Minsthorpe Community College

Knowledge Organiser
Year 8 – Spring Term 2

Name:

P&A group:

Knowledge Assessment: Friday 22nd March 2024 – Period 3

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	KPOW: Unseen Poetry Analysis	Year 8: Spring Term 2
Week 1 & 2: Poetic Devices and Romantic love	**Week 3 & 4:** Developing Complex Terminology	**Week 5:** Creating and presenting your poem
Poetic Terminology (T) Semantic field: a collection of words which are related to one another be it through their similar meanings, or through a more abstract relation. Rhyme: have or end with a sound that corresponds to another. E.g. head, bed, red. Stanza: a group of lines forming the basic recurring metrical unit in a poem; a verse. (Groups of lines are not called paragraphs in poetry). 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. Sonnet: a poem of fourteen lines using any of a number of formal rhyme schemes, in English typically having ten syllables per line. Vocabulary Stereotype: a widely held, but fixed and oversimplified image or idea of a particular type of person or thing. Conventional: based on or in accordance with what is generally done or believed. Burden: a load, typically a heavy one. Lament: to express grief or regret about something.	Poetic Terminology (T) *Imagery*: visually descriptive or figurative language, especially in a literary work. *Extended metaphor*: is a literary term referring to when a writer compares unrelated objects or ideas with figurative language for more than a sentence. This literary device may be used throughout a paragraph, chapter, or even a complete work. *Allegory*: a story, poem, or picture that can be interpreted to reveal a hidden meaning, typically a moral or political one. *Cyclical Structure*: A story or poem that ends in the same place it began is commonly called a circular or cyclical narrative. *Volta*: Italian word for "turn." In a sonnet, the volta is the turn of thought or argument. Vocabulary Disparity: lack of similarity or equality; inequality; difference: a disparity in age; disparity in rank. Exacerbate: make (a problem, bad situation, or negative feeling) worse.	Poetic Terminology (T) *Direct address*:: when speaker or writer communicates a message directly to another individual or group of individuals. *Second Person Pronouns*: you, your, yours- often used to create direct address. Vocabulary Oblivious: not aware of or concerned about what is happening around one. Irony: a state of affairs or an event that seems deliberately contrary to what one expects and is often wryly amusing as a result. Antisocial: 1) contrary to the laws and customs of society, in a way that causes annoyance and disapproval in others. 2) not sociable or wanting the company of others.

Subject: Maths	KPOW: Data	Year 8: Spring Term 2

Week 1: Univariate Data

Collecting data

Primary data is information that you collect yourself.
Secondary data is information that has been collected by someone else for a different purpose.

Types of data

Qualitative data is worded information, such as:

- What is your favourite chocolate bar?
- Who is your favourite teacher?

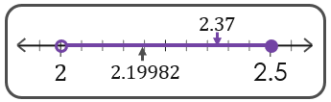
Quantitative data is numerical, such as:

- How many pets do you have?
- What is your height?

Quantitative data can be separated into two categories: continuous and discrete.

Continuous data are numbers that can take any value within a range, such as:

- Height
- Weight



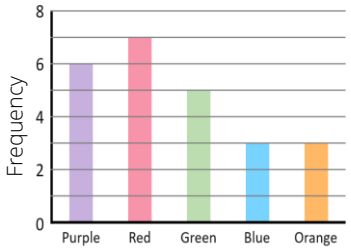
Discrete data can only take certain values, such as:

- Shoe size
- Number of siblings

Week 2: Univariate Data

Charts

Data can be collected using a frequency table and then displayed using a bar or pie chart.
Frequency: The number of times an event happens.
Here is a frequency table, displayed as a bar chart.



Favourite colour

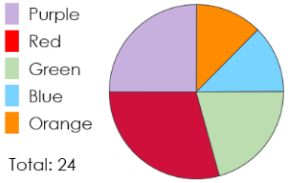
Colour	Frequency
Purple	6
Red	7
Green	5
Blue	3
Orange	3

Key features of a bar chart:

- The bars must be the same width.
- The bars must be equally spaced.
- The scale must go up by the same amount.
- The axis and bars must be labelled.

Pie charts

Bar charts show frequency of each category, whereas pie charts show the proportion of each category.
For example, here is a pie chart that represents the same data.



Averages

To compare quantitative data, we can calculate averages. Put the numbers in ascending order to help you calculate all of these:
Mode = Most frequent number, e.g.

7, 5, 6, 9, 8, 5
5, **5**, 6, 7, 8, 9

Mode = **5**

Median = Quantity in the middle of ordered numbers, e.g.

7, 5, 6, 9, 8, 5
5, 5, **6**, **7**, 8, 9

Median = $\frac{6+7}{2} = \frac{13}{2} = 6.5$

Mean = Total amount shared evenly between the amount of data, e.g.

$$\frac{5+5+6+7+8+9}{6} = \frac{40}{6} = 6.666\ldots$$

The range is not an average, it is a measure of the spread of the data.
Range = highest value subtract the lowest value, e.g.
7, 5, 6, 9, 8, 5

5, 5, 6, 7, 8, **9**

Put the numbers in order, to help you identify the lowest and highest number:
Range = 9 – 5 = **4**

Subject: Maths | KPOW: Data | Year 8: Spring Term 2

Week 3: Bivariate data

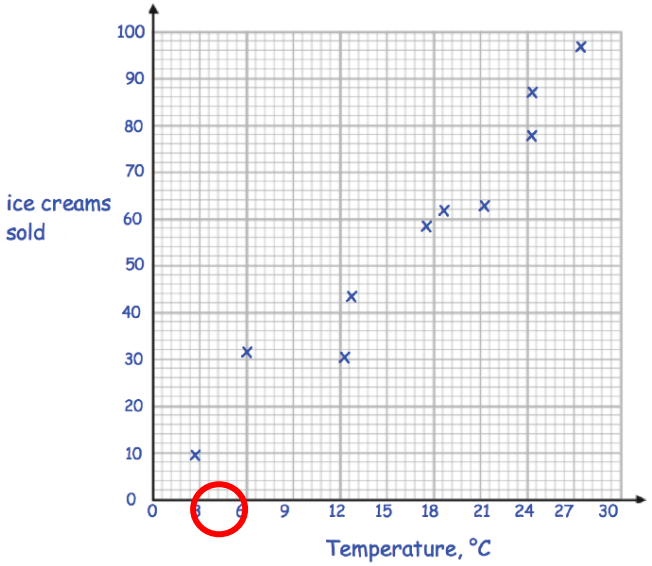
Bivariate data

When each entry in a data set has two corresponding pieces of information, we call it bivariate data.
The prefix "bi-" means two.
For example:

Main mode of transport	Journey duration (mins)	Journey length (km)
Car	15	4.5
Bus	20	3.1
Bus	18	2.5
Walk	23	1.7

Scatter graphs

We can represent bivariate data on a scatter graph when both variables are quantitative.



