

The Rudheath Senior Academy







Powerful Knowledge Booklet

Year 7
Spring Term 2- HT2



Look, Cover, Write, Check: How to Effectively Learn and Recall Powerful Knowledge

	<p>Pick a section of your powerful knowledge sheet and read it aloud or write it down several times. Try to pick a section you’re least confident with.</p>
	<p>Cover up the section you want to test yourself on, either with a piece of paper or turn the page over so you can’t read the content beneath.</p>
	<p>Write out the powerful knowledge you can recall on a separate piece of paper.</p> <p>Trying to recall the knowledge out loud can also be effective.</p>
	<p>Check the knowledge you have recalled against your powerful knowledge sheet and repeat until you are confident recalling the section.</p> <p>Aim to spend 10 minutes on this at a time</p>



HT1

Y7

English Powerful Knowledge- *Voices from World War 1- Poetry*

Key Terms and Definitions

Stanza	The way a poem is structured
Alliteration	Repetition of the same consonant letter or sound at the start of words
Simile	Comparing two things using “as” or “like”
Metaphor	Comparing to things by saying one thing IS another
Personification	Giving an inanimate object human qualities
Sibilance	Repetition of s and sh letters or sound at the start of words
Juxtaposition	Placing two contrasting ideas within a piece of writing
Sibilance	The repetition of the s sound
Onomatopoeia	Words that sound like the noise they describe

Context of WW1

- * Began 28th July 1914, and ended 11th November 1918.
- Over 9 million combatants and 7 million civilians died as a result of the war.
- Soldiers were home for Christmas 1918 – however believed they would be home Christmas 1914.
- Early poems written in WW1 were patriotic and encouraged men to enlist.
- WW1 involved trench warfare. The conditions for the men were terrible.
- Women were not involved in active fighting.
- Gas attacks were used against some of the soldiers
- Poetry written as the war progressed became more realistic and reflected the realities faced.

HT2

Y7

Maths Powerful Knowledge

Key Terms

- Subtract:** taking away one number from another
- Negative:** a value less than zero
- Commutative:** changing the order of the operations does not change the result
- Product:** multiply terms
- Inverse:** the opposite function
- Square root:** a square root of a number is a number when multiplied by itself gives the value (symbol $\sqrt{\quad}$)
- Square:** a term multiplied by itself
- Expression:** a maths sentence with a minimum of two numbers and at least one math operation (no equals sign)

Perform calculations that cross zero

Number lines are useful to help you visualise the calculation crossing 0

$4 - 6 = -2$

Use the number line to guide subtraction of 6

Start at 4

Find the difference between 6 and -4

From 6 to 0
6
From 0 to -4
4
10 beads between them

Rearrangements of the same equation

$-5 + 5 = 0$

$5 - 5 = 0$

Odd directed numbers

$2 + -4 = -2$

Zero pair (-1 + 1 = 0)

Two "-1" left = -2

$8 + -3 = 5$

Partitioning

$8 + -3 = 5$

$5 + 3 + -3 = 5$

Partition the value to create a zero pair calculation

Generalisation: $+ - = -$

Subtract directed numbers

Representation for calculation

"Subtract" - means take away or remove

$2 - -1 = 3$

Take away one

Start with the representation of 2

$2 - -3 = 5$

Generalisation: $- - = +$

Multiply/ Divide directed numbers

Two representations of the same calculation

$2 \times -3 = -6$

Negative, Negative calculation

-2×-3

This is the negative of 2×-3

The act of making counters into their negative is turning them over

$-2 \times -3 = 6$

Divisions are the inverse operations

Evaluate algebraic expressions

$a = 5$

$b = -4$

$a^2 = 5^2$

$a^2 = 25$

$b^2 = (-4)^2$

$b^2 = 16$

With negative numbers the brackets are important so that it performs -4×-4

Brackets around negative substitutions helps remove calculation errors

$2a - b = 2 \times 5 - (-4) = 10 + 4 = 14$

$3b - 2a = 3(-4) - 2(5) = -12 - 10 = -22$

Two-step equations

Bar Model

$4x + 2 = 10$

$10 - 4x = 2$

Representing the same question (use Fact Families)

Function machine

$x \rightarrow x4 \rightarrow +2 \rightarrow 10$

Inverse operations to find x

Use order of operations

Brackets

Indices or roots

Multiplication or division

Addition or subtraction

Remember square roots have a positive and negative value

Brackets around negative substitutions helps remove calculation errors

x	-9	-2	-1	0	1	2	5
-5	3	6	3	0	-3	-6	-9
-2	6	4	2	0	-2	-4	-6
-1	3	2	1	0	-1	-2	-3
0	0	0	0	0	0	0	0
1	-3	-2	-1	0	1	2	5
2	-6	-4	-2	0	2	4	6
3	-9	-6	-3	0	3	6	9

HT2

Y7

Maths Powerful Knowledge

Key Terms

Numerator: the number above the line on a fraction. The top number. Represents how many parts are taken

Denominator: the number below the line on a fraction. The number represent the total number of parts

Equivalent: of equal value

Mixed numbers: a number with an integer and a proper fraction

Improper fractions: a fraction with a bigger numerator than denominator

Substitute: replace a variable with a numerical value

Place value: the value of a digit depending on its place in a number. In our decimal number system, each place is 10 times bigger than the place to its right

Representing Fractions

$\frac{1}{4}$ is represented in all the images

$1 \div 4$

Mixed numbers and fractions

$\frac{7}{5}$ Improper fraction

$1\frac{2}{5}$ Mixed number

In this model 5 parts make up a whole

Fractions can be bigger than a whole

Odd/Subtract unit fractions

Some denominator

$\frac{1}{12} + \frac{1}{12} = \frac{2}{12}$

$\frac{1}{4} + \frac{1}{4} = \frac{2}{4}$

With the same denominator ONLY the numerator is added or subtracted

Add/Subtract fractions

Some denominator

$\frac{2}{7} + \frac{3}{7} = \frac{5}{7}$

Sequences

$\frac{1}{3}, 1, 1\frac{2}{3}, 2\frac{1}{3}, 3, \dots$

Represent this on a number line to help

Add/Subtract from integers

$1 - \frac{2}{6} = \frac{4}{6}$

$3 + \frac{1}{6} = 3\frac{1}{6}$

The denominator indicates the number of parts a whole is made up of

Equivalent fractions

Numerator and denominator have the same multiplier

$\frac{2}{3} = \frac{4}{6}$

$\frac{1}{3} = \frac{2}{6}$

Add/Subtraction fractions (common multiples)

