aujourd'hui today
demain tomorrow
le lendemain the day after
la semaine prochaine next week
l'année prochaine next year

MFL - FRENCH

Translation task →

Choose to translate into English (easy) or French (harder).

LOOK at one line of the text at a time

COVER the language you're translating into

WRITE your translation

CHECK and correct mistakes in purple pen

KEY WORD: ARTICULATE

To articulate means to communicate fluently, so try to include extra details such as intensifiers (e.g. really) and connectives (e.g. and/or), or using more varied words. e.g. ça a l'air intéressant (it seems interesting)

Être (to be)

je suis I am
je ne suis pas I am not
il/elle est he/she is
il n'est pas he is not
on est we are
on n'est pas we are not
ils/elles sont they (m/f) are
ils ne sont pas they are not

Avoir (to have)

j'ai I have
je n'ai pas I have not
il/elle a he/she has
il n'a pas he doesn't have
on a we have
on n'a pas we don't have
ils/elles ont they (m/f) have
ils n'ont pas they don't have

Dans ma famille il y a cinq personnes:	In my family there are five people:
mon père, ma mère, mes deux frères et moi.	my dad, my mum, my two brothers and me.
Mon père a les cheveux bouclés et noirs	My dad has curly black hair
et il est très grand – il mesure 2,10m!	and he is very tall – he is 2.10m tall!
Ma mère est petite et mince	My mum is short and thin
et elle porte des lunettes.	and she wears glasses.
Mon petit frère a des boutons et je me dispute souvent avec lui.	My little brother has spots and I often argue with him.
Mon grand-père est vieux et il a une barbe blanche	My grandfather is old and he has a white beard
et je m'entends très bien avec lui.	and I get on very well with him.
Il semble / Il a l'air sensible	He seems sensitive
et je peux parler de tout avec lui	and I can talk about everything with him
parce qu'on a les mêmes centres d'intérêt.	because we have the same interests.
Quand j'étais jeune, je parlais rarement	When I was little, I rarely spoke
mais maintenant je suis super bavard!	but now I'm super chatty!

Present tense e.g. je joue	I play, I am playing, I do play
Perfect tense e.g. j'ai joué	I have played, I played
Imperfect tense e.g. je jouais	I used to play, I was playing
Future tense e.g. je jouerai	I will play, I shall play
Near future tense e.g. je vais jouer	I am going to play
Conditional mood e.g. je voudrais jouer	I would like to play

mais	but	however
et	and	then
aussi	also	after that
avec	with	first of all
quand	when	next
enfin	finally	to finish

Indirect pronouns	
avec moi	with me
avec lui	with him
avec elle	with her

All your LCI vocab is also on Quizlet:



By the end of this special Y9 study course, you'll be able to introduce yourself in Spanish, describe your likes and dislikes. It's an ideal jump-start for GCSE!

Introducciones (Introductions)

¡Hola! / Buenos días *Hii! / Good morning*
 Buenas tardes *Good afternoon*
 Buenas noches *Good night*
 Adiós *Goodbye*
 Hasta luego *See you later*
 ¿Qué tal? *How are you?*
 (Muy) bien *(Very) well*
 Más o menos *So-so*
 (Muy) mal / Fatal *(Very) bad / Awful*
 Por favor / Gracias *Please / Thank you*

Mi familia (My family)

en mi familia hay... *in my family there is/are...*
 mi madre/padre *my mum/dad*
 mis padres *my parents*
 mis **[dos]** madres/padres *my [two] mums/dads*
 mi(s) hermano(s)/hermana(s) *my brother(s)/sister(s)*
 mi hermane *my (non-binary) sibling*
 mi tío/tía *my uncle/aunt*
 mi **primo/prima**/prime *my (m / f / n-b) cousin*
 mi abuelo/abuela *my granddad/grandma*

A ah	B bay	C thay	D day	E ay
F effay	G hay	H atchay	I ee	J hota
K ka	L ellay	M emmay	N ennay	O oh
P pay	Q koo	R erray	S essay	T tay
U oo	V oovay	W oovaydoblay	X ek-ees	Y ee griayga
Z theta	Ñ enyay			

Las mascotas (Pets)

Tengo... *I have...*
 No tengo... *I don't have...*
 un perro *a dog*
 un gato *a cat*
 un conejo *a rabbit*
 un hámster *a hamster*
 un ratón *a rat*
 una tortuga *a tortoise*
 una araña *a spider*
 una serpiente *a snake*
 unos peces *some fish*

Mi personalidad (My personality)

soy / no soy... *I'm / I'm not...*
 simpático/a *nice*
 divertido/a *funny*
 estupendo/a *brilliant*
 listo/a *clever*
 tímido/a *shy*
 serio/a *serious*
 tonto/a *silly*
 hetero/a *straight*
 gay/lesbiana *gay/lesbian*
 bisexual *bisexual*