This point is circled on the graph to show how they have been plotted.

Sold	9	31	30	43	58	62	63	78	87	97
Temp	27	6	12.3	12.7	17.6	18.6	21.3	24.6	24.6	27

Week 4: Bivariate data

Correlation

We can describe the relationship between the two variables using positive or negative and weak or strong correlation.

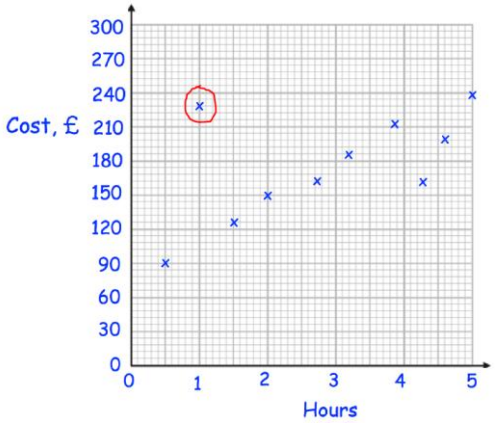
Positive Correlation
As one variable increases, the other increases.

Negative Correlation
As one variable increases, the other decreases.

No Correlation
As one variable increases, there is no effect.

Outlier

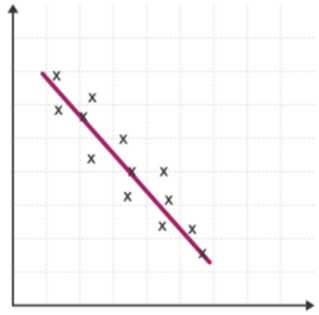
If there is a point that does not fit the trend that is called an outlier. For example:



Week 5: Bivariate data

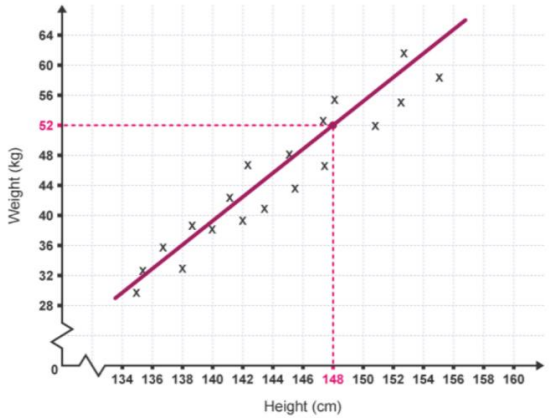
Line of best fit

The line of best fit is a straight line that shows the general direction that a group of points seem to follow.
For example, there should be roughly the same number of points above the line as below.



Here is a scatter graph to show heights and weights of people.
We can use scatter graphs to estimate for data we do not have. For example, estimate the weight of someone who is 148cm tall.

148cm ≈ 52kg



Subject: Biology

Year 8: Spring Term 2

Week 1: Effect of Exercise

Keyword definitions

Physiology – Understanding the mechanisms of living things.

Heart Rate- The speed at which blood is pumped around the body.

Your heat rate or **pulse** can be measured by feeling the radial pulse just below the thumb. When you **exercise,** your pulse increases to pump more blood around the body.

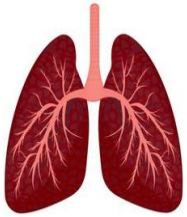
Week 2: Exercise, Asthma and Smoking

Keyword definitions

Nicotine - The chemical found in cigarettes that is addictive.

Asthma – A condition that affects a person's breathing.

Smoking releases **carbon monoxide** into the bloodstream, this causes there to be less oxygen than normal in the body.



When you breathe in, air travels down through the **trachea** to the lungs.

If someone has **asthma**, the muscles around the airways swell, and it makes it much harder to get a full breath.

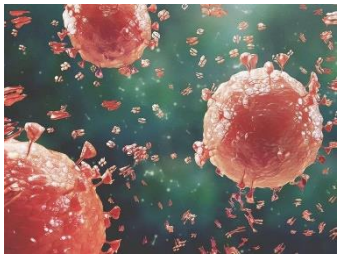
Week 3: Body Defences

Keyword definitions

Phagocytosis – The engulfing of pathogens and their destruction by enzymes.

Pathogen – A microorganism that causes a disease.

Vector – An organism that can spread a disease.



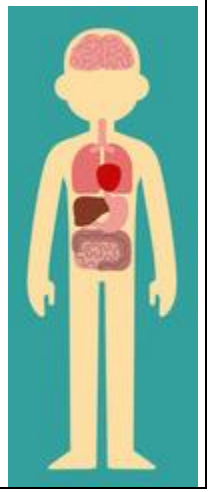
There are four main types of pathogens:

- Viruses
- Bacteria
- Fungi
- Protists

Pathogens can be transmitted by **direct contact** (skin to skin), by **water** (dirty or contaminated), **air** (coughs and sneezes), **unhygienic food preparation** (food poisoning) or **a vector** (e.g. a mosquito).

The body's defences against pathogens include:

Example	Type of barrier
Skin	Physical
Stomach acid	Chemical
Enzymes in tears	Biochemical
Cilia in trachea	Physical
Hair in nose	Physical
Mucus in nose	Chemical
Goblet cells	Chemical
Sebaceous glands	Biochemical
Natural flora	Biochemical

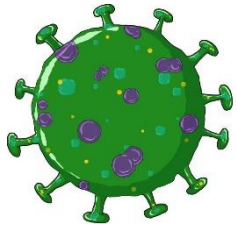


Week 4: Pathogens

Keyword definitions

Communicable diseases: Those diseases that are infections which means it can be transferred from one organism to another. **Non-communicable diseases** cannot be transferred in the same way and are often genetic.

Viruses – Tiny particles that cause diseases in people, animals or plants.



Different viruses may cause the common cold, influenza (flu), chicken pox, the measles and many more.

Viruses are so small they can only be seen on very powerful microscopes.

Week 5: Vaccinations

Keyword definitions

Vaccine – A type of medicine designed by scientists to help build up a body's defences against disease.