Addition/Subtraction needs a common denominator

$\frac{3}{5} + \frac{7}{10} = \frac{6}{10} + \frac{7}{10} = \frac{13}{10}$

Add/Subtraction any fractions

$\frac{4}{5} - \frac{2}{3} = \frac{12}{15} - \frac{10}{15} = \frac{2}{15}$

Use equivalent fractions to find a common multiple for both denominators

Add/Subtraction fractions (improper and mixed)

$2\frac{1}{5} - 1\frac{3}{10} = 2\frac{2}{10} - 1\frac{3}{10} = \frac{22}{10} - \frac{13}{10} = \frac{9}{10}$

- Convert to an improper fraction
- Calculate with common denominator

Partitioning method

$2\frac{1}{5} - 1\frac{3}{10} = 2\frac{2}{10} - 1\frac{3}{10} = 2\frac{2}{10} - 1 - \frac{3}{10} = 1\frac{2}{10} - \frac{3}{10} = \frac{9}{10}$

Fractions in algebraic contexts

$k - \frac{5}{8} = 2$

Apply inverse operations: $k = 2 + \frac{5}{8}$

Form expressions with fractions: $b + \frac{7}{9} \rightarrow b + \frac{7}{9}$

Substitution: $\frac{p}{8} + \frac{1}{m} = \frac{5}{8} + \frac{1}{2}$

$p = 5, m = 2$

Fractions and decimals

Example: $\frac{6}{10} + 0.3 = 0.6 + 0.3$

$\frac{1}{10} = 0.1$

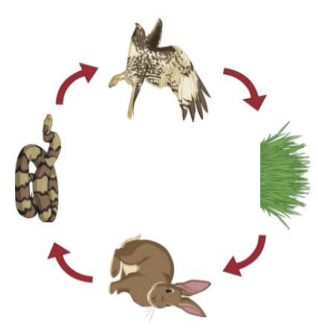

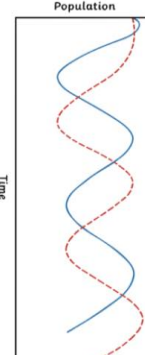
$\frac{1}{100} = 0.01$

Remember to use equivalent fractions and common denominators

Science Powerful Knowledge

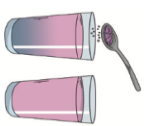
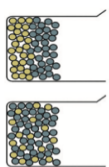
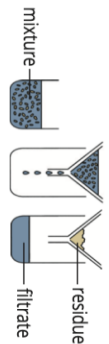
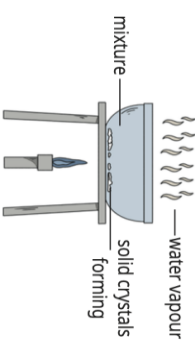
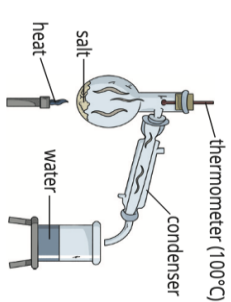
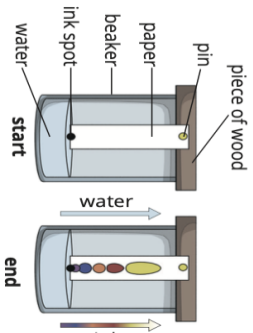
Interdependence

AQA Biology (Combined Science) Unit 7: Ecology Knowledge Organiser

<p>Keywords</p> <p>Biodiversity - the variety of living organisms.</p> <p>Carion - decaying flesh and tissue of dead animals.</p> <p>Community - made up of the populations of different species living in a habitat.</p> <p>Competition - the negative interaction between two or more organisms which require the same limited resource.</p> <p>Consumers - feed on other organisms for their energy. Can be primary, secondary or tertiary.</p> <p>Decomposers - organisms which feed on dead and decaying organisms. They break down the biomass and release nutrients into the soil.</p> <p>Deforestation - the removal and destruction of trees in forest and woodland.</p> <p>Ecosystem - the interaction between the living organisms and the different factors of the environment.</p> <p>Global warming - the increase of the average global temperature.</p> <p>Habitat - where a living organism lives.</p> <p>Interdependence - the interaction between two or more organisms, where it is mutually beneficial.</p> <p>Population - the number of individual organisms of a single species living in a habitat.</p> <p>Predators - organisms which kill for food.</p> <p>Prey - the animals which are eaten by the predators.</p> <p>Producers - convert the sun's energy into useful compounds through photosynthesis. They are green plants or algae.</p> <p>Scavengers - organisms which feed on dead animals (carion).</p> <p>Species - organisms of similar morphology which can interbreed to produce fertile offspring.</p>	<p>Abiotic and Biotic Factors</p> <p>Abiotic factors are the non-living factors of an environment. E.g. moisture, light, temperature, CO₂, wind, O₂ or pH.</p> <p>Biotic factors are the living factors of an environment. E.g. predators, competition, pathogens, availability of food.</p> <p>Adaptations</p> <p>Adaptations are specific features of an organism which enable them to survive in the conditions of their habitat.</p> <p>Adaptations can be structural, behavioural or functional:</p> <ul style="list-style-type: none"> • Structural adaptations are features of the organism's body e.g. colour for camouflage. • Behavioural adaptations are how the organism behaves e.g. migration to a warmer climate during colder seasons. • Functional adaptations are the ways the physiological processes work in the organism e.g. lower metabolism during hibernation to preserve energy. 	<p>Food Chains</p> <p>The source of all energy in a food chain is the sun's radiation. It is made useful by plants and algae which produce organic compounds through photosynthesis.</p>  <p>The living organisms use the energy to produce biomass and grow.</p> <p>When a living organism is consumed, some of the biomass and energy is transferred. Some of the energy is lost.</p> <p>Remember: the arrow in a food chain indicates the direction of the flow of energy.</p> <p>Populations of predators and prey increase and decrease in cycles. The size of the predator population depends on the size of the prey population and vice versa. Overall, there is a stable community.</p>	<p>Competition</p> <p>Species will compete with one another and also within their own species to survive and to reproduce.</p> <p>Mutualism occurs when both species benefit from a relationship.</p> <p>Parasitism occurs when a parasite only benefits from living on the host.</p> <p>Animals compete for resources such as food, water and space/shelter. They may also compete within their own species for mates.</p> <p>Plants compete for resources including light, water, space and minerals. All these resources are needed for photosynthesis so the plant can make its own food. Plants do not need to compete for food.</p>
<p>Adaptations</p> <p>Adaptations are specific features of an organism which enable them to survive in the conditions of their habitat.</p> <p>Adaptations can be structural, behavioural or functional:</p> <ul style="list-style-type: none"> • Structural adaptations are features of the organism's body e.g. colour for camouflage. • Behavioural adaptations are how the organism behaves e.g. migration to a warmer climate during colder seasons. • Functional adaptations are the ways the physiological processes work in the organism e.g. lower metabolism during hibernation to preserve energy. <p>A plant or animal will not physically change to adapt to its environment in its lifetime. Instead, there is natural variation within the species and only organisms whose features are more advantageous in the environment survive. The survivors then go on to reproduce and pass on their features to some of their offspring. The offspring who inherit these advantageous features are better equipped to survive.</p> <p>Charles Darwin described this process as 'survival of the fittest'.</p>		 <p>Population</p> <p>Time</p> <p>—••••• Predator</p> <p>—••••• Prey</p>	<p>Deforestation and Land Use</p> <p>Humans use land for buildings, quarrying, mining, agriculture and landfill. As the human population increases and we take more land, there is less space for other organisms to live.</p> <p>Deforestation (to use wood as a fuel/material or to clear space for other uses) destroys habitats where other organisms live.</p> <p>Peat bogs are produced when decomposition occurs over a very long time. Peat stores a lot of carbon and can be extracted for use by gardeners or as an energy source. Burning peat releases a lot of carbon dioxide into the atmosphere which contributes to the greenhouse effect.</p> <p>Trees absorb carbon dioxide for photosynthesis, so as they are cut down and removed, less carbon dioxide is taken from the atmosphere. Furthermore, when the trees are buried they release carbon dioxide back into the atmosphere. The excess carbon dioxide can lead to global warming and the changes to the ecosystem cause reduced biodiversity.</p>