Los meses (Months)

enero *January*
 febrero *February*
 marzo *March*
 abril *April*
 mayo *May*
 junio *June*
 julio *July*
 agosto *August*
 septiembre *September*
 octubre *October*
 noviembre *November*
 diciembre *December*

Descripciones físicas

Tengo... *I have...*
 Tiene... *(s)he has/they have...*
 Tienen... *they (plural) have...*
 los ojos azules *blue eyes*
 los ojos marrones *brown eyes*
 los ojos grises *grey eyes*
 los ojos verdes *green eyes*
 el pelo negro *black hair*
 el pelo castaño *brown hair*
 el pelo rubio *blond hair*

Las asignaturas (Subjects)

el español / francés *Spanish/French*
 el inglés *English*
 el deporte/arte *PE/Art*
 la geografía *Geography*
 la historia/música *History/Music*
 la informática *Computing*
 las ciencias *Science*
 las matemáticas *Maths*

MFL - SPANISH

Lo siento, (Sorry,)	he olvidado (I've forgotten)	mi mis	(my) (singular) (my) (plural)	lápiz (m) (pencil) bolígrafo (m) (pen) regla (f) (ruler) cosas (pl) (things)
¿Puedo (Can I)	no tengo (I don't have)	mi cuaderno (m) (my exercise book) diccionario (m) (a dictionary)		
	ir a los servicios (go to the toilet)	por favor? (please?)		
¿Puede (Can you)	usar (borrow)	un lápiz un bolígrafo una regla		
	hablar con Usted (talk to you)			
	ayudarme (help me)			
	abrir (open)	la puerta (the door)		
	cerrar (close)	las ventanas (the windows)		





soy	Key verbs I am
no soy	I am not
tengo	I have
no tengo	I don't have
¿Cuántos años tienes?	How old are you?
tengo ... años	I'm ... years old
me llamo...	My name is...
hay	there is/are
no hay	there is/are not

-AR verbs in the present tense
estudiar to study
estudio I study
estudias you study
estudia (s)he studies / they study

Me gusta I like No me gusta I don't like Me encanta I love Odio I hate Prefiero I prefer A ___ le gusta ___ likes A ___ no le gusta ___ doesn't like	<p>jugar al fútbol to play football</p> <p>estudiar el español to study Spanish</p> <p>ir a los Estados Unidos to go to the USA</p> <p>hacer mis deberes to do my homework</p> <p>cenar al restaurante to eat at a restaurant</p> <p>encontrar mis amigos to meet my friends</p>	<p>porque because</p> <p>pero but</p> <p>sin embargo however</p>	<p>es it is</p> <p>no es it isn't</p>	<p>fácil easy</p> <p>guay cool</p> <p>difícil difficult</p> <p>aburrido/a boring</p> <p>interesante</p> <p>genial great</p> <p>divertido fun(ny)</p> <p>inútil useless</p>
<p>Mañana Tomorrow</p> <p>El fin de semana At the weekend</p> <p>El año próximo Next year</p>	<p>voy a (I'm going)</p> <p>vas a (you're going)</p> <p>va a (he/she's going / they're going)</p> <p>vamos a (we're going)</p> <p>vais a (you're going)</p> <p>van a (they're going)</p>			

Belong Believe Be Proud

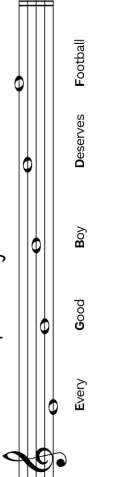
Music

Rhythm	
	1 crotchet beat (1 beat) note
	X2 quaver (1/2 beat) notes
	X2 semi-quaver (1/4 beat) and X1 quaver (1/2 beat) notes
	X4 semi-quaver (1/4 beat) notes

Musical Elements	
Tempo	The speed of the music
Dynamics	How loud or quiet the music is
Pitch	How high or low the notes are
Rhythm	Note values, and the patterns of different notes
Meter	Time signatures - how many beats are in each bar

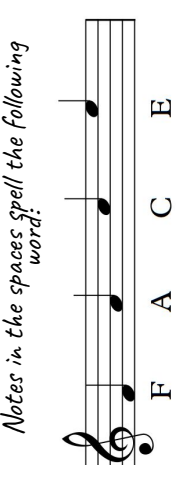
Pitch

To remember notes on the lines, use the following mnemonic:

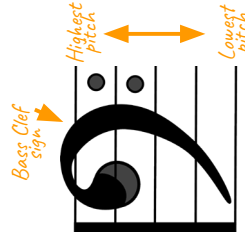


Every Good Boy Deserves Football

Notes in the spaces spell the following word:



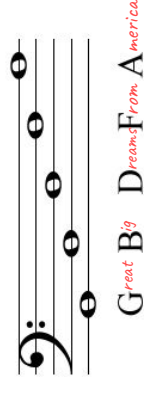
F A C E



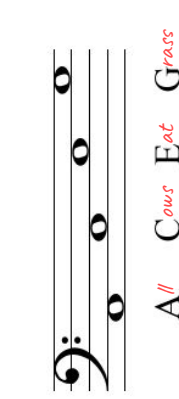
Highest pitch

Lowest pitch





Bass Clef sign



G^{reat} B^y D^{reams} F^{rom} A^{merica}



A^{ll} C^{ows} E^{at} G^{rass}

Dynamics		
Term	Symbol	Definition
Pianissimo	pp	Very quiet
Piano	p	Quiet
Forte	f	Loud
Fortissimo	ff	Very loud
Crescendo		To get gradually louder
Diminuendo		To get gradually quieter
<i>Incorporating changes in dynamics helps to make the music more interesting</i> Vocabulary Alert! Incorporating - To include something.		
Meter		
Time Signature	Beats in the bar	
4/4 	2 minim beats per bar	
3/8 	3 quaver beats per bar	

Cycle 1 in Drama will focus on: How to show status and relationships effectively.

Key word/term	Definition
Status	The power difference in the relationship between two characters. High status means you have dominance over others and low status means others are dominant over you.
Hot seating	A strategy in which a character or characters are interviewed by the rest of the group. The person being interviewed must answer the questions as their character. This is a useful way of finding out more about a character.
Proxemics	The usage of space on a stage, or how the actors/characters are placed on a stage. The distance or level between character/actors shows their relationships and feelings, and give clues of the situation or the people within the situation at that moment.
Characterisation	The act of changing voice, body language, movement, gesture and facial expressions to show your character.
Tension	Tension is a growing sense of expectation within the drama, a feeling that the story is building up towards something exciting happening. Without tension in a scene it is hard to keep the audience engaged with what is happening so the work may be flat and dull.

Spellings to learn this cycle:

Performance	Characterisation	Tension	Devising
Rehearsal	Proxemics	Status	Verbatim
Sightlines	Physicality	Relationship	Character

Drama

WHO IS MICHAEL STEWART?

How you can show the relationships between Michael and other people in his story:



Status

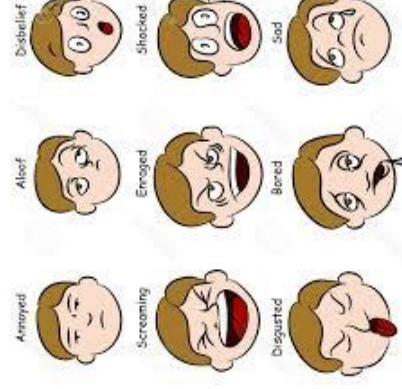
It is important to show the status between characters so that the audience understand their relationship. It can also help you to demonstrate who has control or authority in Michael's story. Status is shown through levels, body language, actions and the manner in which you speak.



Proxemics

Using proxemics will really help show the relationships Michael has with others.

The distance between characters show their relationships and feelings. If characters are standing close to each other, it shows that they have a close relationship. If characters stood far apart from each other, it could show that they had fallen out and were no longer speaking to each other. If you want to show that someone is in control, you could place a character within someone else's personal space.



Characterisation

You can use your voice, body and face to do this.

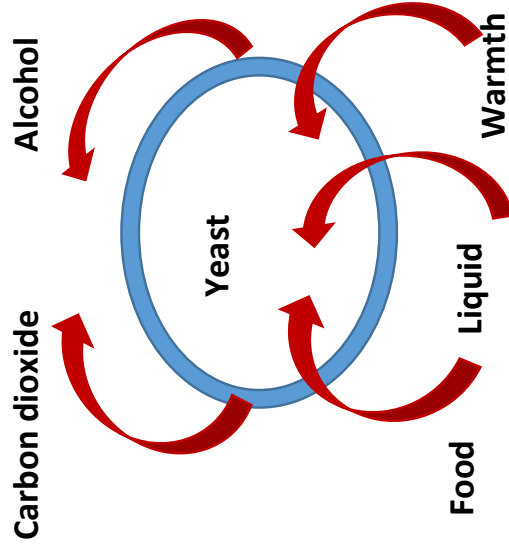
Using your body language and facial expression to react to the other person when they are speaking is also a good way of showing how you feel about what they are saying. Good characterisation leads to a successful performance.



Building tension

Using stillness and/or silence can be a good way of building tension between Michael and other characters and therefore showing their relationships. Creating tension is important as will build up suspense for the audience as to what will happen next.

Quiz 1 General Knowledge



Yeast needs:
Food / Liquid / Warmth

Yeast makes:
Carbon dioxide
Alcohol

Yeast is a microorganism:
It grows or multiplies making carbon dioxide and alcohol.

Food Cycle Knowledge Organiser

Gluten in flour

There are two proteins in flour called gliadin and glutenin. When you add water to flour you make gluten.

Gluten is stretchy like an elastic band. You need to stretch it so that it gives bread a strong structure but if you over stretch it the strings of gluten snap.