Pharmacologist – A scientist who researches how drugs interact with biological systems.

A **vaccine** contains a weakened version of a **pathogen** that triggers an **immune response** in a body. White blood cells produce **antibodies** that are specific for that pathogen.

If a person is later infected with the same pathogen, the body remembers and produces more antibodies quickly.

This means they do not become unwell.

Subject: Chemistry

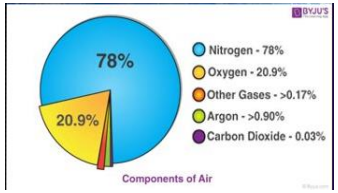
Year 8: Spring Term 2

Week 1: Atmosphere

Keyword definitions

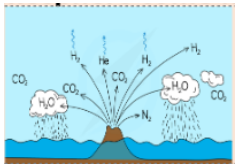
Atmosphere – a layer of gases surrounding a planet.

The Earth's atmosphere



Roles of the atmosphere

- Filters UV radiation from sun (ozone).
- Retains heat.
- Absorbs and stores carbon dioxide (carbon cycle).



Evolution of the atmosphere

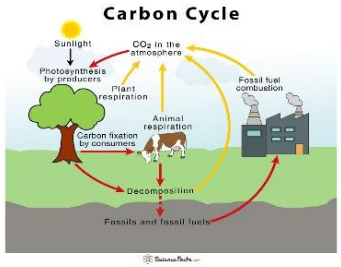
Carbon dioxide and **water vapour** were released from **volcanoes**.

As the earth **cooled,** water vapour **condensed** forming **oceans**.

When **plants** evolved they carried out **photosynthesis** so absorbed **carbon dioxide** and released **oxygen**.

Week 2: Carbon Cycle

Keyword definitions



Carbon cycle – shows how carbon atoms are transferred between the atmosphere, organisms, and the Earth.

Carbon stores – a molecule/substance/organism) where carbon can be found.

Carbon enters plants by **photosynthesis**.

Carbon enters the **food chain** when plants are **eaten** by animals. When an organism **dies** the carbon is recycled through **decay**.

The carbon can then become part of a **fossil fuel**.

When fossil fuels are **burned** the carbon re-enters the **atmosphere**.

Week 3: Greenhouse Effect and Climate Change

Keyword definitions

Greenhouse effect – natural process enabling Earth to maintain its heat.

Greenhouse gases – gases which absorb heat in the atmosphere and re-emit it back towards Earth. Examples are **carbon dioxide**, **water vapour** and **methane.**

Global warming – an increase in the Earth's average temperature.

Climate change – a long term change in the Earth's average temperature or weather patterns.

The Greenhouse Effect

Radiation from the sun enters the atmosphere. Some is absorbed by the Earth's surface and some is re-emitted back towards space. Greenhouse gases absorb this radiation and re-emit some of it back towards Earth.

Some human activities ***cause*** an increase in the greenhouse effect which then ***causes*** **global warming** which then ***causes*** **climate change**.

Human activities
- Burning fossil fuels
- Deforestation (cutting down trees)
- Cattle farming (cows produce methane)
- Landfills (break down of waste)

Global warming
- Greenhouse effect accelerated
- Earths average temperature increases

Climate change
- Ice caps melting
- Sea levels rising
- Extremes of weather
- Ocen warming and acidification

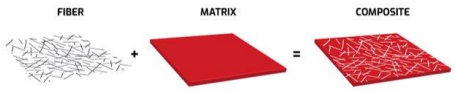
Week 4: Types of Material F

Polymers – Long chain molecules made from small repeating units called monomers.

Some polymers are naturally occurring such as DNA, proteins, and cellulose. Some polymers are synthetic (man-made) such as PVC, nylon and polyester.

Ceramics are made from moulding a soft substance like clay then baking it to harden.

Composites are a combination of multiple different materials with different properties. They are made up of a matrix (base material) and a fibre for reinforcement.



Week 5: Recycling, Mining and Quarrying

Keyword definitions

Metal ore – metal bonded to another element (usually oxygen) and attached to rock.

Mining and quarrying – methods of extracting useful materials from the Earth.

Recycling – converting used products into other useful products.

Metal ores are obtained by mining / quarrying. The process has advantages and disadvantages.

Advantages	Disadvantages
Jobs	Noise pollution
Income for local economy	Pollution from waste
Land can be reused	Habitat destruction

The 6 Rs of sustainability – a guide to follow to reduce waste. Rethink, Refuse, Repair, Reduce, Reuse, Recycle

Subject: French	KPOW: Free Time Listening	Year 8: Spring Term 2
Week 1: Present tense faire & sports/hobbies	**Week 2:** Present tense aller & places/hobbies	**Week 3**: Past & future verbs and time phrases
faire [to do] je fais [I do] on fait [we do] du jogging [jogging] du ski [skiing] du sport [sport] du vélo [cycling] de l'équitation [horse riding] de l'escalade [rock climbing] de la natation [swimming] de la randonnée [hiking]	aller [to go] je vais [I go] on va [we go] au centre commercial [to the shopping centre] au centre sportif [to the sports centre] au gymnase [to the gym] au parc [to the park] à la campagne [to the countryside] à la montagne [to the mountains] à la pêche [fishing] à la piscine [to the pool] à la plage [to the beach] chez des amis [to my friends' house -plural] en boîte [clubbing]	hier [yesterday] le weekend dernier [last weekend] j'ai fait [I did] on a fait [we did] je suis allé [I went] on est allés [we went] c'était [it was] qui était [which was] demain [tomorrow] ce weekend [this weekend] le weekend prochain [next weekend] je vais faire / je vais aller [I am going to do / go] on va faire / on va aller [we are doing to do / go] je voudrais faire / j'aimerais faire [I would like to do] je voudrais aller / j'aimerais aller [I would like to go] ce sera [it will be] qui sera [which will be] ce serait [it would be] qui serait [which would be]
Week 4: Revision of adjectives for giving reasons	**Week 5**: Revision of time phrases	
c'est [it is] qui est [which is] amusant [fun] dangereux [dangerous] barbant [boring] ennuyeux [boring] nul [rubbish] facile [easy] difficile [difficult] intéressant [interesting] génial [great] tranquille [peaceful] reposant [relaxing] solitaire [lonely / solitary] cher [expensive] bon marché [cheap] bon pour la santé [good for my health]	de temps en temps [from time to time] deux fois par semaine [twice a week] pendant le week-end [during the weekend] tous les jours [every day] tous les samedis [every Saturday] tous les soirs [every evening] tous les week-ends [every weekend] une fois par mois [once a month]	

Subject: Geography | KPOW: Our Restless Earth | Year 8: Spring Term 2

Week 1& 2: Types of Volcanoes & Case study

Types of Volcanoes

A volcano is a **vent** in the Earth`s crust through which magma rises.