Science Powerful Knowledge

Separating Mixtures

<p>Dissolving</p> <p>Dissolving is the process of mixing a soluble solute into a solvent until it is fully incorporated to create a solution.</p> <p>Solutes dissolve faster with increased temperature, greater surface area and stirring.</p> <p>soluble – able to be dissolved</p> <p>solvent – the substance that something dissolves in</p> <p>solute – the substance that is dissolved</p> <p>solution – a liquid containing a dissolved solid or another liquid</p> <p>Compounds and Mixtures</p> <p>Compounds contain two or more different elements chemically bonded together, for example, carbon dioxide contains carbon and oxygen.</p> <p>Mixtures contain substances that are not chemically bonded. Mixtures can be separated easily.</p> <p>A pure element or compound contains only one substance, with no other substances mixed in. Impure materials are mixtures of elements, compounds, or both.</p> <p>Examples of different types of mixtures:</p> <table border="1" data-bbox="178 383 421 652"> <tr> <td>gas</td> <td>liquid</td> <td>solid</td> </tr> <tr> <td>air</td> <td>liquids</td> <td>solids</td> </tr> <tr> <td></td> <td>aerosols solutions, and foams e.g. beer</td> <td>metal alloys</td> </tr> <tr> <td></td> <td>solutions, e.g. salt water</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table> 	gas	liquid	solid	air	liquids	solids		aerosols solutions, and foams e.g. beer	metal alloys		solutions, e.g. salt water					<p>Diffusion</p> <p>When a liquid or gas is mixed into another, the particles will flow and move about until they are evenly spread throughout.</p> <p>The particles move from an area of high concentration to an area of low concentration.</p>  <p>This process is called diffusion.</p> <p>The rate of diffusion is affected by:</p> <ul style="list-style-type: none"> • concentration gradient • temperature. <p>Diffusion will occur at a faster rate when the concentration gradient is steep, or the solution is at a higher temperature.</p> <p>Separating Rock Salt</p> <p>Rock salt is a mixture of sand and salt. Sand is insoluble and salt is soluble, which means they can be separated easily using several separation techniques.</p> <ol style="list-style-type: none"> 1. Create a solution of the rock salt with water. Only the salt will dissolve into the water. 2. Filter this solution. The insoluble sand will collect as residue in the filter paper. The salt will pass through, dissolved in the water. The filtrate collected is a salt water solution. 3. Heat the salt water solution, evaporation or simple distillation can be used to collect either the salt crystals or the water. 	<p>Filtration</p> <p>This method is used to separate an insoluble solid from a liquid. The solution is passed through a filter paper and a funnel.</p> <p>The residue remains in the filter paper, and the part which passes through the filter is called the filtrate. A mixture of sand and water can be separated by filtration.</p>  <p>Evaporation</p> <p>This method is used to separate a soluble solid from a solvent. The solution is heated, the liquid evaporates and the solid crystallises.</p> <p>If the evaporation and crystallisation occur quickly, the crystals formed will grow rapidly and will be small.</p> <p>If it can occur slowly, such as on a windowsill, then the crystals will have more time to form and be larger in size.</p> <p>A solution of salt water can be separated using the evaporation method.</p> 	<p>Distillation</p> <p>This method is used to separate a solvent from a solution. It can separate the same type of solution as in evaporation, e.g. salt water, but retrieving the other component of the mixture.</p>  <p>As the water is heated and evaporates from the flask, it flows upwards and into the condenser. The condenser is surrounded by cool water which causes the water vapour to condense back into a liquid, this flows down the tube and into the beaker. The water collected in the beaker is distilled water.</p> <p>Chromatography</p> <p>The separate inks are carried different distances up the stationary phase (filter paper) by the mobile phase (solvent).</p>  <p>Chromatography can be used to separate, for example, different dyes in ink. The colours are separated because they have varying solubilities.</p>
gas	liquid	solid																
air	liquids	solids																
	aerosols solutions, and foams e.g. beer	metal alloys																
	solutions, e.g. salt water																	



History Powerful Knowledge

HT1

Y7

Knowledge Organiser – The Tudors



Summary

1. Over five hundred years ago, people were only just realising that America existed and had no idea about Australia. England and Scotland were separate kingdoms, each with their own king. The Tudors were a Welsh/English family that ruled England and Wales from 1485 to 1603- 118 years!

