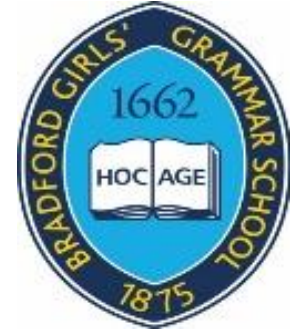


Year 7

Knowledge Organiser



1. Art
2. Drama
3. English
4. Food and Nutrition
5. French
6. Geography
7. History
8. Life Skills
9. Maths
10. Music
11. PE
12. Religious Studies
13. Science
14. Textiles

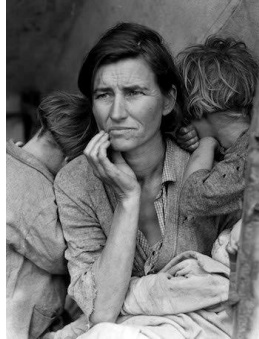


A Portraiture

Portrait: A picture of a person. It can show their face, their whole body, or just a part of them.



Traditional Portraits: A portrait that shows a person's appearance in a realistic and formal way.



Candid Portraits: A natural portrait capturing a person's genuine expression without posing.



Self-Portraits: A portrait an artist creates of themselves to explore their identity or emotions.

B Julian Opie

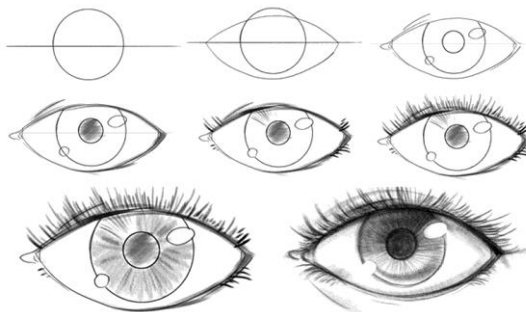


Julian Opie is a British artist known for his bold, simplified portraits that use clean lines and flat colors to capture the essence of a person's identity.

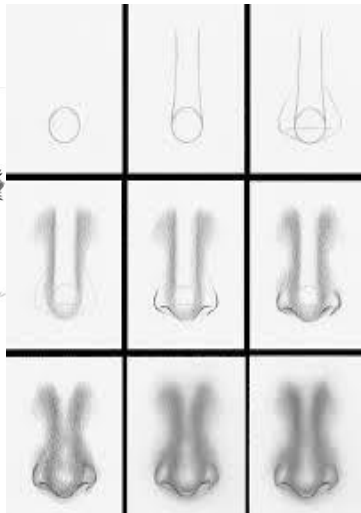
Key Facts:

- Born in 1958 in London, UK.
- He is inspired by Pop Art and Japanese woodblock prints.
- His portraits are often created using digital tools and printed on large-scale panels.
- Opie's work includes famous figures like pop stars and everyday individuals.
- His iconic style can be seen in album covers, public installations, and exhibitions worldwide.

C Realistic Drawing

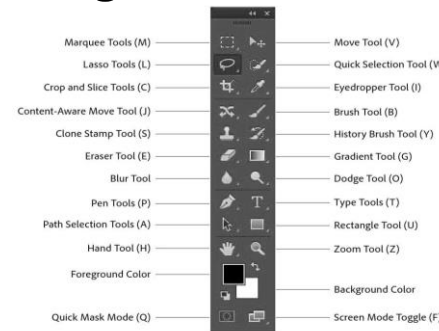


- 1. Draw the Outline:** Sketch an almond shape for the eye, add a circle for the iris, and a smaller circle for the pupil.
- 2. Add Details:** Draw the eyelids, eyelashes, and light lines in the iris.
- 3. Shade and Blend:** Shade the iris and pupil, add shadows to the eye's corners, and blend for a realistic effect.



