Minsthorpe Community College

Knowledge Organiser
Year 9 – Spring Term 1

Name:

P&A group:

Knowledge Assessment: Thursday 12th February 2026 – Period 2

Vision

Minsthorpe Community College: A place where everyone plays a part in strengthening our learning community through motivation, commitment and care.

Motivation • Commitment • Care

Look

Look at the information carefully.
Read it three times.
It may help to **say** it as you read it.

Cover

Cover it with your hand or a piece of paper.

Write

Write it out from memory.

Check

Check what you have written matches the information exactly.
Have you got it correct?
If so, tick your work to show it is correct.

Correct

If it **doesn't match exactly,** use **a different coloured pen to correct it.**
Repeat.
When you get it 100% correct, move on to the **next** piece of information.

Subject: English

Week 1 & Week 2: What is protest?

Vocabulary:

Protest: this can be used as a noun or a verb.

Noun – a statement or action that shows disapproval of something.

The 'Black Lives Matter' movement was a **protest** against racial discrimination.

Verb – the action of expressing disapproval. People can protest in lots of different ways including marches, petitions, and riots.

People **protest** about topics they feel passionately about.

Key Learning Points:

The suffragettes were a group of women in the UK who protested for the right to vote in parliamentary and general elections. They used a variety of protest tactics, including:

- Art: the suffragettes used art to promote their cause.
- Militant tactics: the suffragettes used unlawful and violent acts, to win the right to vote.

Emmeline Pankhurst - The leader of the suffragettes. She founded the Women's Social and Political Union (WSPU).

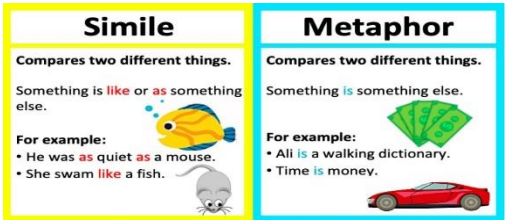
Emily Wilding Davison - An active member of the WSPU who was seriously injured and died after walking on to the racetrack at Epsom Derby in 1913.

KPOW: Comparison of Protest Poetry

Week 3 & Week 4: Poetic Terms and Devices

Poetic Terms and Devices:

- **Stanza**: a group of lines forming a verse of a poem. (Groups of lines are not called paragraphs in poetry).
- **Rhyme**: words that have or end with a sound that corresponds to another. E.g., head, bed, red.
- **Enjambment**: the continuation of a sentence or phrase from one line of poetry to the next.
- **Caesura**: a pause in the middle of a line of poetry. It usually comes in the form of punctuation, and the most common ones are full stops and commas.
- **Metaphor** - directly comparing one thing to another.
- **Simile** - comparing two things by describing one thing as being like another.



- **Emotive language** - words to make the reader feel a particular emotion.
- **Semantic field**: a collection of words which are related to one another by topic.

Year 9: Spring Term 1

Week 5 & 6: Creating & Presenting your poem

Vocabulary:

Propaganda - a form of communication that aims to influence or persuade an audience to support a certain cause or point of view. It can involve spreading ideas, information, or rumours to help or harm a person, cause, or institution. Propaganda is often biased and can selectively present facts to encourage a particular reaction.

How were WW1&2 presented through propaganda?

- Propaganda was used to portray the war as a battle between good and evil. For example, the German Kaiser was often depicted as a dangerous troublemaker in Allied propaganda.
- Propaganda was used to dehumanise the enemy – make them seem less human.
- Propaganda was used to glorify war and make it seem like a fun pass time to be a part of.

Wilfred Owen: a famous war poet who had firsthand experience as a soldier in WW1. He wrote poetry to express his suffering, expose the brutal reality of war, and protest against propaganda. He was killed in action a week before the end of WW1, November 4, 1918.

Subject: Maths

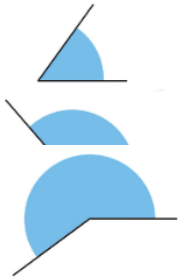
Week 1 & Week 2: Angle review

Types of angles

Acute angle: Between 0 and 90°

Obtuse angle: Between 90° and 180°

Reflex angle: Between 180° and 360°

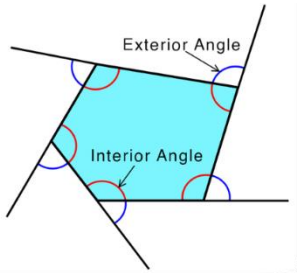


Angle facts

Angles around a point add up to 360°
Angles on a straight line add up to 180°
Vertically opposite angles are equal
Angles in a triangle add up to 180°
Angles in a quadrilateral add up to 360°

Angles in polygons

Interior angle + Exterior angle = 180°



Exterior angles of any polygon add up to 360°

Sum of the interior angles of polygons:
When n is the number of sides

(n – 2) x 180

KPOW: Reasoning with Geometry

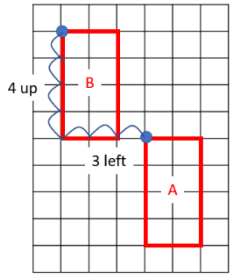
Week 3: Transformations

Translation

Translations are movements in a direction. To translate a shape, you need a column vector.

$$\begin{pmatrix} x \\ y \end{pmatrix}$$

A positive x value is a move of x spaces to the right.
A negative x value is a move of x spaces to the left.
A positive y value is a move of y spaces up.
A negative y value is a move of y spaces down.

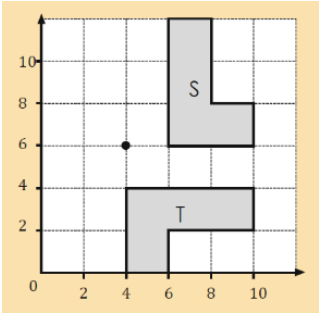


For example, the translation of vector $\begin{pmatrix} -3 \\ 4 \end{pmatrix}$ shows a move of 3 to the left and 4 up from the corresponding vertices.

Rotation

To rotate a shape means to turn a shape around a centre point. To carry out a rotation of a shape we need a direction, degrees, and centre of rotation.

For example, S has been rotated 90° clockwise about the point (4, 6).