Shield volcanoes are formed at constructive margins where the plates move apart. They produce runny lava that flows long distances creating gentle sides. Eruptions are usually gentle.

Composite volcanoes are formed at destructive margins where the plates move towards each other. They produce thick lava that flows short distances creating steep sides. Eruptions are usually violent.

Week 2: Case Study

Iceland lies on a constructive plate boundary. In 2010, one of the volcanoes began to erupt; it erupted between March and June. The impact of the eruption affected the whole world!

Impacts of EyjafjallajöKull:

National- The ash contaminated local water supplies. Many of the roads surrounding the Volcano were shut down.

European – Over 107,000 flights were cancelled across Europe over 8 days. This prevented 2.8 tonnes of Carbon dioxide entering the atmosphere.

International – Flights cancelled- this meant sporting events were cancelled and workers were stranded abroad – worldwide businesses lost money.

Week 3&4: Supervolcanoes and Earthquakes

Supervolcanoes

A supervolcano is a volcano that erupts with a **massive volume of material**, much more than a normal volcano – at least 1000km³ whereas a normal volcano would emit 1km^3.

Supervolcanoes can occur when **magma** in the Earth rises into the crust from a hotspot, but is unable to break through the crust and creates a large magma pool. **Pressure** builds as the magma pool grows until the crust is unable to contain the pressure and **erupts**.

Week 4: Earthquakes

Seismic means vibrations in the Earth's crust. Earthquakes are the sudden release of energy in the Earth's crust. They create both primary and secondary effects:

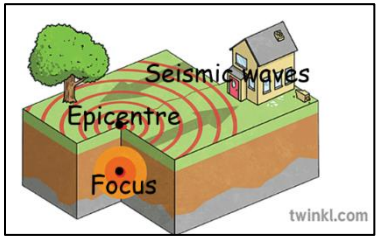
Primary – happen as the Earth shakes e.g., houses collapsing or death.

Secondary – due to the impact of the primary e.g., homelessness or emotional upset

Focus - where the earthquake starts.

Epicentre - point on the surface directly above the focus.

Seismic waves - the released energy travelling outwards.



Week 5: Living with Hazards

Living with Hazards

Many people choose to live near volcanos and other hazards, because there are usually many **benefits** of living in those areas, **for example**:

- Good soil
- Money from tourism
- Geothermal Energy
- Valuable materials
- Fossil fuels

People who live with Hazards, **Predict, Plan and Prepare** for the hazard.

Predict	Volcanologists **monitor** volcanoes and can predict whether a volcano is likely to erupt.
Plan	Drawing up **evacuation** plans and setting up warning systems to alert people of eruption.
Preparation	People keep masks, goggles, and helmets in their homes as protection against the dust.

Subject: History | KPOW: How did the Industrial Revolution change Britain? | Year 8: Spring Term 2

Week 1: Overview of changes 1750-1900

Britain changed dramatically between 1750 and 1900.

- The population rose from 11 million to 42 million.
- In 1750, most people lived and worked in the countryside, by 1900 most people had moved to new towns working long hours in purpose-built factories.
- The source of power transformed from manual and waterpower to steam power (from burning coal).
- In 1750, travel was slow using horse and cart. By 1900, this was made much quicker using trains.
- Peoples' health improved as medical knowledge grew.
- In the later stages of the revolution, most men could vote (but not women).

Week 2: Mills

Domestic system

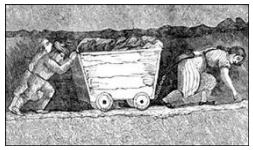
People worked in their own homes and could choose their own hours; this was called the Domestic System.

Cotton (textile) Mills

An invention called the spinning frame led to a move to factories/mills. The environment was hot, noisy, smelly, dangerous and the air was filled with cotton fluff. Accidents were common (hair caught or fingers trapped).
Employees worked long hours with few breaks.
Children as young as 4 or 5 were also employed to crawl under the machines.
An overseer was employed to hand out punishments to those either late or not working hard enough.

Week 3: Mines

After 1745, more coal was needed because the population had grown and it was needed to power steam engines in the new factories.
Coal is a better source of fuel than wood as it burns for much longer.



Inside a mine, the environment was hot, cramped, wet, and dangerous. There were often disasters from collapsing roofs and gas explosions.
Children worked in the entrance to the mine, opening and closing a wooden trap door. They were called trappers. Hewers were usually men and they dug the coal from the walls. Women could be employed as a 'getter,' collecting the coal that had been dug to put in tubs.

Week 4: Terrible Towns

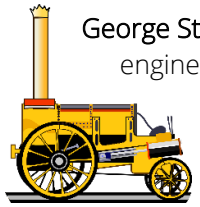
As the numbers of factories grew, this led to the growth of towns such as Sheffield, Leeds and Manchester.
The rapid growth led to poor quality housing like back-to-back houses with no sewage facilities.
A street would often have a shared toilet and a dung pile which would be taken away to be sold.
Houses were very overcrowded – often with five people in one room.
Water was sometimes provided by a pump, but this would come from the local river and be filthy.
Disease spread easily and the life expectancy of a working-class man in Leeds was only 19.
Cholera and typhoid were diseases carried by dirty water.

Week 5: Innovations

Between 1745 & 1901 the British were an inventive lot!

Richard Arkwright invented the spinning frame which could make thick, strong thread very quickly.

The steam engine was developed by a Scottish man called James Watt.



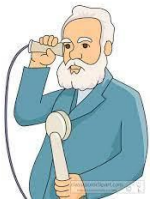
George Stephenson benefitted from the steam engine because he used it to power the first ever steam locomotive (train) which could carry both goods and people.

Engineer Isambard Brunel helped with the transport revolution because he figured out ways in which bridges and tunnels could go through hills and across valleys.

Michael Faraday was 'the electricity king' as he figured out how to use magnets to create electricity.

Charles Babbage invented the earliest form of a computer when he designed a machine that could do calculations instead of humans.

The telephone was invented by a man called Alexander Graham Bell. He was married to a deaf woman and worked all his life on making electrical hearing aids and from this, the telephone too.