- 1. Draw the Outline:** Sketch a soft triangle for the nose tip, then draw two small ovals for the nostrils.
- 2. Add Details:** Draw the sides of the nose from the nostrils to the bridge and lightly sketch the nostril openings.
- 3. Shade and Blend:** Shade along the sides of the nose and under the nostrils, blending for a smooth, realistic look.

D Digital Art



Advantages of using Photopea

- 1. Easy to Edit:** You can quickly fix mistakes or change parts of your artwork
- 2. Lots of Tools:** There are many brushes and effects to create different styles.
- 3. No Mess:** You don't need to clean up or use physical materials.

Tips for using Photopea to draw a self-portrait:

- 1. Use the Brush Tool (B):** Select the Brush tool to draw. Choose a soft, round brush for smooth lines and adjust the size with the slider at the top.
- 2. Create Layers:** Start by adding a new layer (Layer > New > Layer). Draw the outline of your face and features on this layer, so you can easily adjust it later.
- 3. Use the Pen Tool (P):** For cleaner lines, use the Pen tool to create smooth shapes for your eyes, nose, and mouth. Right-click to turn your path into a selection and fill it with colour.
- 4. Zoom In & Out (Ctrl + or -):** Zoom in to draw fine details like eyes or hair and zoom out to see your whole portrait clearly.

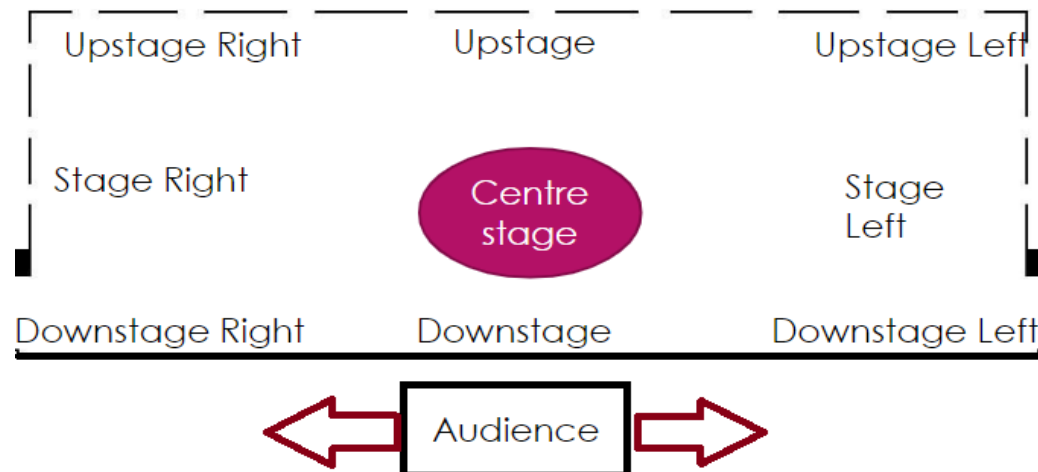
A Key words for this term

Devising	Creating a performance from a stimulus. This can be done as a group or alone.
Tableau	A freeze frame image that captures one single moment in time.
Stage Directions	Instructions that are given to the actor.
Proxemics	The space between the actors or an actor and an object.
Masking	Blocking the view of the audience of a person or an object.

B Performance skills

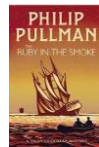
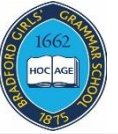
Body Language	The use of the body to express the characters personality and how the character is feeling.
Facial Expressions	The use of the face to express the characters personality and how the character is feeling.
Grouping	The different levels used by performers can show status and emotion.
Levels	The different levels used by performers can show status and emotion.

C Areas of the stage



D Vocal Skills

Projection	Raising the volume of the voice so that it can be heard by the audience without shouting.
Articulation	When all the sounds of the words are clearly spoken.
Pitch	How high or low the tone of the voice is.
Emphasis	Emphasising a word with the voice can express something important to the audience.