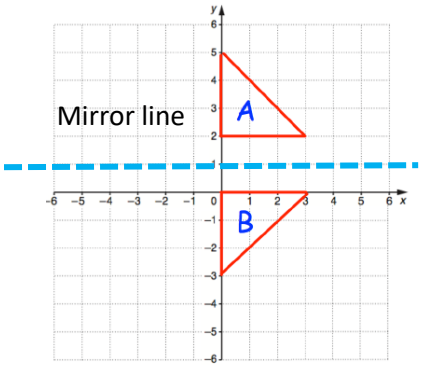
Year 9: Spring Term 1

Week 4: Transformations

Reflection

We can reflect a shape in a mirror line. The points and their reflections will be equidistant from the mirror line. To reflect a shape, we need to know the mirror line.

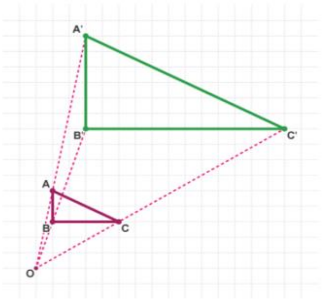
For example, triangle A has been reflected in the line y = 1.



Enlargement

To change the size of a shape by multiplying by a scale factor. This creates similar shapes. To enlarge a shape, we need a scale factor and centre of enlargement.

For example, triangle ABC has been enlarged by scale factor 3 about the centre of enlargement O



A scale factor <1 causes the shape to get smaller. A negative scale factor inverts the shape.

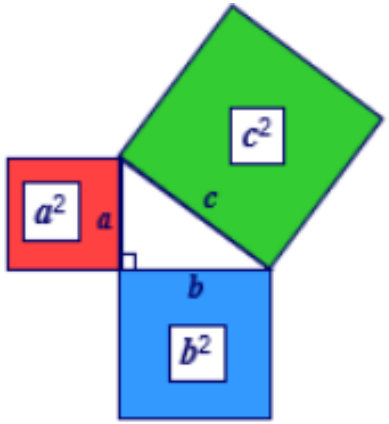
Subject: Maths	KPOW: Reasoning with Geometry	Year 9: Spring Term 1
Week 5: Pythagoras Theorem	Week 6: Pythagoras Theorem	

Key Words

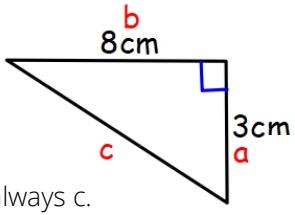
Right angle: An angle which is exactly 90°.
Hypotenuse: The side opposite the right angle in a right-angled triangle.
Square Number: The result when a number is multiplied by itself.
Square Root: A value that, when multiplied by itself, gives the number.

Pythagoras' theorem states that in a right-angled triangle the square on the hypotenuse is equal to the sum of the squares on the other two sides.

$$a^2 + b^2 = c^2$$



Using Pythagoras: Finding the Hypotenuse.



Step 1: Label the sides a, b and c. The hypotenuse is always c. $a^2 + b^2 = c^2$

Step 2: Substitute the known lengths. $3^2 + 8^2 = c^2$

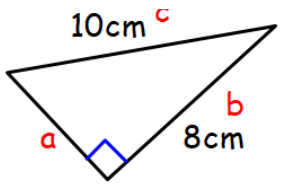
Step 3: Square the numbers. $9 + 64 = c^2$

Step 4: Add the numbers together. $75 = c^2$

Step 5: Square root to find the missing length. $\sqrt{75} = c$

$8.66cm = c$

Using Pythagoras: Finding a shorter side.



Step 1: Label the sides a, b and c. The hypotenuse is always c. $a^2 + b^2 = c^2$

Step 2: Substitute the known lengths. $a^2 + 8^2 = 10^2$

Step 3: Square the numbers. $a^2 + 64 = 100$

Step 4: Rearrange and subtract. $a^2 = 100 - 64$

Step 5: Square root to find the missing length. $a^2 = 36$

$a = \sqrt{36}$

$a = 6$

Pythagorean Triple: This is a set of three whole numbers where the sum of the squares of two of the numbers is equal to the square of the third number.

Subject: Physics

Year 9: Spring Term 1

Week 1: Efficiency & Dissipation

Keyword definitions

Dissipation - The process through which energy is transferred to the surroundings in a wasteful manner.

Efficiency – A measure of how well a machine or device transfers input energy into useful energy.

All systems waste energy due to **dissipation**. This cannot be avoided, and usually results in a transfer of **thermal energy** (heat).

However, we can reduce how much energy is wasted (for example, by adding **engine oil** to a car **engine**.

Week 2: Energy transfers

Keyword definitions

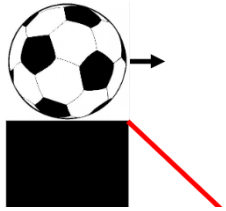
Kinetic – The energy store of moving objects.

Elastic – The energy store of stretched or deformed objects.

Joules – The unit of measurement for energy.

Energy can be found in different stores, and it is often **transferred** from one store to another. For example, a ball that was placed **high up** will have energy in its **gravitational** potential **energy** store.

When it rolls down the slope, this is transferred to **kinetic energy** (due to its movement) and **thermal energy** (wasted).



Week 3: Conduction

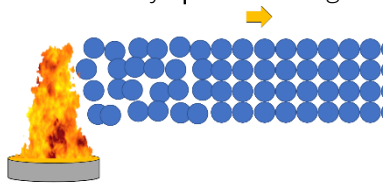
Keyword definitions

Conduction – The process by which thermal energy is transferred through a solid.

Convection – The process by which thermal energy is transferred through a fluid (liquid or gas).

Radiation – The transfer of thermal energy by waves.

Particles in a **solid** cannot move freely and they can only **vibrate** around a **fixed position**. When a solid is heated, particles near the source of heat start to vibrate first. This **vibration** will slowly **spread** through the solid, which will transfer energy (this is **conduction**).



Week 4: Insulation

Keyword definitions:

Insulation – The use of materials which are poor conductors of heat to reduce unwanted energy transfers.

Any object that is **hotter** than its **surroundings** will slowly **cool down** by transferring thermal energy to its surroundings. This cannot be avoided, but it can be **reduced** by using materials like **rock wool** in the loft of a house for example.