Subject: DT - Food	KPOW: Cupcake Practical	Year 8: Spring Term 2
Week 1 & Week 2	Week 3 & Week 4	Week 5

Week 1 & Week 2

Cake Theory – Cake making methods

Rubbing in method

- Fat is **rubbed** into the flour using fingertips & additional ingredients are added.
- Liquid added to **bind** together dry ingredients.
- Used to made scones, rock buns, crumble topping.

Raising agent

Chemical- Baking Powder or Self Raising flour.

Mechanical - Sieving Rubbing In.

Melting method

- Fat is **melted** with the sugars and syrups.
- Dry ingredients added.
- Liquids bind allingredients together.
- Used to make brownies, flapjack, gingerbread.

Raising agent

Chemical- Bicarbonate of soda.

Creaming method

- Fat and sugar are **creamed** together.
- Eggs are slowly added a bit at a time.
- Flour is folded in.
- Used to make Victoria sponge, cupcakes, Maderia cake.

Raising agent

Chemical- Baking Powder or Self Raising flour.

Mechanical- Creaming/ sieving.

Whisking method

- Eggs and sugar are **whisked** until mixture has doubled in volume.
- Flour is gently folded in.
- Used for swiss roll, gateaux, flan case.

Raising agent

Mechanical- Whisking, sieving.

Week 3 & Week 4

Cupcake ingredients

- 175g (6 oz) softened butter or margarine
- 175g (6 oz) caster sugar
- 2 teaspoons vanilla extract
- 3 eggs
- 175g (6 oz) self-raising flour

(if chocolate flavoured 140g SR flour 35g cocoa)

Buttercream- (200g butter + 400g icing sugar)

Decorations e.g

- Chocolate/ nutella/ biscoff
- Sprinkles/choc decorations
- Bun cases x12

Simple method for making cupcakes

1. Weigh out the butter and sugar and place in into a bowl and whizz up until light and fluffy – use a spoon or electric whisk.
2. Pour in the vanilla essence and add the eggs - whizz again to make a smooth batter.
3. Add the flour and/or cocoa and fold in until it is smooth. Stop once in the middle of this and scrape the sides down using a spatula. The longer mixing time enables air to get into the mixture which will make it lighter.
4. Place cases into tin and pour evenly into the 12 cupcake cases, 60% full.
5. Bake for about 14 minutes. Keep an eye on them. They will be perfect when they bounce back to the touch and the top still looks slightly sticky, leave to cool, decorate.

Week 5

Special diets/ timelines

Food allergy- eating a particular food would trigger an immune reaction.

Food intolerance- difficulty digesting a particular food.

Coeliac disease

A condition where your immune system attacks your own tissues when you eat gluten.

This damages your gut (small intestine) so you are unable to take in nutrient.

Lactose Intolerance

A digestive disorder caused by the inability to digest **lactose**, the main carbohydrate in dairy products.

Vegetarians- Choose not to eat meat or fish.

Vegans- Chosen not to eat meat or use anything that comes from an animal.

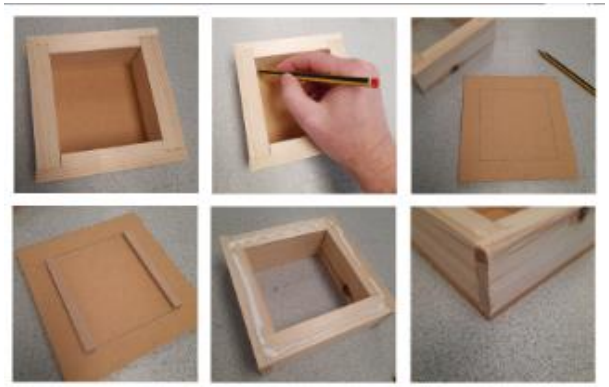
Baby- milk is a key necessity full of vitamins and protein, first solid foods should be fruit and veg then slowly cereals, dairy and other foods introduced.
Toddler- some milk still, starchy foods like potatoes, pasta, rice as well as some protein lean meat and fruit and veg- still soft in texture nothing too hard or crunchy.
Teenager-growth and development is rapid during this part of life and a real mix and balance of nutrients is required with low fat diet being very important.
Adult- similar to a teenager unless woman is pregnant or breast feeding where they have to consider certain foods and how they could affect the baby.
Elderly- energy requirement is not as great but high protein and vitamins are essential as bone disease can affect this age group.

Spellings Test:

YEAST CREAMING WEIGHING STARCH
CARBOHYDRATE PROTEIN
PROCESS METHOD HYGIENE APPERTISING
GELATINISATION APPEARANCE
INSTRUCTIONS JUSTIFICATION EVALUATION

Subject: DT – Product Design

Week 1 & Week 2: Drawing and Rendering

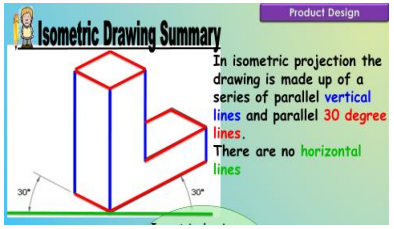


Theory

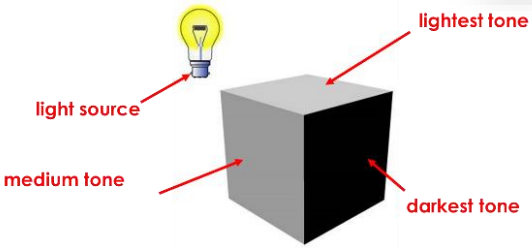
Oblique drawings only show one side of the shape in any real detail.

Isometric is more realistic 3D image.

Rendering – Add colour to a shape or an object to make it look 3d.

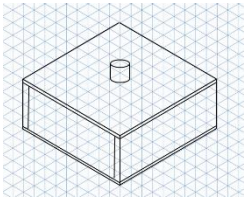


3 tone rendering – Uses three varying tones of colour.

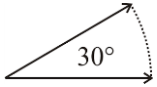


KPOW: Design & Evaluation

Week 3 & Week 4: Isometric Drawing



Isometric drawings are produced to a clear and detailed drawn version of an idea or final design. The horizontal lines are drawn at 30 degree angles.



Key words:

Flush – Materials all even and flat when put together.

Band facer – A machine which sands wood along a long belt aka a belt sander).

Finish – The way the manufacture of product is completed (complete to a high standard).