Key Events

1.	1485: Henry Tudor ends the Wars of the Roses and becomes the first Tudor king – Henry VII by defeating Richard III at the Battle of Bosworth.
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3.	1492: Columbus discovers the Americas- The New World
3.	1509: Henry VIII becomes king on his father's death
4.	1534: Henry VIII becomes Head of the Church of England after a quarrel with the Pope about his divorce from Catherine of Aragon
5.	1547: Edward VI becomes king at the age of 9. He is a Protestant
6.	1553: The Catholic Mary I becomes queen. Nicknamed Bloody Mary
7.	1558: Elizabeth I is the last of the Tudors and a Protestant
8.	1587: Catholic Mary, Queen of Scots is beheaded for plotting against Elizabeth
9.	1588: English victory over the Armada sent by Phillip II of Spain
10	1603: Elizabeth dies. James VI of Scotland becomes James I of England uniting both kingdoms

Key Individuals

11	Martin Luther- protested against the Catholic Church. He was the first Protestant. Europe became divided between Catholics and Protestants
12	Lady Jane Grey- Protestant Queen for 9 days in 1553
13	Sir Francis Drake and Sir Walter Raleigh – English sailors and explorers

Key Terms

14	Armada	A fleet of warships sent by Catholic Phillip of Spain to lead the invasion of England
15	Catholic	A member of the Christian Church led by the Pope
16	Dissolution of the monasteries	Henry VIII closed all monasteries in England and took their wealth
17	Excommunicate	To expel from the Catholic Church- a serious punishment
18	Galleon	A large warship
19	Heir	A person who is next in line for the throne
20	Heretic	Someone who challenges the ideas of the Catholic Church
21	Martyr	A person who is prepared to die for their beliefs
22	Monarch	A king or queen
23	Pope	Leader of the Catholic Church. Lives in Rome
24	Protestant	A follower of Martin Luther in protesting about the Catholic Church
23	Reformation	The changes or reforms made to the Catholic Church in the 16 th century
24	Treason	A crime against the king or queen
25	Tudor Rose	Made up of the red rose of the Duke of Lancaster and the white rose of the Duke of York. Designed by Henry VIII to represent the end of the civil wars nicknamed the Wars of the Roses
26	Tyrant	A cruel and demanding ruler
27	Vagabonds	Wanderers or tramps



HT1

Y7

History Powerful Knowledge

The Tudors

Advance Organiser

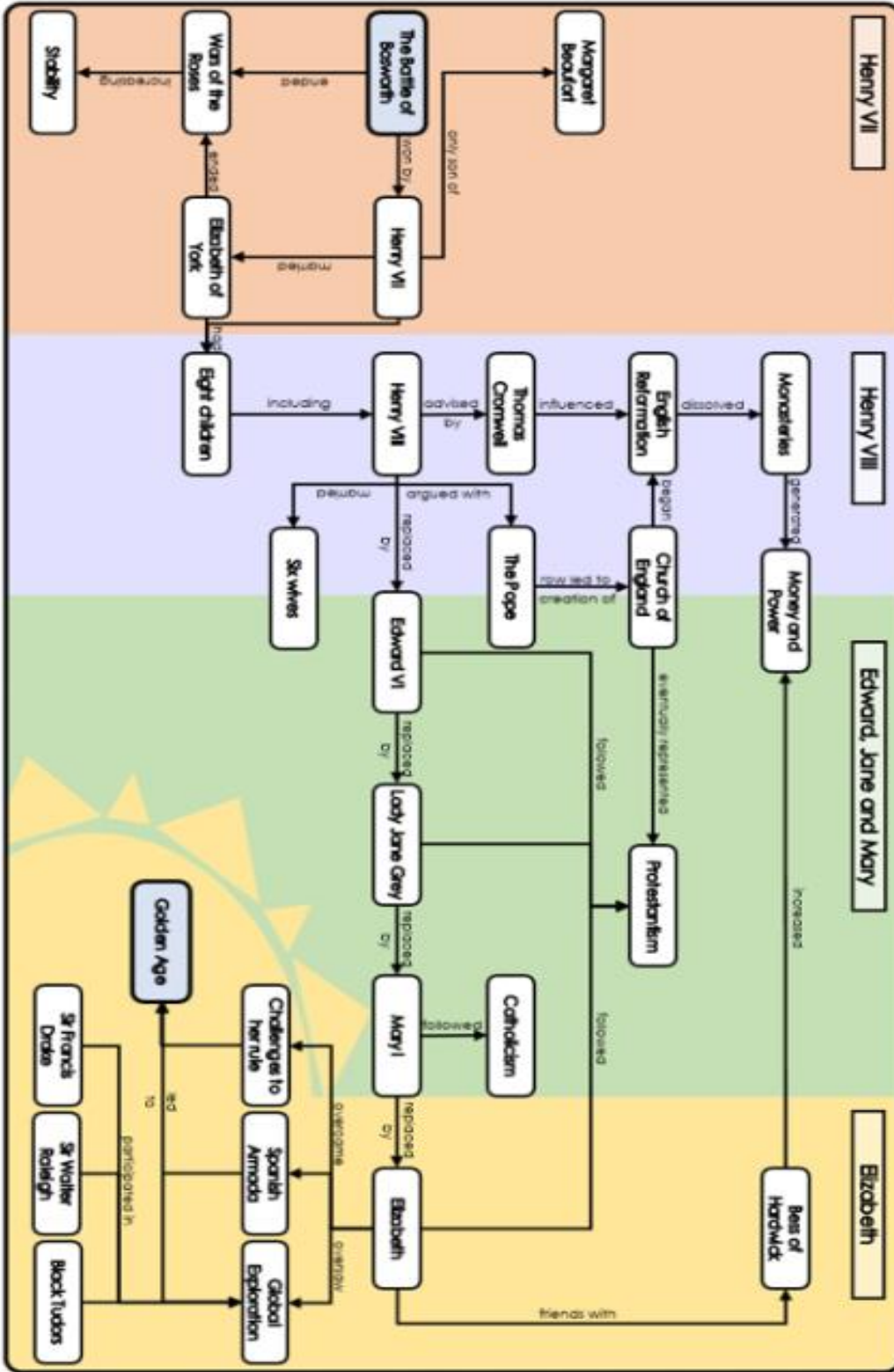


On 22nd August, 1485, Henry VII won a crucial victory at the Battle of Bosworth, beginning his reign as King and ended the Wars of the Roses. To unite the two rival houses of York and Lancaster, he married Elizabeth of York, the niece of the previous King Richard III. Henry and Elizabeth had eight children, including Henry VIII.