Week 5: Specific Heat Capacity

Keyword definitions:

Specific heat capacity – The amount of energy needed to raise the temperature of 1kg of a material by 1°C.

When heating up a material, three factors must be taken in account in order to calculate how much energy is needed:

- The amount of material (mass).
- How much you want to heat it up (temperature change).
- The material itself (specific heat capacity).

For example, heating up water requires a lot more energy than copper, due to its chemical bonds.

Week 6: Practical Investigation

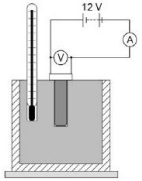
Keyword definitions

Resolution – The smallest difference a piece of equipment can measure.

Accurate – A result that is close to the true value.

Precise – A group of results which are very close together.

To find out the **specific heat capacity** of a material, we can provide it with a measured amount of **energy** with an electric **heater**, and measure how much its **temperature** increases with a **thermometer**. If the mass of the material is known, an **equation** can be used to calculate its specific heat capacity.



Subject: Biology

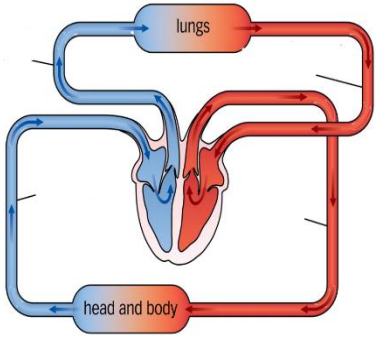
Year 9: Spring Term 1

Week 1: The lungs and the heart

Keyword definitions

Lungs – A pair of organs in the chest that supplies the body with **oxygen** and removes **carbon dioxide** from the body.

Heart – A muscle in the chest that pumps blood through the circulatory system around the body.



The heart and lungs work together to ensure that **oxygenated blood** flows from the lungs to the body and **deoxygenated blood** flows from the body back to the heart and lungs.

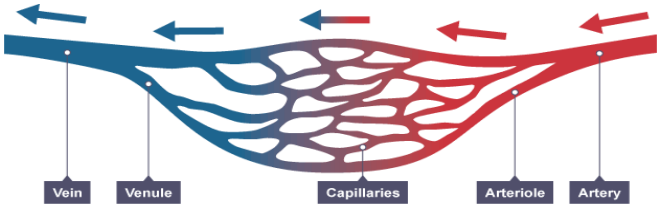
Week 2: Blood and blood vessels

Keyword definitions

Circulation – The movement of blood through different vessels in the body.

Blood vessels: Arteries, **veins** and **capillaries** are the blood vessels that transport blood around the body.

Haemoglobin - An iron-containing **protein** inside of red blood cells that temporarily holds onto oxygen.



Arteries carry oxygenated blood to the capillaries where it is absorbed into the body; **veins** carry deoxygenated blood from the capillaries in the body back to the lungs.

Week 3: Respiration in animals

Keyword definitions

Respiration – An **exothermic** reaction that releases energy from the glucose.

Exothermic – A reaction that releases heat energy to the surroundings.

Aerobic respiration - Respiration that involves oxygen. In **aerobic respiration,** glucose is broken down (oxidisation) and in the process energy is released.

Anaerobic respiration - Respiration that does not involve oxygen. This process releases less energy and also produces **lactic acid**.

Week 4: Metabolism and response to exercise

Keyword definitions:

Metabolism – Metabolism is the sum (total) of all **chemical reactions** that take place in an organism's cell or body. There are an estimated 37,000,000,000,000,000,000,000 taking place in the body every second.

During **exercise,** your **muscles** may respire **anaerobically** resulting in an oxygen debt. This is the amount of extra **oxygen** your body needs to react with the build-up of **lactic acid** and remove it from cells.

Week 5: Non-communicable diseases

Keyword definitions:

Non-communicable disease – A disease that cannot be passed from person to person and is typically long-lasting.

Correlation – A connection or relationship between two or more facts or numbers.

Coronary heart disease is caused by a build-up of fatty substances in the blood vessels supplying the heart.

This can slow the blood supply to the heart which may lead to **heart failure** or a **heart attack**.

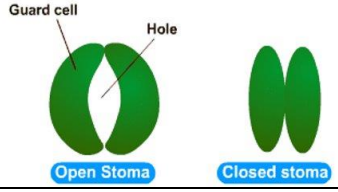
Week 6: Plant organisation

Keyword definitions

Transpiration – Transpiration is the evaporation of water through the **stomata** of a leaf, after travelling from the roots, up the **xylem** and into the leaf.

Stomata – Tiny holes on the surface of a leaf that allow the flow of gasses in and out of the plant.

The **guard cells** change shape to allow the stomata to open when **gas exchange** is required and close when it's not needed.



Xylem – A tube within a plant that allows water and mineral ions to flow up from the roots.

Subject: French	KPOW: Free Time Activities	Year 9: Term 3
Week 1: Free time activities	**Week 2:** Leisure activities in the past	**Week 3**: Hobbies & leisure activities – Imperfect
j'aime [I like] j'aime bien/beaucoup [I really like] je préfère [I prefer] je déteste [I hate] regarder [to watch] jouer [to play] aller [to go] lire [to read] danser [to dance] courir [to go running] écouter [to listen] faire [to do] mon activité préféré [my favourite activity] plus intéressant [more interesting] passionnant [exciting] reposant [relaxing] ennuyeux [boring]	j'ai écrit [I wrote] j'ai eu [I had] j'étais [I was] j'ai fait [I did] j'ai mis [I put on] j'ai pris [I took] j'ai couru [I ran] j'ai lu [I read] j'ai ri [I laughed] j'ai vu [I saw] j'ai reçu [I received] j'ai bu [I drank] j'ai téléchargé [I downloaded] j'ai joué [I played] malade [ill] fatigué(e) [tired]	j'aimais [I used to like] j'adorais [I used to love] je préférais [I used to prefer] j'écoutais [I used to listen to] je regardais [I used to watch] je jouais [I used to play] je dansais [I used to dance] j'allais [I used to go] je chantais [I used to sing] je lisais [I used to read] faire de la cuisine [to do the cooking] sortir [to go out] la lecture [reading] la mode [fashion] la natation [swimming] les romans [novels]
Week 4: Future plans for leisure activities	**Week 5:** TV, Music, Cinema & Reflexive Verbs	**Week 6:** Revision
le week-end prochain [next weekend] je vais [I am going] il va [he is going] elle va [she is going] on va [we are going] nous allons [we are going] ils/elles vont [they are going] faire des promenades [to go walking] faire de la natation [to go swimming] faire de l'équitation [to go horseriding] faire de l'escalade [to go climbing] faire du vélo [to go cycling] venir avec [to come with…] ça va être [it is going to be] relaxant [relaxing] génial [great]	je regarde [I watch] mon émission préférée [my favourite programme] devant [in front of] l'écran [screen] j'écoute [I listen] le chanteur/la chanteuse [singer] mon portable [my mobile phone] je m'intéresse à [I'm interested in] les actualités [the news/current affairs] on se ressemble [we are similar] on s'entend bien [we get on well] on se relaxe [we relax] on se dispute [we argue] on se lève [we get up] on se couche [we go to bed]	Revise all of the vocabulary and structures from weeks 1-5.