Isometric paper – graph paper with angled boxes to help draw in 3D.

Theory

How paper is made – The manufacturing process used to convert trees (source material) into paper.

Sustainability - Avoidance of depletion (using them up) of natural resources.

6 R's

Reduce – Reduce materials used.

Rethink – Design to think about environment.

Recycle – Reprocess material to make something else.

Reuse – Use a product to make something else.

Refuse – Do not buy it if you do not need it.

Repair – Fix it instead of replacing.

Year 8: Spring Term 2

Week 5: CAD & CAM

Welding strategy - using a range of shapes to form a new shape. This can be done free hand or using templates.

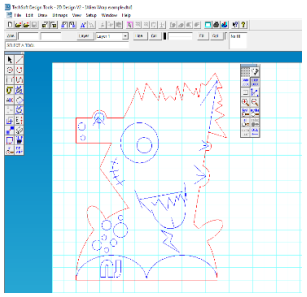
Modelling is an integral part of the design process and helps the designer to see faults before manufacturing.

Key words

Modelling – Test how the product looks before making it out of the chosen materials.

Presentation – Thinking about layout, colour, and annotation.

Fine liners – Thin nibbed pens to add detail when designing.



In industry CAD and CAM are used on large scale manufacturing. CAD in what we produce on a computer and CAM is the manufacturing process which is informed by the computer.

Keywords

Techsoft 2D Design – **CAD** software that is used to create designs which will be cut using a laser cutter.

CAD – Computer aided design.

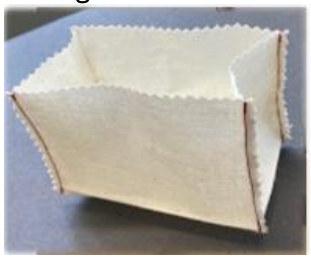
CAM – Computer aided manufacture.

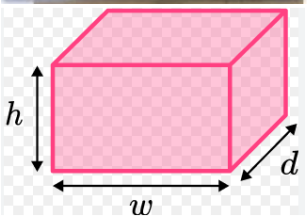
Subject: DT - Textiles

Week 1 & Week 2

Mixed Materials Storage Product

Making fabric box for inside:





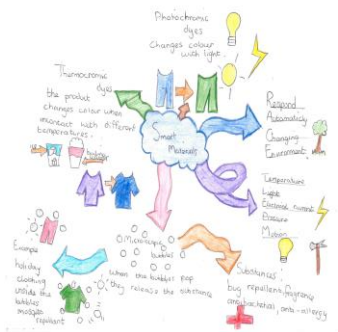
Use **Pinking Shears** (cut a zig-zag edge to reduce fraying which is when the threads unravel).

3D = **3 dimensional**, meaning has three dimensions, depth, width, and height.

Joining the box to the sides:

Functional – this means being practical and useful rather than just attractive.

Theory – Mind Mapping:



A mind map is a diagram where information is shown visually. They help you:

Organise information

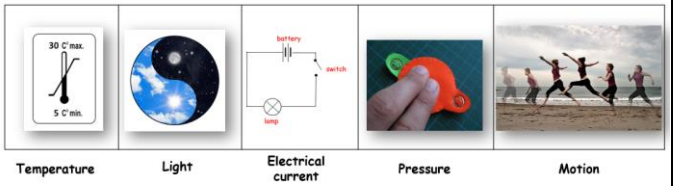
Prepare for tests

KPOW: Storage Product

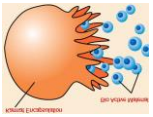
Week 3 & Week 4: Key Theory Topics

SMART materials are materials that **R**espond **A**utomatically to a **C**hanging **E**nvironment *(RACE)*

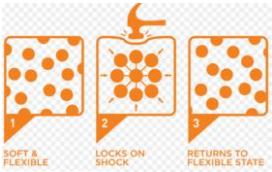
Examples of change are:



Microencapsulation: microscopic bubbles filled with a substance then sprayed onto fabric. Examples of substances are anti-bacterial, fragrance, antiallergic & mosquito repellent.



D30: A smart material that is like playdough until it is hit (blunt force), the molecules then lock solid.



Modern Materials:

Kevlar – very strong, used for bullet proof vests.

Rhovyl - long lasting antibacterial properties, used for bedding, underwear etc.

Nomex – Heat resistant, fire fighters and racing drivers clothing.

Carbon Fibre – used to reinforce other materials, lightweight, flameproof, used for helmets and racing cars.

Super Hydrophobic – repels water, used on electronic circuits and footwear etc.

Year 8: Spring Term 2

Week 5

Thermo chromic: dyes that change colour in response to changes in TEMPERATURE.

Photo chromic: dyes that change colour in response to ULTRAVIOLET LIGHT (UV).

Geotextiles: Materials used in civil engineering (e.g., road, bridge, canal, and dam building). Function is to:

- **REINFORCE** (strengthen & support)
- **FILTER** (allow water through but not unwanted materials)
- **SEPARATE** (different layers separated)

E-Textiles: Fabrics which incorporate (include) electronics (i.e., conductive thread, printed on circuit board or micro wires woven into material). They need a POWER SOURCE to active them (i.e., a battery).

Function of E-Textiles is they can SENSE, ACUTATE, COMMUNICATE AND STORE information *(SACS = acronym)*

Key areas where E-textiles are being developed are:

Medicine – gowns and vests that can read vitals such as blood pressure, temperature etc.

Sports Performance – Rugby box and football vest that read vitals as player is performing.

Military – Uniforms with the capability to record information and communicate with others.

Fashion & Novelty – light up garments for the catwalk and other novelties.

Subject: Core PE	KPOW: Key Words	Year 8: Spring Term 2
Week 1 & Week 2: Bruise	Week 3 & Week 4: Abrasion	Week 5: Flexibility
Definition- An injury appearing as an area of discoloured skin, caused by impact or rupturing of underlying blood vessels. Example- A hockey player might get a bruise from being hit by a hockey stick. 	Definition- Abrasions are minor injuries to the skin such as a cut or a graze. Example- A footballer could get an abrasion from sliding on astroturf. 	Definition- Flexibility is 'the range of movement possible at a joint. Example- A netball player would need flexibility to be able to reach up high to block a shot.

Subject: Computing & Digital Media

Week 1 & Week 2

Denary or decimal is our standard number system, it allows humans to count. It is a base 10 system with 10 digits (0,1,2,3,4,5,6,7,8,9). **Binary** is a base 2 number system and is the language of computers.