Henry VIII is well known for his six wives, but his dramatic personal life impacted significantly on the people of England. An argument with the Pope over his divorce from Catherine of Aragon meant that he broke with the Catholic Church in Rome and established the new Church of England. This was the beginning of the English Reformation, and a period of religious upheaval that lasted for more than a century. The reformation was influenced by people like Thomas Cromwell, who, at Henry's request, oversaw the dissolution of the monasteries and the confiscation of their wealth and lands.

The next eleven years saw three monarchs on the throne, and England lurched towards Protestantism, to Catholicism and back again. There was a lot of social unrest, and many people were imprisoned, tortured or executed for their beliefs.

The last Tudor monarch, Elizabeth, reigned for 45 years. She overcame a number of challenges to her rule, defeated the invading Spanish Armada, and began an age of global exploration by supporting navigators such as Sir Walter Raleigh, Diego the Circumnavigator, and Sir Francis Drake.



HT1

Y7

Geography Powerful Knowledge

Our Island Home

INTRODUCTION TO THE UK



GREAT BRITAIN

Great Britain the largest island, consists of three countries – England, Wales and Scotland. Ireland is split into two – Northern Ireland and the Republic of Ireland.

WHAT IS THE UK

BRITISH ISLES



The British Isles consist of two large islands. These islands are called Britain and Ireland.

UNITED KINGDOM



The UK consists of the four countries of England, Wales, Scotland, and Northern Ireland. The Republic of Ireland is a

FLAGS



NORTHERN IRELAND

IRELAND



SCOTLAND

ENGLAND



WALES

EUROPEAN UNION

The United Kingdom (UK), is located to the north-west of the continent of Europe. It has recently voted to leave a group of other countries known as the **European Union** or the EU for short.

WEATHER AND CLIMATE IN THE UK

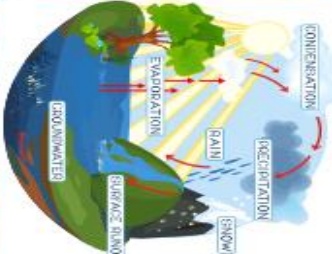
WEATHER The conditions of the atmosphere, such as temperature and presence of rain and cloud. *Changes daily*

Weather changes daily

CLIMATE The average weather conditions of a location over a long period of time



THE WATER CYCLE

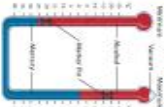


The water cycle models how water is transferred between the oceans and the atmosphere. The sun heats water in seas and lakes causing **evaporation**. Plants also release water from their leaves through **transpiration**. This warm moist air rises where it is cooled by surrounding cold air. This causes the water vapour to **condense** into rain drops. Eventually the drops become so big they fall as **precipitation**. This water travels over ground or through the soil into rivers and then back to the sea. The cycle then starts again.

MEASURING THE WEATHER

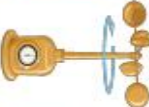
Meteorologists are people who study and measure the weather. The weather is observed by weather stations based on land and equipment carried on planes, ships, weather balloons and satellites.

SUN'S THERMOMETER



Measures maximum and minimum air temperature over a 24-hour period. Temperature is usually measured in degrees Celsius.

ANEMOMETER



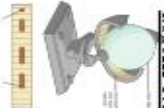
Measures wind speed in miles or km per hour. The cups rotate in the wind and turn a vertical rod.

WIND VANE



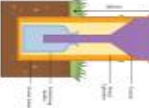
A wind vane shows the wind direction. The arrow points in the direction the wind is blowing from.

CAMPBELL-STOKES SUNSHINE RECORDER



Measures the amount of sunshine during the day. A glass sphere concentrates the Sun's rays on a strip of card, burning a small hole.

RAIN GAUGE



Measures the amount of precipitation (rain, sleet, hail or snow) that has fallen in a 24-hour period. This is usually measured in millimetres.

BAROMETER



Measures air pressure. This is the force or weight of the air above us. High pressure means sunny and dry conditions, low pressure means stormy and wet conditions.

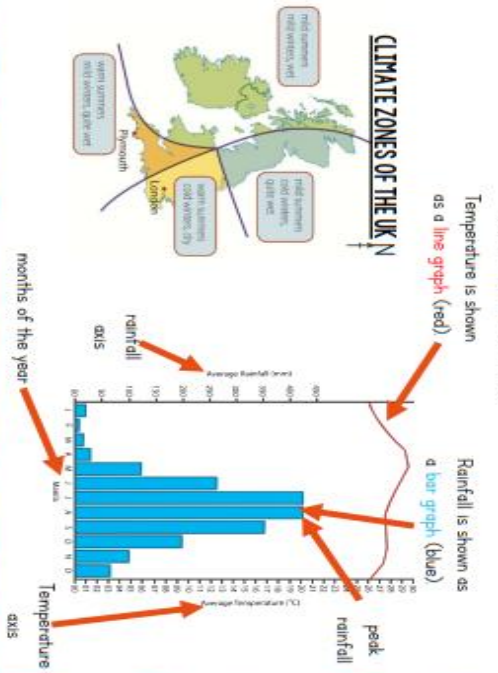


HT1

Y7

Geography Powerful Knowledge

CLIMATE GRAPHS



MIGRATION

Migration is the movement of people from one place to another

VOLUNTARY MIGRATION

When people have a choice where to move and if they should move at all

FORCED MIGRATION

When a government or authority forces someone to move, no choice

IMMIGRANT

A person who comes to live permanently in a foreign country.

EMIGRANT

A person who leaves their own country in order to settle permanently in another country.

REFUGEES

A person who has been forced to leave their country in order to escape war, persecution, or natural disaster.

ASYLUM SEEKERS

A person who has left their home country as a political refugee and is seeking asylum in another country.