To prevent gluten strands from snapping you add vitamin C (ascorbic acid) to bread dough because it strengthens the gluten. This means you only have to prove the bread once. This is called the Chorleywood Bread Process.

We can buy FAST ACTION yeast which has vitamin C added to it.

This confuses people because they then think the vitamin C helps the yeast!

Modify

'make partial or minor changes to (something).'

Criteria

'are the ideals or requirements on which a judgment, evaluation, or selection is based.'

Food Cycle Knowledge Organiser

Quiz 2

Key words

Gluten	A protein in flour made from gliadin and glutenin
Yeast	A biological raising agent used in bread and bread products
Kneading	Stretching the bread dough to stretch the gluten
Proving	Resting bread dough to let the yeast grow and the gluten rest
Fortifying	Adding vitamins and / or minerals into a food product after it has been made
Environment	Refers to the air, water and land on which people, animals and plants live.
Food Security	Having reliable, safe access to a sufficient quantity of affordable, nutritious food
Traceability	Means you can track any food through all stages of production, processing and distribution (including importation and at retail).
Carbon Footprint	The amount of carbon dioxide released into the atmosphere as a result of the activities of a particular individual, organisation, or community.

Quiz 3 General Knowledge

Environmental issues

You need to consider these topics and also research the wider issues around each one.

Organic foods (made without any chemicals, pesticides or fertilisers)

Sustainability (making sure that we have enough to eat without destroying natural resources).

Food miles (how far the food travelled from being grown to being served on a plate and then the miles that any waste travelled).

Waste and landfill (dealing with waste in a sustainable way with little impact on the environment).

Packaging (using recycled packaging, re-using and recycling packaging).

Pesticides and chemicals (their impact on the environment and food chains).

In your test you will be asked to write an explanation of why more people buy locally sourced foods. These are some reasons, there are many more, try to think of some of your own.

The negative effects of buying food that has travelled a long way.

Reasons why we buy food that has travelled a long way.

More fuel used, higher carbon emissions, more pollution, not supporting our local economy.

Getting foods out of season (eg strawberries at Christmas), can't grow those foods in our own country, cost.



During this topic you will learn some timber properties, tool names and uses, wood joints, veneers and chipboard.

Y9 Timbers Cycle Knowledge Organiser

Quiz 1 General Knowledge

Manufactured Boards

Made from wood; often using off-cuts from natural timber. Manufactured Boards are bonded together with adhesives. They tend to be cheaper than solid wood planks



Chipboard

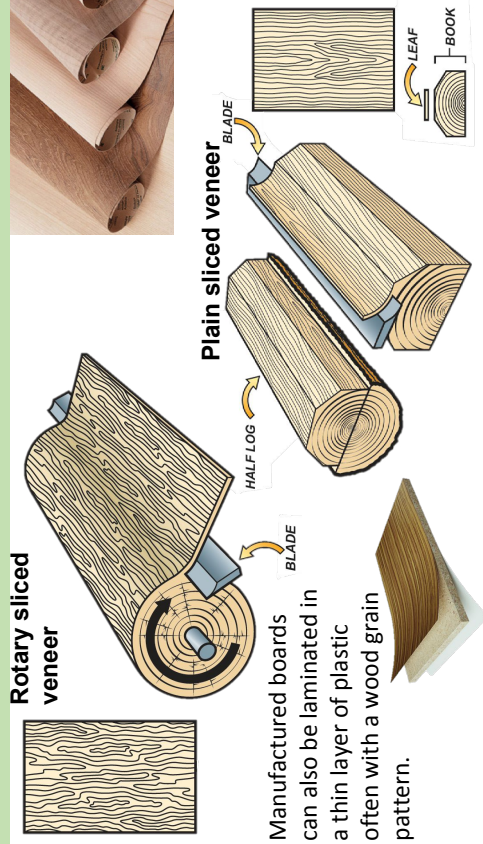
- Chipboard uses waste materials so is cheap to produce
- Not much structural strength, especially in damp conditions.
- Surface is very rough, so usually laminated with plastic or wood veneers.
- Used for loft boards, kitchen worktops and flatpack furniture.

Wood chips are mixed with glue and pressed into flat sheets.

Quiz 1 General Knowledge

Veneers

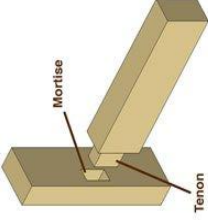
Veneer is a thin sheet/layer of natural wood, it is produced from a tree trunk in a number of ways. Veneer is usually glued onto the surface of a cheaper manmade board, giving the illusion of expensive natural wood.



Manufactured boards can also be laminated in a thin layer of plastic often with a wood grain pattern.

Quiz 1 General Knowledge

Wood Joints

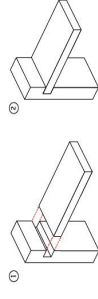


Mortise and Tenon

This is a very strong joint. The joint is split into two parts one part is the tenon (which the tenon saw is named after), the other part is the mortise (which the mortise chisel is named after).