Subject: Geography

KPOW: Resource Management

Year 9: Term – Spring 1

Week 1: Do we have enough?

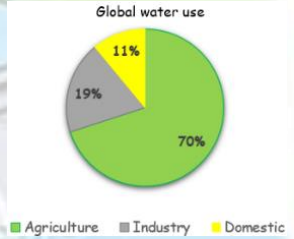
We need **resources** to survive, but resources are unequally distributed around the world. The 3 main resources are **water, food and energy**.
Only **3%** of all the water on Earth is fresh water and suitable for human use. Of that 3% only **1%** is **easily accessible in rivers and lakes.**
Many countries suffer from **water stress**, **when a country uses 80% or more of their available water**.
The areas that suffer the most are parts of northern Africa and southern Asia.

Negative consequences of water stress include:

- **Conflict**
- Crops fail

Week 2: Water

In the UK, around 28% of our total water supply is **groundwater**, pumped from **aquifers** – an underground store of water. The rest is surface water, pumped from **reservoirs**.



Agriculture uses most of the world's fresh water supply.

5 strategies to try and increase fresh water supplies:

- **Catch it as it falls**
- Stop wasting it
- **Recycle it**
- Move it
- Take it from the sea

Week 3: Food

Food security is when people have reliable access to enough food.
There is plenty of food available in the UK, but it's not all produced here. Around 64% of the food we eat in the UK is produced here and the rest is **imported**.
A high % of our imported food is grown in warmer climates, such as bananas, oranges, tea & coffee, so that we can enjoy them all year round.

Some people don't have access to enough food- this is called **food insecurity**. This can be for several reasons:

- **poor quality soil**
- lack of water
- climate change

Week 4: Energy

Fossil fuels are burnt to create energy for human use. They are made from the **remains of plants and animals** that died millions of years ago and became buried under layers of rock. They are non-renewable.

Oil is the most used fossil fuel across the world.

When **fossil fuels are burnt** to make energy, they **release carbon dioxide**, which is a greenhouse gas, and contributes to climate change.
Reasons for the increase of fossil fuels:

- increase in population
- **increase in manufacturing**
- increase in transport

Week 5: Renewables

Renewable energy comes from the Earth's natural resources and will **never run out**.

Renewable energy is a clean energy that **doesn't emit carbon emissions**. It tends to be **cheaper** than using non-renewable energy sources.

There are many types of renewable energy including:

- **Solar** – energy from the Sun
- Biomass – plant & animal matter
- Wind
- **Hydroelectric power** – water
- Geothermal – heat from the earth

Week 6: Why must we change our ways?

Scientists have identified 5 mass extinctions, but another mass extinction could be on its way AND it's our fault! Many human activities such as **settlement growth** and **deforestation** cause animals to become endangered and often **extinct.** This means the species no longer exists.

We need to learn how to live in a much more **sustainable way** by:

- Putting an end to hunger, achieving food security for everyone
- Limiting climate change
- Buying and using things in a responsible way
- **Protecting other species**; for example, stopping deforestation.

Subject: History	KPOW: How did Hitler become Chancellor?	Year 9: Spring Term 1

Week 1: The Russian Revolution

Causes of the Revolution: Many people were poor and unhappy with the **Tsar (Russian leader before 1917).** The economy was in trouble, farms were struggling, unemployment was high, and millions had died in the First World War. **The people blamed the Tsar for Russia's problems.**

Timeline of events in 1917.
2nd March: The Tsar tried to get back to St Petersburg, but the workers stopped him.
15th March: Tsar Nicholas was forced to abdicate (give up the throne). A **temporary government was put in place** but they struggled to lead.
April: Lenin criticised the government. He promised the workers 'Peace, Land and Bread'.
7th November: Lenin and the Bolsheviks took power.

Week 2: Communism and the USSR

Communism: a political and economic system where individual people **don't own land, property, and businesses.**

USSR flag: Red = revolution. Gold star = power. Hammer = factory workers. Sickle = farm workers.

How did Stalin control the USSR?
By **1929 Stalin** had taken over from Lenin as ruler. Anyone who opposed him was arrested. **Propaganda was used to make Stalin popular.**
How did Stalin change the USSR?
Unemployment was non-existent but working hours were long and pay was low. Women were encouraged to work but there was not enough childcare leading to **children living on the streets**. In school students learnt about communism and how Lenin and Stalin were

Week 3: Fascism and Italy

Fascism: the political idea where the government controls everything and **people lose the freedom** to say or do as they want.
Problems in Italy after the First World War:
600,000 dead, 2 million unemployed, food shortages and high taxes.
Benito Mussolini: Formed the **Fascist Party in 1919.** He promised to bring glory and discipline back to Italy. In 1922 the King made him Prime Minister. Very soon, opposition was banned. **He liked to be known as 'il Duce' (meaning 'The Leader').**
Life in fascist Italy:

- Political parties banned.
- Government control of newspapers
- Unemployed joined the army.
- People free to run their own businesses.