KEY WORDS

PRECIPITATION

WEATHER

BRITISH ISLES

BAROMETER

ANEMOMETER

ASPECT

PHYSICAL FEATURES

GREAT BRITAIN

REFUGEES

ASYLUM SEEKERS

WATER CYCLE

CLIMATE GRAPH

EMIGRATION

EVAPORATION

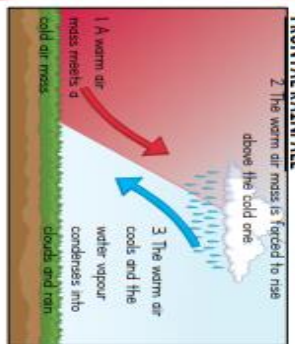
TRANSPIRATION

IMMIGRANT

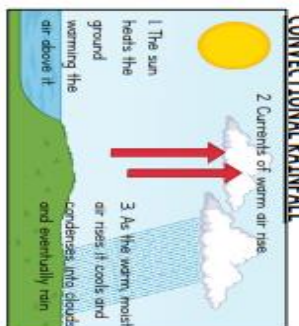
EMIGRANT

RAIN AND CLOUDS

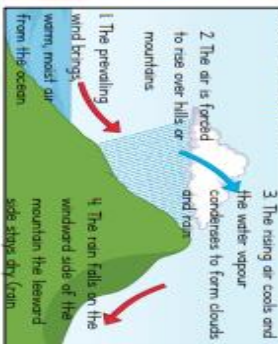
FRONTAL RAINFALL



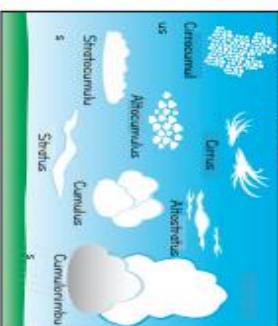
CONVECTIONAL RAINFALL



RELIEF RAINFALL



TYPES OF CLOUDS



MICROCLIMATES

When the climate in a small area is different from the general surroundings it is called a **MICROCLIMATE**

WHAT AFFECTS MICROCLIMATES

SHelter

This can protect you from the wind e.g. by trees, hedges, walls, buildings and even hills.

Trees provide shade and shelter.

PHYSICAL FEATURES

Water areas e.g. lakes have a cooling effect. Hills/ops are usually cool and windy.

SURFACE

The colour of surfaces affects warming. Dark surfaces e.g. tarmac and soil become warmer than light surface e.g. grass.

BUILDINGS

These give off heat that has been either stored from the sun or from heating systems. They also break up and reduce wind speed or they can speed it up by funneling it.

ASPECT

The direction in which something faces. In the UK south facing places get most sun so are usually the warmest.



HT1

Spanish Powerful Knowledge

Y7

¿Cuántas personas hay en tu familia? How many people are there in your family?

En mi familia hay... personas.	In my family, there are... people.	mis primos	my cousins
mis padres	my parents	¿Cómo se llama tu madre?	What is your mother called?
mi madre	my mother	Mi madre se llama...	My mother is called...
mi padre	my father	¿Cómo se llaman tus primos?	What are your cousins called?
mi abuelo	my grandfather	Mis primos se llaman... y...	My cousins are called... and...
mi abuela	my grandmother	su hermano	his/her brother
mi bisabuela	my great-grandmother	sus hermanos	his/her brothers
mi tío	my uncle		
mi tía	my aunt		

¿De qué color tienes los ojos? What colour are your eyes?

Tengo los ojos...	I have... eyes.	marrones	brown
azules	blue	verdes	green
grises	grey	Llevo gafas.	I wear glasses.

¿Cómo tienes el pelo? What’s your hair like?

Tengo el pelo...	I have... hair.	rizado	curly
castaño	brown	largo	long
negro	black	corto	short
rubio	blond	Soy pelirrojo/a.	I am a redhead.
azul	blue	Soy calvo.	I am bald.
liso	straight		

¿Cómo es? What is he/she like?

Es...	He/She is...	inteligente	intelligent
No es muy...	He/She isn't very...	joven	young
alto/a	tall	viejo/a	old
bajo/a	short	Tiene pecas.	He/She has freckles.
delgado/a	slim	Tiene barba.	He has a beard.
feo/a	ugly	mis amigos	my friends
gordo/a	fat	mi mejor amigo/a	my best friend
guapo/a	good-looking, attractive	su mejor amigo/a	his/her best friend

¿Cómo es tu casa o tu piso? What is your house or flat like?

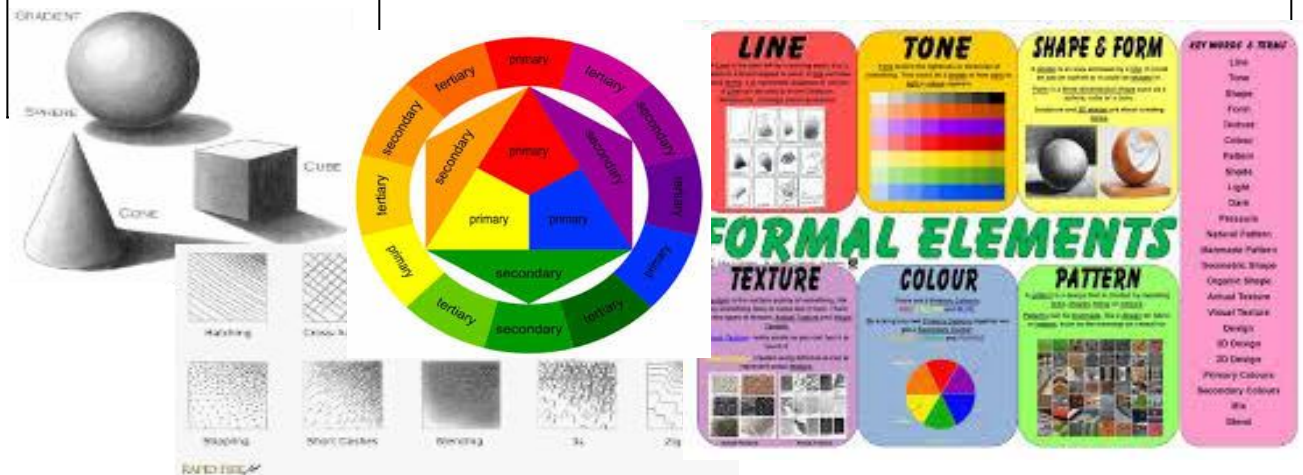
Vivo en...	I live in...	cómodo/a	comfortable
una casa	a house	grande	big
un piso	a flat	moderno/a	modern
antiguo/a	old	pequeño/a	small
bonito/a	nice, pretty		