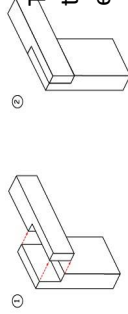
Housing joint

This is just a simple slot cut into one piece of wood to increase the glue area. This is often done with a router and works very well in MDF. This joint can be used for dividers or shelves.



Halving joint

There are many versions of the halving joint but they all involve removing half of the wood from each piece using a saw or a chisel. This joint is often strengthened with dowel.



Quiz 2 Materials / Properties

Timber Properties

Aesthetics	The appearance of the material, e.g. wood grain.		
Compression Strength	Resisting compression (being squashed or crushed)		
Tensile Strength	Resisting tension (being pulled apart)		
Hardness	Resisting being scratched or damaged at the <u>surface</u>		
Toughness	Resisting a sudden impact		

Quiz 2 Key words

Clarify

Conclude

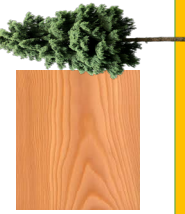
Y9 Timbers Cycle Knowledge Organiser

Quiz 2 Materials / Properties

Natural timbers

Wood is an organic material that is the main substance in the trunk and branches of a tree. Wood prepared for use in building and carpentry is known as timber. There are two types of natural timber: Hardwood and softwood. These names do not necessarily refer to how hard or soft the wood is.

Larch



Properties

- Tough
- Durable
- Resistant to water
- Use outside untreated

Uses

- Exterior cladding on buildings
- Small boats

Ash



Properties

- Tough
- Flexible
- Finishes well
- Low resistant to rot

Uses

- Handles for tools
- Sports equipment
- Ladders

Balsa



Properties

- Very light
- Good strength to weight ratio

Uses

- Surfboard cores
- Air craft and model making

Birch



Properties

- Even grain
- Finishes well
- Low resistant to rot

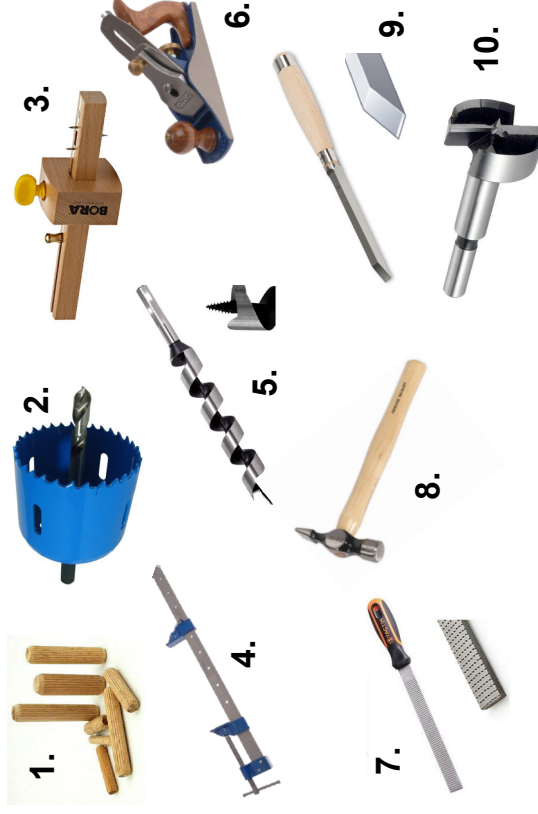
Uses

- Veneers
- Interior furniture

Quiz 3 Processes

Tool Names and uses

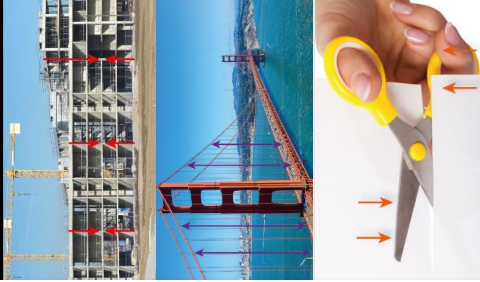
1. Dowels	Used for making strong, accurate joints in wood.
2. Hole saw	Cutting large holes in wood
3. Mortise gauge	It has two pins for marking two parallel lines where a mortise and tenon joint is to be cut.
4. Sash clamp	Used to clamp work together when it is glued.
5. Auger	Drilling deep holes in wood
6. Smoothing plane	Finishes a surface and used on end grain
7. Rasp	Coarse file used for shaping wood or other material.
8. Cross pein hammer/Warrington hammer	The cross pein allows you to gently tap the nail between your fingers without striking a finger or thumb.
9. Mortise chisel	Used with a mallet for cutting mortise joints
10. Forstner bit	Drilling flat-bottomed holes in wood



During this topic you will learn the types, properties and uses of metals

Y9 Metal Cycle Knowledge Organiser

Quiz 1 General knowledge



Compression is squashing forces.