Week 4: Germany – the rise of Adolf Hitler

Problems in Germany: Hyperinflation = the price of goods and services rise uncontrollably.
Plus: High unemployment, factories closed so people were unhappy with the government.
Rise to power: Hitler told the people what they wanted to hear. **He was a brilliant public speaker** and held meetings where he told people about his ideas for a better Germany. **Hitler's policies** included making Germany strong again (**Nationalism**), controlling big businesses (**Socialism**), a belief that the Germans were the master race and that men and women should have **traditional roles. By 1928 Hitler had become very popular** and the Nazis were the largest party in the Reichstag (German Parliament) and by **1933 Hitler was Chancellor of Germany.**

Week 5: KPOW/Life in Nazi Germany

- The National Labour Service set up in 1935 offered men aged between 18 and 25 jobs
- Jobs available helped to improve the country: Building schools, hospitals, roads, and railways.

Treatment of Women:

- Women were **taught to be good wives and mothers.**
- Newly married couples were given loans to encourage them to have children.
- **Medals given to women** who had the **most children.**

Propaganda and Censorship:

- Hitler wanted to **control what people thought.**
- Newspapers, films and books were all controlled by the government.

Week 6: Life in a Totalitarian State

Totalitarian = a form of rule in which the government attempts to maintain **'total' control** over society,
Youth: School prepared young people for adulthood. **Boys studied sport**, science and maths. **Girls studied cookery.**
Propaganda: The swastika symbol was on every government uniform and building and **pictures of Hitler were displayed everywhere.** Sport events such as the 1936 Olympics were used to demonstrate the belief in the superiority of the Aryan (typically blond haired and blue eyed) race.
The Police State: Enemies of the state were sent to **concentration camps**. The Gestapo **(Secret Police) monitored the population** for signs of resistance and judges had to **swear loyalty to the Nazi regime.**

Subject: DT - Food

Week 1 & 2: Health and Safety and recipes

Skills/terms and health in Food

A HAZARD in a kitchen is something that could cause illness or injury.

Plan to make deep fried chicken nuggets and chips:

1. Cut chicken and coat in flour, egg, and breadcrumb.
2. Place in hot oil to cook.
3. Chop potatoes into chip shapes and fry in same oil.
   DEEP FAT FRYING – COMPLEX SKILL

ENROBING= coating an ingredient in another-E.g.- coating the chicken in flour, egg then crumbs.

Plan to make sausage rolls:

1. Lay out pastry and place meat in 2 rows on the long side.
2. Cut in half and fold over.
3. Cut into pieces and glaze with an egg then bake. Heat: 75 degrees.
4. BAKING- MEDIUM SKILL

GLAZING= brushing an egg wash onto the outside of a product-E.g.- covering pastry in egg to bake.

KPOW: Skills in Practical

Week 3 & 4: Hospitality Theory

Type of provider	Definition	Examples
ACCOMODATION	Somewhere that you can stay overnight.	Hotels, Bed and Breakfasts (B&Bs), hostels, holiday parks, campsites, cruise ships.
RESTAURANTS and BARS	A place that you would go to eat and/or drink.	Pubs, nightclubs, casinos, restaurants, cafes, tearooms, coffee shops, fast food outlets.
TRAVEL and TOURISM	Anything that allows people to travel to another destination away from their home (e.g. for holidays)	Airlines, leisure centres, travel agents, train services, bus services, taxis/Uber

The Kitchen Brigade

Head chef/executive chef- in charge
Sous chef- second in charge
Chef de partie (section chefs)- responsible for specific items
Commis chef- trainee chef
Plongeur (dishwasher)- cleans up and washes pots.

COMMERCIAL Vs NON-COMMERCIAL

Commercial establishments are there to make a profit- examples include- restaurants, fast food outlets, hotels, guest houses.

Non-commercial residential establishments do not make a profit- examples include- hospitals, prisons, armed forces barracks, council run care homes.

TYPES OF FOOD SERVICE

- CAFETERIA- customers line up and are served ready made food from a selection.
- BUFFET- customers pay and can select as much food as they want.
- FAST FOOD- quick turnaround from ordering to receiving- typically unhealthy and convenient.
- WAITED ON- waiters bring food to the table.
- SILVER SERVICE- served to a large amount of guests from silverware.

Year 9: Spring Term 1

Week 5 & 6: Recipes

Plan to make a cheesecake:

1. In a bowl, add biscuits and smash up, then add melted butter to pack together and add to tin.
2. Add cream cheese, cream, icing and vanilla and whisk together and add to the top of biscuits- leave to set and decorate.

WHISKING=COMPLEX SKILL-E.g- using an electric whisk to combine ingredients together.

Plan to make curry and naan bread:

1. Cut chicken up and fry with onions and garlic then add curry powder and chilli and cream- leave to simmer.
2. In a bowl, add all dry ingredients with water and yoghurt and mix until it forms a dough.
3. Split into pieces, roll out and dry fry.

DOVETAILING=COMPLEX SKILL- E.g.- making multiple products at one time.

Subject: DT – Product Design

Week 1 & Week 2

De Stijl inspire Desk Lamp

Product Analysis

Using ACCESSFM

A – Aesthetics
C – Cost
C – Customer
E – Environment
S – Size
S – Safety
F – Function
M – Materials

Sustainable Design

To create products and services that are not harmful to the environment or use up the planet's natural resources, therefore protecting our planet for future generations.

In order to achieve this, design use the 6 Rs of sustainability.

Recycle - Reprocess a material or product and make something else.
Re-use - Use a product to make something else with all or parts of it.
Reduce - Cut down the amount of material and energy you use as possible.
Refuse - Don't buy a product if you don't need it or it's bad for environment.
Rethink - Design in a way that considers people and the environment.
Repair - When a product breaks down or doesn't work, try to fix it.

KPOW: Product Analysis & Initial Ideas

Week 3 & Week 4

Globalisation

Building a worldwide network of communication, transportation, and trade.

Global Production

This term is used to describe how one product can be produced all over the world.

Advantages

Makes products cheaper, therefore lower cost for consumers.

Disadvantages

Carbon footprint (environmental) & ethical/moral considerations.

Product Manufacture

CAD Design - Computer aided designs can be e-mailed from one side of the world to the other.

Transportation

Ships, lorries and sometimes aeroplanes are used to transport products and components around the world.