HT2

Art Powerful Knowledge

Y7

Term	Definition
Shade	A shade is where an artist adds black to a colour to darken it down. A tone is where an artist adds grey to a colour.
Illustration	Drawings in books and visualisations made by an artist, such as a drawing, sketch, painting, photograph.
Observational Drawing	Observational drawing is drawing what you see. It's as simple and as complicated as that. Drawing what is in front of you.
Graphic Design	The art of selecting and arranging visual elements—such as typography, images, symbols and colours—to convey a message to an audience.
Perspective	Perspective in art usually refers to the representation of three-dimensional objects or spaces in two dimensional artworks. It creates depth.
Form	An element of art that is three-dimensional and encloses volume; includes height, width AND depth (as in a cube, a sphere, a pyramid, or a cylinder)
Gradient	Is the gradual blending from one colour to another colour or shade dark- light



HT1

Food Technology Powerful Knowledge

Y7

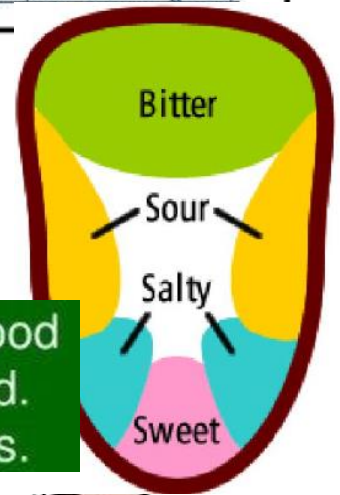
1. Base your meals on starchy foods
2. Eat lots of fruit and veg
3. Eat more fish – including a portion of oily fish each week
4. Cut down on saturated fat and sugar
5. Try to eat less salt – no more than 6g a day for adults
6. Get active and try to be a healthy weight
7. Drink plenty of water
8. Don't skip breakfast

The Eatwell Guide shows how much of what we eat overall should come from each food group to achieve a healthy, balanced diet.

<https://www.youtube.com/watch?v=7MIE4G8ntss>
<https://www.nhs.uk/live-well/eat-well/the-eatwell-guide/>

Sensory Analysis

When tasting food and describing what the food is like, descriptive adjectives should be used. This is done by using all five sensory organs.



Hear the snap of a crunchy biscuit and the fizz of a drink.



Touch a ripe pear and crusty bread.



Taste lemons, chocolate and blue cheese.



Smell coffee and bread freshly made.



See a ripe banana and a trifle decorated with piped cream.



HT1

Design & Technology Powerful Knowledge

Y7

NOVELTY STORAGE BOX

Design Brief	A brief description of what you are going to design.
Analysis	Detailed brake down of key areas: who- what – why – where – when – how
Specification	A detailed list specific to the design or product.
Aesthetics	The appearance, Is the products design attractive to the target audience. ' Does it look good'.
Annotate	To add notes to identify key points of a design
Environment	To use materials which will not effector or harm the environment.
Material	What materials are used and why they were chosen for the particular job
Safety in the Workshop	This is the most important thing in any work environment. Your Safety

This project introduces the student to traditional wood working methods of production and how to use hand tools in a safe and correct manner.



HT1

Y7

Music Powerful Knowledge

What are we learning about?:

- A. What is a Sea Shanty?
- B. How can I play rhythms on a Ukulele?
- C. Keywords
- D. How do I write lyrics based on a Theme?

Keywords for this Half Term

- Chords
- Major
- Minor
- Structure

A: What is a Sea Shanty?

Sea shanties are a type of folk song, typically performed on ships by fishermen, merchant sailors or whalers to accompany the heavy, repetitive tasks of sail-hoisting and deck-scrubbing.



C:	Keywords
Chords	Three or more pitches played at the same time
Major	Bright or Happy sound
Minor	Dark and Sad sound
Structure	The way the Music is put together

D: How do I write lyrics based on a Theme?

Lyrics are words that make up a song, usually consisting of Verse and Chorus. The writer of lyrics is a lyricist.

- Your theme surrounds the Sailors daily lives



Sentence Starters

- Work all day...
- Out at sea...
- Clean the decks...
- Hoist the sail

Words you can include

- Plank
- Sea
- Home
- Sailor



- Structure (Use **one** rhyme / 4 lines)

When I was at sea, cleaning on the **deck** (10 syllables)

Working as a team, working up a **sweat** (10 syllables)

Yo – Ho, working till night (5 syllables)

Don't fall off the plank (5 syllables)

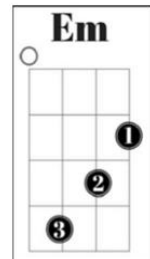
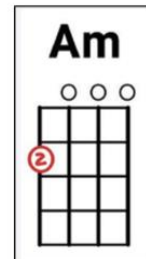
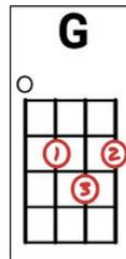
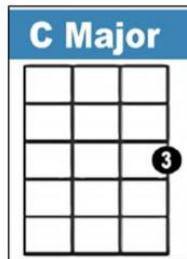
Structure:
Verse Chorus Form

VERSE	CHORUS	VERSE	CHORUS	BRIDGE	CHORUS
A	B	A	B	C	B

B: How can I play rhythms on a Ukulele?

The difference between a major and minor chord comes down to one, simple change: the 3rd.

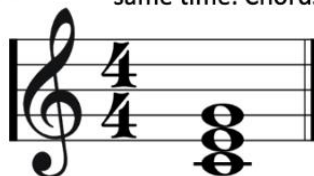
This is when we see ‘Accidental notes’.



Chords are three or more pitches played at the same time. Chords often accompany a Melody.



Sharps Naturals Flats



HT1

Y7

Drama Powerful Knowledge

Drama Knowledge Organiser

YEAR 7 SPRING TERM 2
WASHBROOK

HOW CAN DRAMA BE USED TO EXPLORE REAL LIFE ISSUES THROUGH IMPROVISATION AND CHARACTER DEVELOPMENT?



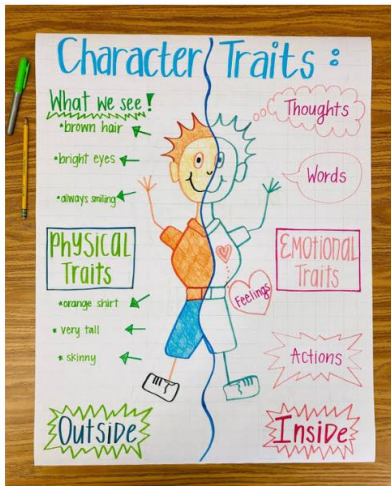
Developing a character:



The Village of Washbrook:



Drama Keywords:



Improvisation- Making up a scene in order to explore a situation or relationship.