Tension is stretching or pulling forces.

Shear is where the opposing forces are not directly opposite each other.

Forces and Stresses



Quiz 1

Key words

Variation

Rigid

Justify

Design

Quiz 1 General Knowledge

Metal surface finishes

All four help to prevent corrosion of ferrous metals by creating a barrier against moisture. They also enhance the aesthetics (appearance)

Paint



Plastic dip coating



Lacquering



Galvanising



Quiz 2 Materials / Properties

Metals can be divided into 3 categories. You have previously looked at Ferrous Metals (contain iron) and Non-Ferrous Metals (contain no iron).

The 3rd category is Alloys. This is where 2, or more metals are melted together to make a new one

E.g. Brass is an alloy Metal - Copper + Zinc = Brass

ALLOYS

Non-ferrous Alloy metals and properties



Brass

- Alloy of copper + zinc
- Corrosion resistant
- Good thermal & electrical conductivity

Ferrous Alloy metals and properties



Stainless Steel

- Alloy of iron + chromium and other elements.
- Corrosion resistant
- Hard
- Tough



High Speed Steel

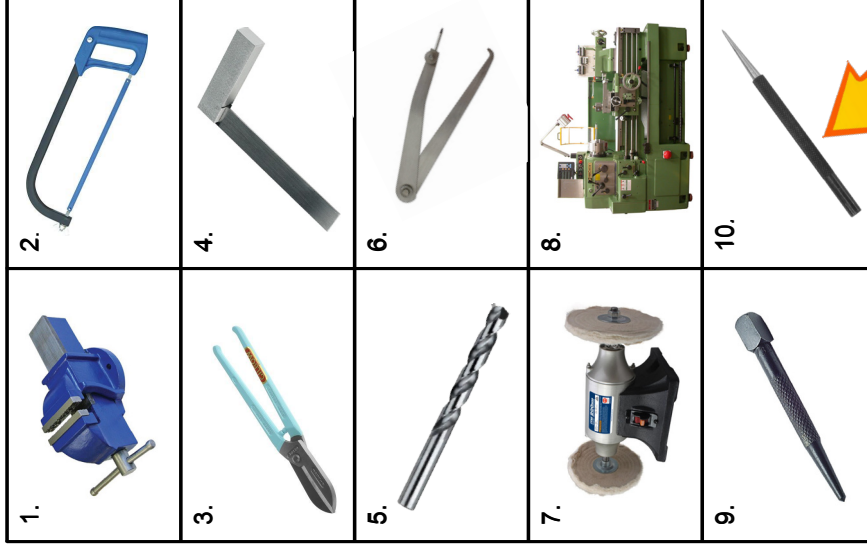
- Alloy of iron + carbon + tungsten
- Brittle
- Hard

Y9 Metal Cycle Knowledge Organiser

Quiz 2 Properties

Metal Properties

Ductility	The ability to make metal longer and thinner.
Toughness	The ability to withstand a sudden impact without fracture.
Electrical conductivity	The ability to allow electricity to pass through the material (conduct)
Thermal conductivity	The ability to transfer heat through the material (conduct).
Hardness	The ability to resist indentation and wear and tear at the surface.
Alloys	Two, or more metals melted together to form a new one. They are usually made to improve the properties of the metal. They can be ferrous or non-ferrous, depending whether they contain iron or not.
Pure metals	Made up from only one chemical element, such as aluminium or copper.
Malleable	If a metal is able to be hammered or pressed into a flatter and wider shape without breaking or cracking.
Corrosion resistant	The ability of a material to be weather resistant and not rust.
Durability	The ability to resist damage, pressure and the general wear and tear of daily use.



Quiz 3 Processes

Tools and uses

1. Metal vice	To hold work whilst cutting/ filing.	6. Odd leg callipers	To scribe lines parallel to the edge of metal
2. Hacksaw	Cutting straight lines in metal.	7. Buffer machine	To polish metals and plastics
3. Tin snips	Cutting straight lines in sheet metal.	8. Centre lathe	To manufacture cylindrical shapes from metals and plastics
4. Engineers' square	Marking 90° angles	9. Centre punch	Make an indent in metal before drilling.
5. HSS drill bit	Cutting tool used to create holes	10. Scriber	Use to mark out lines/ design on metal.



Cycle 1 in Year 9 PE will focus on developing your **Personal Development** through sports such as Hockey, Rugby, HRF and Volleyball.

Cycle 1 Knowledge Organiser

<u>Key words and definitions</u>	
<u>Concept - Personal Development</u>	<u>Personal Development - Focus Statement</u>
Develop	Recalling and demonstrating prior knowledge of skills
Perseverance	Being aware of my fine motor skills and the impact on performance
Application	Broadening my understanding of skills within modified games
Attitude	Developing confidence in competitive activities / performing
Communication	Communicating with other students effectively to develop tactics/ strategies/ routines
Focus	Making informed choices regarding skills/ tactics / routines with reasoning
Growth	Acting upon peer feedback to develop my weaknesses
Confidence	Completing my assessment to the best of my ability
Evolution	Responding to feedback to improve my skills/ understanding



Personal Development - Develop competence to excel in a broad range of physical activities.