Placeholders: 8-bit structure

128	64	32	16	8	4	2	1

Converting denary into binary:

198 = 11000110 (128+64+0+0+0+4+2+0).

128	64	32	16	8	4	2	1
1	1	0	0	0	1	1	0

Converting binary into denary:

Add the placeholder numbers together when you see a 1.

01010001 = 81 (0+64+0+16+0+0+0+1).

128	64	32	16	8	4	2	1
0	1	0	1	0	0	0	1

Binary numbers can be added together. Work from the right and use these four rules, carry under to the left as required:

Rule One:	0 + 0 = 0
Rule Two:	1 + 0 =1
Rue Three:	1 + 1 = 10 (binary for 2)
Rule Four:	1 + 1 + 1 = 11 (binary for 3)

01010011
01110110
———
11001001

KPOW: Algorithms

Week 3 & Week 4

Keywords:

Algorithm: An algorithm is a process to solve a problem using a fixed number of steps.

We use **algorithms** so the computer understands how to do something. The computer needs to be given a list of instructions so it can follow them. We call this a **sequence.**

A **flow chart** shows the **sequence** of an algorithm in a graphical way. Here are some of the symbols we use to make a flowchart.

Symbol	Name	Shape & Function
	Terminator Start/End	A rectangle represents a start or end point.
	Connector	An arrow is a connector that shows the direction of information through the flow chart
	Input/output	A parallelogram represents an input or output.
	Process	A rectangle represents a process.
	Decision	A rhombus is used to show a decision that needs to be made

Year 8: Spring Term 2

Week 5:

Keywords:

Linear: Carrying out instructions that follow each other in order.

Search: looking for a value (in a list of other values)

There are many different types of search algorithms. Two are them are ***binary search*** and ***linear search***.

Binary search is a faster method for searching for an item that is in an **ordered list**.

The ***binary*** search *algorithm* takes the data and keeps dividing it into two until it finds the item it is looking for.

The most basic kind of search is a ***linear search***. The data does not need to be ordered.

The search starts with the first item and then moves to each item in turn, until either a match is found, or it reaches the end.

Subject: Music	KPOW: Film Music	Year 8: Spring Term 2
Week 1 & Week 2: Film Genres	**Week 3 & Week 4:** Film Score Composers	**Week 5:** Musical Elements & KPOW Performance

Genre:
A genre is the term used to define a category in art, music, literature, or film.

Film genres:
A film genre is determined based on four key elements.

- Story (the overall story of the film)
- Plot (the events that take place during the film)
- Characters (the people in the story)
- Setting (the location of the film)

Popular film genres and examples:

Action: James Bond, Mission Impossible.

Comedy: Dumb and Dumber, School of Rock.

Horror: The Grudge, The Woman in Black.

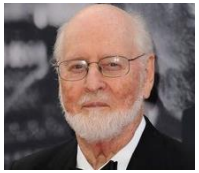
Fantasy: Harry Potter, The Lord of the Rings.

Drama: Titanic, Forrest Gump.

Sci-fi: Star Wars, Guardians of the Galaxy.

Notable film score composers and their work:

John Williams:
Composed the scores for Harry Potter, Star Wars & Jurassic Park.



John Williams is a multi-award winner born in America in 1932. In his career, he has won 5 Academy awards and holds the record for the most Academy award nominations for a living person, with a total of 54.

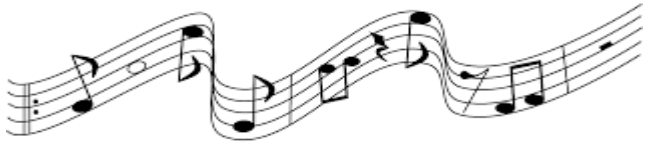
Hans Zimmer:
Composed the scores for Pirates of the Caribbean, The Dark Knight & The Lion King.

Hans Zimmer, born 1957 is a German composer who has been working in Hollywood creating music for films for the past 46 years. He has created scores for over 100 films.

James Horner:
Composed the scores for Titanic, Avatar & Troy.

James Horner is an American composer born in 1953. In creating the music for Titanic, he has achieved one of the bestselling soundtracks of all time and a number one hit for Celine Dion with "My Heart Will Go on".

Melody: The tune. The main recognisable line in a song or piece of music.

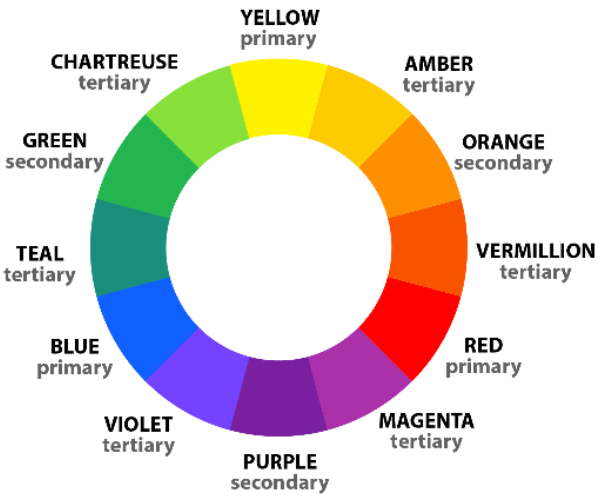
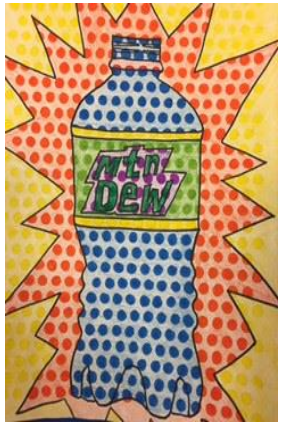


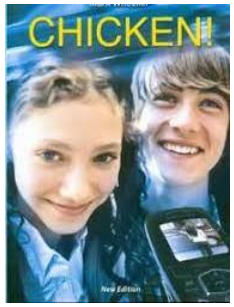
Rhythm: A Pattern of notes. The rhythm is primarily created using the main musical notes such as a semibreve, minim, crotchet, and quaver.

Tempo: Fast or slow. The tempo relates to the overall speed of the piece of music.

Dynamics: Loud or quiet. The dynamics of the song refer to the volume and changes in volume throughout the composition.

Texture: Thick or thin. Texture relates to all the different layers of instruments or voices that come together to create the overall sound.