Just-in-time Manufacturing

Just-in-time manufacturing is when materials/ components are ordered so they arrive just as they are needed.

Advantages

The company does not have to pay for large amounts of stock in one go.

Disadvantages

There is no spare finished product available to meet unexpected orders.

Year 9: Spring Term 1

Week 5 & Week 6

Materials - Timbers

Hardwoods

Come from deciduous trees & grow slowly.
Ash, beech, oak, mahogany, more expensive

Softwoods

Come from evergreen trees & grow quickly.
Cedar, Scots pine, Parana pine, Spruce.

Properties

OAK - The timber is very *strong* and *hard* to work with.
PINE - Easy to work with/ lightweight prone to scratches/dents.

Materials - Fibres

Natural Fibres – From plants or animals.
Manufactured fibres – Combined with chemicals.

Properties

Natural

These fibres come from renewable source.
They are also biodegradable (something that will decay (break down) over time).
Generally absorbent.
Poor resistance to chemical damage.
Durable – especially animal fibres.

Manufactured

Less absorbent than natural fibres.
Wrinkle less than plant fibres.
Easier to care for than natural fibres (i.e. wash/clean).
Resistant to moths/insects.
Durable

Subject: DT - Textiles

Week 1 & Week 2: Mobile Phone Holder

Specification = a list of requirements that the product should fulfil.

- **Specification Points**: Target Market, Function, Aesthetics, Materials, Ergonomics & Quality.
- There are 2 categories, **Essential** (product MUST do this) and **Desirable** (the product COULD do this).

Theory:

SEC - **Social, ethical** and **cultural** factors relating to manufacture and buying products:

- **Social** – consider how products can affect communities (child labour, working conditions, working hours and wage)
- **Ethical** – consider the welfare of people and animals (Coltan mineral known as Conflict mineral, child labour used, destroying gorillas' habitats, animals being poached. Angora rabbits, fur ripped out)
- **Cultural** – take care not to offend groups of people with different traditions & beliefs (cultural appropriation, copying ideas without understanding or respect e.g. Sikh Turban – used by Gucci and Navajo tribe images used by Urban Outfitters)

KPOW: EOM Test

Week 3 & Week 4: Market Push & Technology Pull

This drives the development of new products:

Technology push

Advances in technology drive the design and manufacture of a new product.

Market pull

Consumer needs or wants drive the design and manufacture of new products.

Technology Push - Research & Development: In industry Research & Development departments are always coming up with new technologies, materials, and manufacturing methods. This then drives the design of new products or improves existing ones making them cheaper, function better, look better and are more efficient.

Smart Phone is a product which has been developed by 'Technology Push'. Touch screen technology & GPS.

Market Pull – Designers design and manufacturers make products to satisfy consumer wants, needs, and demands. Changing fashions and social attitudes affect people's wants. New Products are developed to meet society's desire for products that are better for the environment, meet trends and respond to focus groups' feedback.

Energy efficient lightbulb is an example of 'Market Pull'.

Year 9: Spring Term 1

Week 5 & 6: New Technologies & their Impact

Artificial Intelligence ~ Computers that copy or simulate human intelligence.
Example: Cars self-park/ drive = could reduce road accidents.

Biometrics ~ Parts of a person's body are used for identification purposes.
Example: Smartphone uses fingerprint readers, retina or voice recognition = more secure.

Robotics ~ Perform wide range of sometimes difficult physical tasks.
Example: defusing bombs, search & rescue operations = safer for humans. Spraying cars = consistency and speed improved, and costs reduced.

Virtual Reality ~ Computers are used to create an artificial environment where users can interact with it as if it were real.
Example: Virtual Buildings, designers and architects can walk through it checking for potential errors – modifications can be made quickly and safter buildings created.

Key Words:

Appropriating – The act of appropriating or taking possession of something, often without permission or consent.

Focus Group – Market research method companies use to better understand their target audience's thoughts and opinions about products.

Criteria – A standard by which something can be judged or decided.

Manipulate – Handle or control (a tool, mechanism, information etc.) in a skilful manner.

Subject: Core PE

Week 1 & Week 2: Self-Esteem

Definition- Self-esteem is used to describe a person's overall self-worth or personal value. In other words, how much you appreciate and like yourself.

How does exercise help with Self-Esteem? -

- Feeling part of something when you join a team.
- Performing better due to what you have practiced.
- Feeling better about yourself as exercise helps to lose weight.

KPOW: Key Words

Week 3 & Week 4: Relieve Stress

Definition- Exercise relieves stress by releasing the hormone **serotonin**. This make you feel better about what was causing you stress as well as giving you a more positive outlook on life.

How does exercise help to Relieve Stress? -

If you are having a bad day, going on a run / bike ride / swim / any other low intensity exercise can help you feel less stressed.

Year 9: Spring Term 1

Week 5 & Week 6: Mental Challenge

Definition- Exercise can act as a mental challenge. Overcoming this can lead to the individual feeling more motivated.

How does exercise help Mental Challenge? -

Setting yourself a goal to run 5km without stopping, (or something that you will find challenging), can increase: confidence, self-esteem and motivation.

Subject: Computing & Digital Media

Week 1 & Week 2

Binary Shift: The process of moving the digits in a binary number to the left or right a set number of times.

Boolean: A binary variable that can have one of two possible values, 0 (False) or 1 (True).

Binary to Hex conversion:

8	4	2	1	8	4	2	1
0	1	0	1	1	1	0	0

A=10, B=11, C=12, D=13, E=14, F=15

The left side adds up to 5 and the right side adds up to 12 (in Hex this is C), so the answer would be **5C.**

A **binary shift** either multiplies (*) or divides (/) a binary number. A **left shift multiplies**, a **right shift divides**.

Left shift of 2 example (multiply)

0	1	1	1	1	0	1	1
1	1	1	0	1	1	0	0

In this example, the 8-bit number has shifted 2 places to the left. This means we lose 2 bits from the left and add 2 0s to the right.

Right shift of 3 example (divide)

0	1	1	1	1	0	1	1
0	0	0	0	1	1	1	1

In this example, the 8-bit number has shifted 3 places to the right. This means we lose 3 bits from the right and add 3 0s to the left.