Teacher in Role- the teacher taking on the role of a character to take students into an imaginary situation for them to explore.

characterisation- The process of fully developing a character.

Body Language- Messages given by the position of the body.

Facial Expression - Look on the face to show emotion.

Eye Contact - Where the eyes are looking to portray emotion.

Mannerisms- A common movement used by a character to show personality

Character- A character is the role that the actor plays in a performance.

Gesture- any movement made with any part of the body which indicates something to another character or the audience.

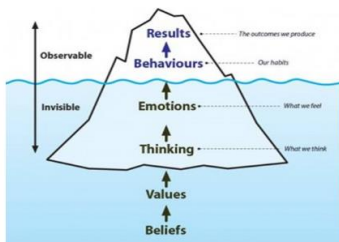
Tension- a growing sense of expectation within the drama, a feeling that the story is building up towards something exciting happening.

Status- the level of power or influence a character has.

Cross-cutting- a device to move between two or more scenes staged in the space at the same time.

Mime-A stylized form of movement which creates an illusion without speech or props.

Still image-A still image which represents a moment in the Drama.





HT2

Y7

I.T. Powerful Knowledge

Term	Definition
Letters	A set of symbols used in writing and printing. For example, ‘A,B.C.D’.
Numbers	Mathematical symbols used to represent quantities or values.
Symbols	Characters or marks, for example ‘\$”!%^&*’
Private	Something that is restricted to a particular person or group and not for public access or knowledge.
Characters	Individual symbols (letters, numbers, punctuation) that form text.
Username	Unique identifiers used to access a computer system or online account
Accounts	A user-specific record on a system or service
Health	The state of being free from illness or injury, as well as mental and social well-being.
Safety	The condition of being protected from harm, danger, or risk.
Hazards	Potential sources of harm or danger that could cause injury or damage.
Eye Strain	Discomfort or fatigue in the eyes caused by prolonged use of screens or reading.
Legislation	Laws or regulations enacted by governing bodies to regulate behaviors and practices.

Vocabulary	Definition
Personal information	Personal information refers to any data that can identify an individual, such as name, contact details, or demographic information.
Programming	Programming is the process of designing and writing code to create software applications, websites, or systems that perform specific tasks or solve problems.
Debugging	Debugging is the process of identifying, isolating, and fixing errors or bugs in a program's code to ensure it functions as intended.
Copyright	Copyright is a legal right granted to the creator of original works (such as literature, music, or software) that gives them exclusive control over the use and distribution of their creations



HT2

Y7

I.T. Powerful Knowledge

copyright	If you create something then it belongs to you. This means that you own the copyright and can decide what happens to your creation.
email	A way to send and receive digital messages over the Internet .
Internet	A large network of computers connected to each other all around the world.
online	Going online means connecting to the Internet . When you go online , you can connect to other places and other people.
personal information	This is information about yourself that can be used to identify you, such as your name or date of birth. Personal information should be kept private.
save	Store a file so that you can keep what you have done and open it up again later.
search engine	A software program that allows you to use the Internet to find information on a website .
website	A collection of web pages grouped together.

What Is Personal Information?

Personal information is information about yourself that can be used to identify you, such as your name, date or birth or where you live. Your **personal information** should be kept safe and not shared with anyone you do not know.



What is a digital footprint?

When we go online, everything we do leaves a digital footprint, that others can see. Every time we visit a website, comment on a photo download or play an app, a tiny bit of your information is saved. This makes up your digital footprint.



HT2

I.T. Powerful Knowledge

Y7


Term	Definition
Algorithm	A list of step-by-step instructions that a computer follows in order to get a task done
block	Puzzle Shaped pieces that are used to create a script
Debugging	To find or remove errors from a program



The Basics of Scratch




-What is Scratch? Scratch is a website/ app that lets us code our own stories, games and animations.

-Scratch helps us to learn how to use programming language, whilst also being creative and using problem-solving skills.




There are three main areas in Scratch:

- The **Blocks Palette** (on the left) contain all of the different blocks: puzzle piece commands which control the animation.
- Code Area** (in the middle) is where the blocks are placed to create a program.
- Stage with Sprite** (right) is where the output of the program is presented. The sprite is the character.






Attributes: There are three attributes of the sprite which we can change to make our animation: Code, Costumes, Sounds.

-Event Blocks: Event blocks are coloured yellow and are used to sense different events that happen e.g., the green flag being clicked.




-Action Blocks: Action blocks include 'Motion' blocks, 'Sound' blocks and 'Looks' blocks. They make the sprite move, make sounds and change appearance.





Overview

Repetition in Scratch



- **Programming** is when we make a set of instructions for computers to follow.
- **Scratch** is a program that we can use in order to code our own stories, animations and games. We can use **repeat and loop operator blocks** in order to make our programs more logical and efficient. These help to run code continuously or for a set number of times.
- We use **algorithms** (a set of instructions to perform a task) to sequence movements, actions and sounds in order to program effective animations.




HT1

Y7

PE- Orienteering

A competitive sport in which runners must find their way across rough country with the aid of a map and compass.

Key Skill or Term	Description
Orientating a map	Being able to rotate your map to face north.
Navigate	Using a map to plan a route.
Catching features	Be able to identify catching features – an identifiable point or boundary on a map used to navigate to control points. E.g. Buildings, trees, fences.
Line features	Be able to identify line features – anything linear (makes a line) on a map used to navigate to control points. E.g. Rivers, paths, tracks, roads.
Map reading	Understanding features and being able to use a legend (key).
Control 	What the competitor is looking for! A course consists of visiting a sequence of controls each of which is marked by a circle on the map. At each control you will find an orange and white "kite" and a punch and possibly an electronic control box.





HT1

Y7

PE – Indoor Cricket



Scoring

The aim for the batter in cricket is to try to score as many runs as possible throughout their innings. To score a run requires the batter to strike the ball and run to the opposite end of the pitch while their batting partner runs in the other direction. In situations where the fielding team has not recovered the ball, the batters can return back to score two or more runs. It is also possible to score runs without running the length of the pitch, if a batter can hit the ball past the boundary line (four runs) or over the line without bouncing (six runs).



Fielding positions