Subject: Art	KPOW: Culture - Pop Art	Year 8: Spring Term 2
Week 1 & Week 2: Keywords and Definitions	**Week 3 & Week 4:** Outcome Development	**Week 5:** Pop Art Movement
• TWO DIMENSIONAL - any form of visual art that exists in two dimensions. Having or appearing to have length and breadth, but no depth. • MOVEMENT (ART) - is generally defined when a group of artists during a specific time tend to adapt a particular style with a common goal or philosophy. • COLOUR - the property possessed by an object of producing different sensations on the eye as a result of the way it reflects or emits light. Colour wheel - reminder  	**Outcome** – A piece of Art that you have created using inspiration from others along with your own ideas. **Graphic designer** - create visual branding, adverts, brochures, magazines, website designs, product packaging and displays. Re-cap - This term you have drawn a bottle from observation and researched the Pop artist Sarah Graham. Now you have an opportunity to become a Pop Artist yourself. Apply line, pattern and colour knowledge to a design of your own. A **can or bottle** design showing a Pop Art influence.  	Pop (short for popular) Art is an art movement that began in the 1950s. Artist **Andy Warhol** worked with a variety of media such as silkscreen printing, painting and photography. Artist **Roy Lichtenstein** was inspired by comic books and advertising posters. Much of his work uses primary colours, thick outlines and dots.

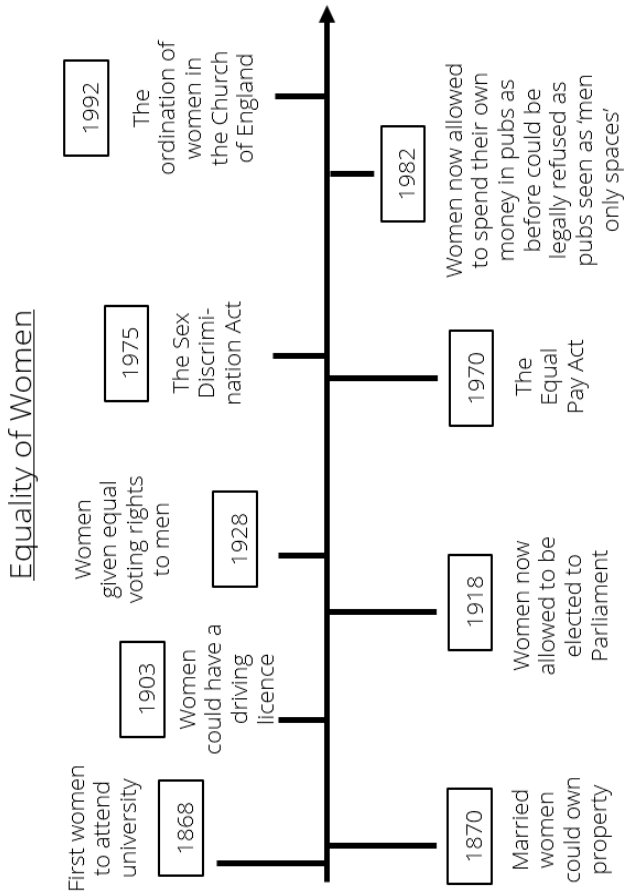
Subject: Drama	KPOW: Physical Theatre	Year 8: Spring Term 2
Week 1 & 2: Introduction to Chicken	**Week 3 & 4:** Rehearsal	**Week 5:** KPOW
By Mark Wheeler Road Safety: A set *of measures and actions used to prevent and reduce traffic accidents.* Peer Pressure: A feeling that one must do the same things as other people in a social group to be liked or respected by them. *'Chicken, a powerful play aimed to educate audiences about road safety.'*  Teamwork: Working with a group of people to achieve a shared goal or outcome in an effective way. Actively listening to other members of a group. Directing: *Showing the way by conducting or leading; imposing direction on*. Style: How the work is presented on stage, a framework to shape the performance	Timings in Physical Theatre helps performers to move together when moving performing synchronised movements. Accuracy: *The quality of being correct and without mistakes*: *'Don't practice until you get it right. Practice until you can't get it wrong'.* Structure– How the plot or story of a play is laid out. Pace - The speed of a performer's movement. Implementing Techniques: This is when actors use their skill set and knowledge by putting Drama Techniques into a performance that will highlight key moments.	Stage Presence: An energy on stage that makes their performance unforgettable; a charm and charisma that draws you in. Transitions: The movement from one scene to another. *'Create a performance that interests and educates your audience.'* Performance – An act of presenting a play, concert, or other form of entertainment. Peer Feedback – Enables the performer to improve their work, based on feedback of strength and weaknesses. Self - Reflection – Enables you to question your performance work, in a positive way, what you do and why you do it and then deciding whether there is a better, or more efficient, way of doing it in the future.

Subject: Learning 4 Life

Year 8: Spring Term 2

Week 1 & Week 2: Key Words

Please learn the brief history of women's rights below:



Of all the rights above there was only one that women received at the same time as men – the right to hold a driving licence.

Week 3 & Week 4: The Civil Rights Movement

Civil Rights Movement

Please learn these key facts about the Civil Rights Movement:

The Civil Rights Movement was made up of a number of different peaceful protests designed to draw attention to the rights which black people were still being denied. Below are 4 of them:

Date	Title	Details	Right?
1955-56	The Bus Boycott	Black people boycotted using buses in Montgomery to show they were unhappy with segregated buses	Desegreg-ated buses
1960 (Feb)	Sit Ins	Black protestors sat at the counters in diners facing abuse from white customers	Desegreg-ated restaurant
1961 (May)	Freedom Riders	Protestors rode on buses to test to see if the new desegregation laws were being followed	To sit where they liked
1965 (Mar)	March from Selma	Protestors marched from Selma to Montgomery to protest that black people were still not being given the right to vote	To vote

Week 5: Rosa Parks

Please learn these key facts below:

Rosa Parks is famous because she refused to give up her seat on a bus for a white person.

Read and learn the facts below about Rosa Parks:

Rosa Parks was born in 1913 in Alabama

At this time black people were expected to sit at the back of a bus and if the bus got full, to stand up for white passengers

On Thursday 1st December 1955 Rosa Parks refused to move for a white person when on the bus

This refusal was quickly followed by the Bus Boycott, black people avoided using buses to show their dislike of segregated buses

The boycott started on Monday 5th December and lasted for 381 days

Finally the Supreme Court ruled that segregated buses were unconstitutional, the protesters were successful

Segregation: To separate black people from white people.

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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