Effects of left and right binary shifts					
Left 1	Left 2	Left 3	Right 1	Right 2	Right 3
*2	*4	*8	/2	/4	/8

KPOW: Computer Science Spotlight

Week 3 & Week 4

Insertion Sort: A sorting algorithm that compares values in turn, starting with the second value in the list.

Selection: Involves making a decision based on a condition to determine the next path a program will take.

Insertion Sort is a simple sorting algorithm that builds the final sorted list one item at a time by comparisons.

20	7	10	5	8

The first item in the list is classed as sorted so we start with the second item. Does 7 come before or after 20?

20	7	10	5	8
7	20	10	5	8

7 comes before 20, so we place 7 in the correct position. Repeat the process for the next number. Where does 10 belong in the green ordered list?

20	7	10	5	8
7	20	10	5	8
7	10	20	5	8

Now that we have placed 10 in the correct position, keep going until all numbers are sorted.

20	7	10	5	8
7	20	10	5	8
7	10	20	5	8
5	7	10	20	8
5	7	8	10	20

Remember there are two other types of sort algorithms:

- Bubble Sort
- Merge Sort

Year 9: Spring Term 1

Week 5 & Week 6

Algorithm: A set of steps to solve a problem.

Sequence: To put instructions into a logical order.

Python Programming

Data Type	Description	Example
Character	A single letter	'a'
String	Multiple characters	'cat'
Integer	Whole number	5
Real/float	Decimal number	6.2
Boolean	True/False	True

How to output (print):

```
print("Hello World")
```

Assigning variables:

```
message = "Hello World!"
```

Inputting information:

```
num = input("Please enter a number")
```

Casting to an integer:

```
age = int(input("Please enter your age"))
```

If statement:

```
score = 77
if score > 75:
    print("Pass")
else:
    print("Fail")
```

Subject: Music

Week 1 & Week 2: Reggae Music

Reggae music first started in Jamaica in the **1960s**. By the 1970s, its popularity had spread to other countries, particularly Britain.

Reggae comes from the country **Jamaica.**

Reggae has a very strong **rhythm,** and the songs often use words and sounds that come from Jamaica.

Jamaica is in the Caribbean Islands…

The **Caribbean Islands** is a region consisting of more than 700 islands; it is known for its diverse culture & rich history. The Caribbean is the birthplace of several music genres, including **Reggae.**

KPOW: 60s and 70s

Week 3 & Week 4: Bob Marley

Bob Marley (1945–1981) was a Jamaican singer, songwriter, and musician who is widely regarded as the most famous and influential reggae artist in history. He helped bring reggae music, a genre that started in Jamaica, to the global stage.

Fret Board:

The **Fred Board** has metal bars running across the neck divided into sections. The Fred board is found on stringed instruments.

Pressing a string down against a fret changes its pitch.

We play using our **LEFT** hand.

Understanding the fretboard is essential for string instrument players as it is fundamental to producing the correct notes and playing music accurately.

Year 9: Spring Term 1

Week 5 & Week 6

Note Values:

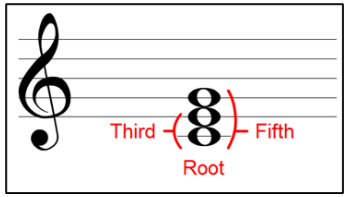
British note names	Note symbols	Note value
Semibreve	𝅝	4 beats
Minim	𝅗𝅥	2 beats
Crotchet	♩	1 beat
Quaver	♪	1/2 of a beat
Semiquaver	𝅘𝅥𝅯	1/4 of a beat

What is a Chord?

A chord is a combination of **two or more** notes put together.

Chords begin with a single note called the **root note.**

A **triad** is made up of three notes created from the root, third and fifth.



A chord uses your 1st, 3rd and 5th fingers starting on the note that is written.

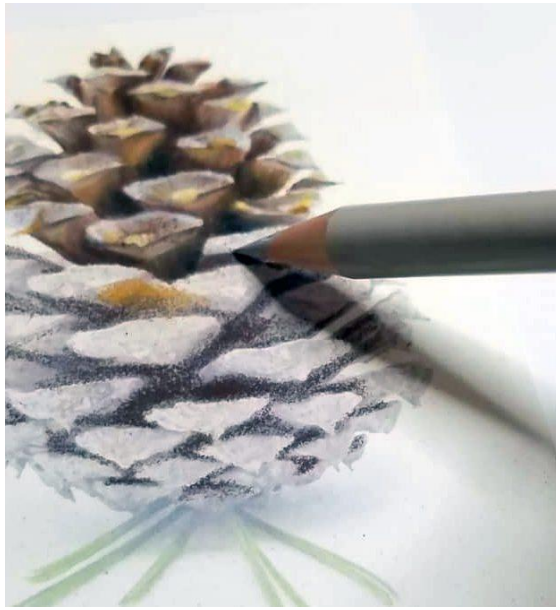
Subject: Art

Week 1 & Week 2: Keywords & Baseline

Keywords and definitions

- Quality (of work) – factors such as mark making and relevance contribute to how an art work is communicated to others.
- Experimental (art) – work that explores new ideas, techniques, or materials.
- Conclusion (final outcome) – the final part of a project.

Observational drawing - to record a subject as accurately as possible.
Materials used – colour pencil



KPOW: Natural forms

Week 3 & Week 4: Artist Page

Artist Research – Debbi Payne

- An artist and illustrator from Texas, USA
- Her work can be described as whimsical with bright and bold colours.
- Her work can be found on products ranging from fabrics, garden flags, ceramics, and paper products.
- She has a line of self-published colouring books.
- Her work is inspired by nature and spreads positive messages.