In cycle 1 we study iMedia with a focus on the basics of digital graphics editing for the creative and digital media sector. You will learn where and why digital graphics are used and the techniques involved in their creation.

Key words and definitions

Assets	These are the component parts that are used in the creation of digital graphics. Examples would be photographs, images, graphics, text, logos.
File formats	This refers to the type of image file and file extension that is being used or considered. Typical examples of file formats are .tiff, .jpg, .png, .bmp, .gif and .pdf.
Image editing software	Software with a range of image editing tools and techniques.
DPI	DPI (Dots Per Inch) is used to describe the resolution number of dots per inch in a digital print and the printing resolution of a hard copy print.
Properties	The properties of digital graphics refer primarily to the pixel dimensions and dpi resolution.
Bitmap image	A bitmap is a digital image made of a matrix of dots. Each dot corresponds to an individual pixel on a display.
Vector image	Digital images made using mathematical statements that place lines and shapes in 2D points, so excellent for graphics that require resizing.

You will understand the purpose and properties of digital graphics, and know where and how they are used. You will plan the creation of digital graphics, create new digital graphics using a range of editing techniques and review a completed graphic against a specific brief.

Topic 1

Understand the purpose and properties of digital graphics

Graphics:

	Computer Graphics – A graphic is an image or visual representation of an object. Therefore, computer graphics are simply images displayed on a computer screen.
	Pixel (short for picture element) - is the smallest unit of a digital image or graphic that can be displayed and represented on a digital display device. Pixels are combined to form a complete image on a computer display.
	Resources - This refers to the hardware and software used to create the graphics. Examples would include both the computer equipment, image capture hardware and the image editing software application.
	Visualisation diagram A sketch or diagram of what is to be created as the digital graphic. It can be hand drawn or produced using a software application. The intention is the client can get an idea of what the final product will look like. It can include annotations in addition to the draft layout.

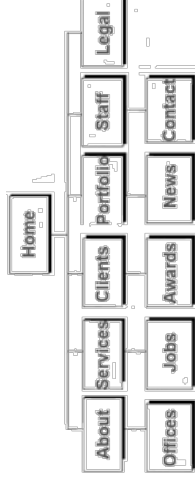
Topic 2

Understand target audience requirements for a digital graphic.

Computer Science

Key words and definitions

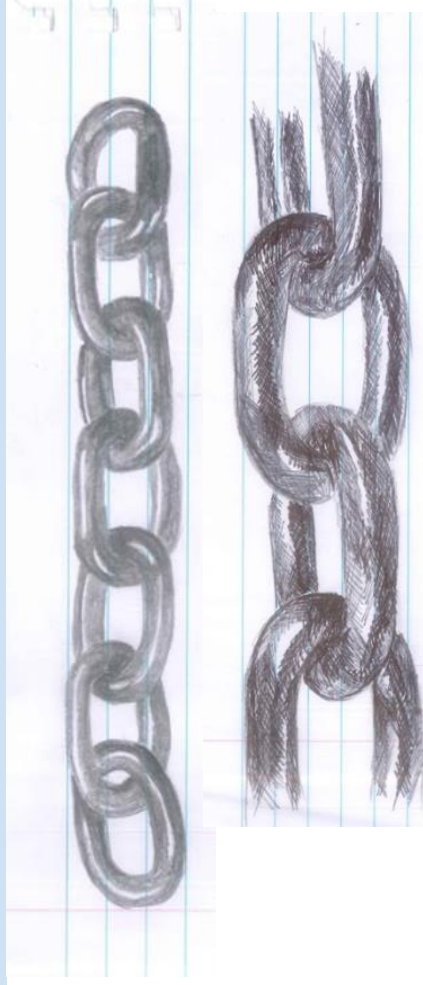
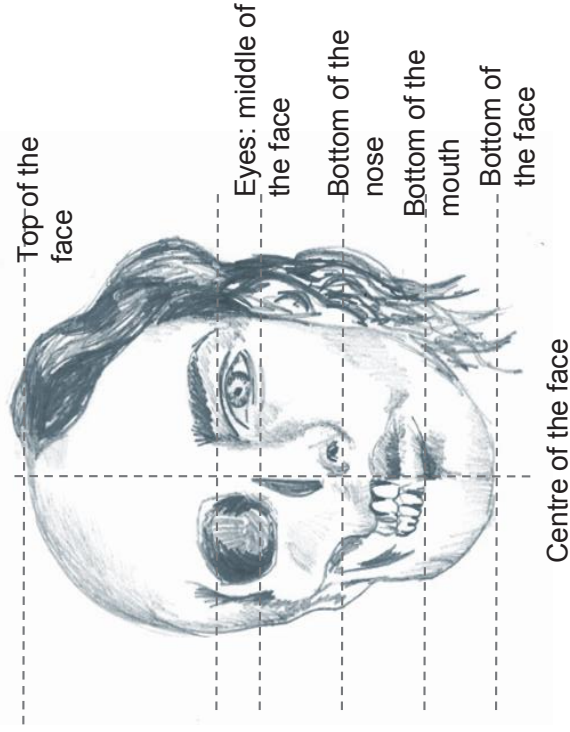
Timescales	Timescale is the period of time that is needed to do something, such as the development of a website for a customer.
Copyright	Copyright is a law that gives the owner of a work (like a book, movie, picture, song or website) the right to say how other people can use it.
 Trademark	A trademark is a recognisable sign, design or expression, which identifies products or services of a particular source from those of others.
Intellectual property	Intellectual property refers to creations of the mind, such as inventions; literary and artistic works, designs and symbols.
Milestones	A significant stage or event in the development of something, set to monitor progress of larger projects.
Target audience	A particular group at which a product, such as a website, is aimed.
Web authoring	Web authoring is creating web documents using modern web authoring software and tools. Web authoring software is a type of desktop publishing tool that allows users to navigate the tricky environment of HTML and web coding by offering a different kind of graphical user interface.
Hyperlink	A link that takes you to another website, page or resource. This is usually shown as being underlined on a website to indicate the hyperlink and the text is often in another colour to make it stand out.
Navigation system	The system by which you move through a website from page to page.
Embedded content	Content which is placed on a website but is hosted by another website such as a YouTube video or a Google Map.