Year 9: Spring Term 1

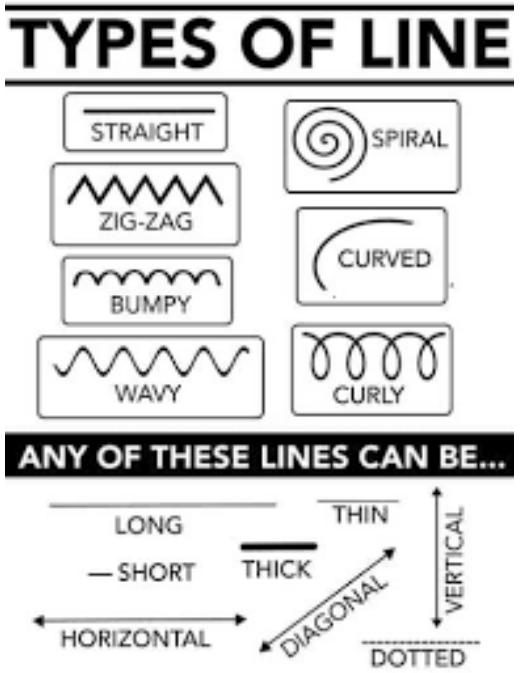
Week 5 & Week 6: Development of skills

Art skills

Types of line - The most common *types of lines in art* are horizontal, vertical, diagonal, zigzag, curved, dotted, broken, spiral, and curly lines.

Mark making is the action of producing marks on a surface such as paper, canvas, and textiles.

Types of line and other mark making skills will be used to create your own natural form inspired research pages and outcomes.



Subject: Drama

Week 1 & Week 2: Verbatim overview

Verbatim Theatre:
Verbatim Theatre is a form of documentary theatre that uses the exact words of real people. The playwright or director interviews people and then uses their words to create the script of the play.

Verbatim theatre performer skills
To perform verbatim theatre effectively and portray the role of a real person, an actor will need to develop the skills of:

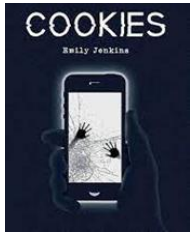
- Vocal accuracy – To reproduce the exact speech patterns, accents, rhythms, hesitations, fillers, and tone of the original speaker.
- Physical embodiment – To attempt to recreate a real person's gestures, posture, habits, and physical rhythms.
- Active listening – To listen closely to recordings of interviewees and to perform the lines as if you are hearing them for the first time.

Keyword: Verbatim
In exactly the same words as were used originally.

KPOW: Verbatim Theatre

Week 3 & Week 4: Cookies

Cookies:
Cookies is a 2017 play by British playwright Emily Jenkins. It merges aspects of verbatim interviews with documentary theatre, topical subjects, and news articles to tell the story of teenagers dealing with the negative effects that the internet has on their lives.



Themes:
Cookies tackles hard hitting themes that are relevant to teenagers today, specifically relating to their online presence through the internet and social media.
It focuses on:

- Radicalisation
- Cyberbullying
- Dangers of online friendships/relationships
- Digital culture

Haymarket Theatre:
The Haymarket theatre in London's west end was built in 1720 and is still one of the oldest playhouses in use today.

- It has a proscenium arched stage
- It has a capacity of 942
- It houses both plays and musicals

'Cookies' by Emily Jenkins received its premiere at the theatre in 2017

Year 9: Spring Term 1

Week 5 & Week 6: Verbatim ensemble

Interviews:

Interviews play an important role in verbatim theatre as they are the starting point of any production. For a piece of theatre to be called verbatim or documentary, it must use the words of real people and their accounts of events. The benefits of working in this way are:

- The piece is authentic and true.
- The playwright doesn't need to write the script, only edit the transcripts of the interviews.

Ensemble theatre:
Ensemble theatre refers to the type of theatre where there is no featured leading role. Each performer plays an equally important role in the production, and their scenes and stories intertwine and come together to create the overall piece. 'Cookies' by Emily Jenkins is an example of ensemble theatre.

Keyword: Playwright
A person who writes plays.

Subject: Learning 4 Life

Year 9: Spring Term 1

Week 1 & Week 2: Keywords

Please learn the keywords and definitions.

Skills	The ability to do something well.
Volunteer	To do unpaid work.
Qualities	They are parts of your attributes or characteristics.
Business	A person's regular occupation, profession, or trade.
Future proofing	Taking the time to plan and organise for the future.
Work Experience	Trialing out work/employment for a short period of time.
Motivation	What motivates you to do something.
Labour Market	The availability of jobs and the demand for them.
Passions	Something you love doing.
Entrepreneur	A person who sets up a business.
Tuition Fees	Money you pay to go to university.
Apprenticeship	Where you work and learn at the same time.

Week 3 & Week 4: Christian Parable

House built on rock.

This parable is from **Matthew** 7: 24-27 in the Bible.
A parable is a story which has **meaning and purpose,** and you should learn from it.

24 "Therefore, whoever hears these sayings of Mine, and does them, I will liken him to a **wise man** who built his house on the **rock:** 25 and the rain descended, the floods came, and the winds blew and beat on that house; and it did not fall, for it was founded on the rock.
26 "But everyone who hears these sayings of Mine, and does not do them, will be like a **foolish man** who built his house on the **sand**: 27 and the rain descended, the floods came, and the winds blew and beat on that house; and it fell. And great was its fall."

In the parable, Jesus compares building a life on the teachings of Jesus to building a house on solid rock, which is resistant to floods. The rock symbolises a solid foundation, strength, and stability. The parable illustrates the importance of obeying Jesus' teachings and example.

When we compare this to careers, we should rely on wise people who can give solid careers education and guidance information like Mr Dowey and L4L teachers, to help make informed decisions.
https://youtu.be/I6S3cRVLMFQ?si=3yWnQ2iiqjVht7Gh

Week 5 & Week 6: Work Experience

	Work experience is time spent in a workplace learning about a job role, a company, or a career sector.
	Most work experience is unpaid though there are some types of opportunities where you can earn money.
	Companies are starting to develop 'virtual' placements, where you work remotely using digital technology, without having to go into the workplace.
	Work experience is not just for young people. It can be useful for career changers and people looking to get back into work. It can help you to gain skills and decide what to do.

- In 2021, less than 17% of students had undertaken work experience in the last year.
- Lack of work experience was the main struggle for job-seeking university students.
- 75% of students found work experience useful in developing skills.
- Majority of work experience undertaken was unpaid.

Home Learning Schedule

Day	Subject to Learn	
Monday	English and Learning 4 Life	
Tuesday	Maths and Computing & Digital Media	Sparx Week B
Wednesday	Science	Educake Week A
Thursday	French, History and Geography	
Friday	Design Technology, PE & Creative	

Home Learning is set every **Monday** and will be submitted in **P&A Time** every **Monday.**

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