Contingency Planning

A plan involving suitable backups, immediate actions and longer-term measures for responding to computer emergencies such as attacks or accidental disasters.

Cycle 1 will develop your observational drawing skills. You will explore the project theme 'Mechanical', where you will experiment with a range of media and drawing techniques. You will learn how to use a digital SLR camera and become familiar with photography terminology. This project will lead into learning cycle 2 where you will create a 3D clay piece of work.



In your homework book, recreate this drawing of a chain using pencil or biro. Focus on directing tone around the shape of each chain link to create a 3D effect.



Try using cross hatching to add tone when using pen.

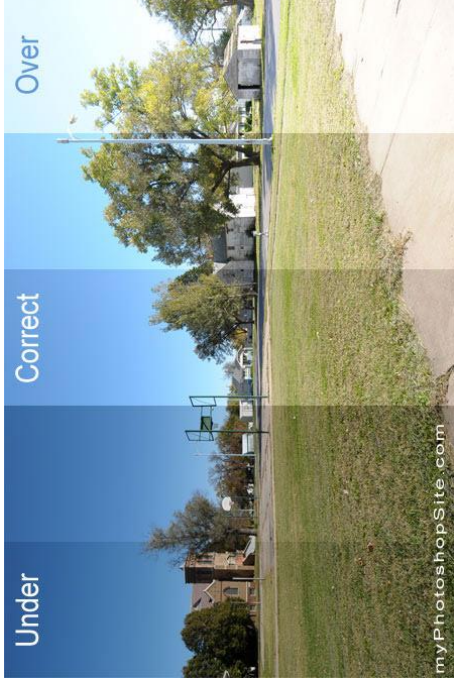
Key Art Vocabulary

Abstract	Art that is non representational (something that is unrealistic).
Contrast	A noticeable difference between two parts of an art piece.
Illustration	A drawing or picture.

Aperture Adjustment Sequence: Depth of field



Example of an **underexposed** photograph (not enough light has entered the camera, creating a dark image), and an **overexposed** photograph (too much light has entered the camera causing a bright image).



Photography Keywords	
Aperture	The size of the opening of the camera lens. It effects the photographs exposure to light. A wide aperture (e.g. f/1.8) = a lighter photograph as more light enters the camera. A narrow aperture (e.g. f/22) = a darker image as less light enters the camera.
Depth of field	How much of the image is in focus. The camera lens will focus over different distances.
Exposure	How light or dark an image is.
Focus	When an image or part of an image is sharp or clear, it is in focus.
ISO	This setting on the camera determines how sensitive the camera is to light. A low number (e.g. ISO 100) would be good in bright daytime light. A high number (e.g. ISO 3200) would be sensitive to light and good for low lighting.
Shutter speed	You can set your camera's shutter speed to fast or slow. The longer the shutter speed the more light enters the camera. Anything that moves on a long shutter speed would appear blurred. A quick shutter speed would capture moving objects clearer.
Viewfinder	The hole you look through to take your photograph.



ALWAYS

TALK TO SOMEONE WHEN YOU HAVE A PROBLEM

Remember you can use tootoot in confidence whenever you or any of your friends have a worry, or you just want to talk to someone.

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Notes



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