A Melodrama is a dramatic work in which events, plot, and characters are sensationalised* to get **strong emotional reactions** from the audience.

Archetypes:

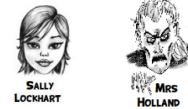
- The mean villain
- The sensitive hero
- The persecuted* heroine
- The clown
- The faithful friend
- The villain's accomplice

Plot conventions

- moral tone with good triumphing over evil
- full of suspense and tension
- horror
- mystery
- evil characters punished
- good characters rewarded

sensationalised* to present information in a dramatic exciting way
 persecuted* Treated unfairly or cruelly, especially because of someone's race, religion, or beliefs

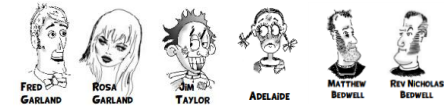
B Key Characters



Sally Lockhart Sally is not a typical Victorian girl: she has been brought up to be resourceful, independent and astute with figures. She has been trained in the use of guns by her father. Sally finds it hard to show her feelings and is quite reserved and not easy to get to know.

Mrs Holland is the main antagonist or villain of the novel, she was a beautiful woman in her younger years but is now a bitter and cruel criminal mastermind. She keeps Bedwell hooked on opium and treats Adelaide very cruelly; she also intends to kill Sally.

C Characters



Frederick Garland: A handsome photographer who meets Sally by chance.

Jim Taylor: A young man who works at Lockhart and Selby shipping firm. He is a great amateur detective.

Rosa Garland: Fred's outspoken sister.

Adelaide: She works for the terrifying Mrs Holland. She finds friends and safety in Sally and Fred.

Matthew Bedwell: He worked for Sally's father and was on board the ship that sank which downed Mr Lockhart. He has become an opium addict.

Nicholas Bedwell: Twin brother to Matthew. He is a religious man and an expert boxer

D Subject Specific Words

Figurative language - The author uses features such as similes, metaphors and atmospheric language to describe the setting.

Pathetic fallacy - This is when the weather or environment reflect the emotions of the character.

Foreshadowing - Giving a hint at an event that will happen later in the narrative

Narrative Hook - This is something that grabs the attention of the reader

Characterisation-This is the way authors create characters and make them believable. This could be done directly by 'telling' (**explicitly**) or indirectly (**implicitly**) by 'showing'.

E Key Words

Malevolent adjective = wanting to cause harm or commit evil

Mutiny noun = an open rebellion against the authorities

Imperialism noun = a policy of extending a country's power and prestige through colonisation and other means.

Bohemian noun/adjective = a socially unconventional person, especially someone who is involved in the arts.

Retribution noun= a punishment inflicted on someone as a penalty for a wrong act.

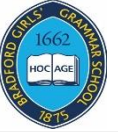
F Context

Author: Phillip Pullman - **Written:** 1985 - **Set:** 1872

Genre: Neo-Victorian Mystery/Detective/Melodrama

British Empire :The story is set at the height of the Industrial Revolution, when Britain's Empire spread far across the globe, bringing in wealth, jewels, spices and drugs. The British Government ran the Opium trade.

Women had fewer rights than men during the Victorian Era. A woman's place was 'in the home' or revolved around motherhood. Women and men were encouraged to keep separate - men focusing of business. This meant that women who didn't have a male or senior chaperone were vulnerable and were at risk of damaging their reputation.



A Safe working practices

Work nicely together	Follow knife safety rules	Pan handle at side of hob	Always use oven gloves
Listen to instructions	Stay in your area	Put bags away	Clean up spills immediately



Hazard Noun: a danger or risk	Synonyms: danger, risk, peril, threat, difficulty, problem
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B Practical skills



Knife skills	Bridge hold Claw grip Slicing Chopping
Using equipment	Peeling Grating Weighing Measuring Sieving Rubbing in Rolling out
Using the cooker	Hob Grill Oven
Cooking methods	Grilling Toasting Melting Stir-frying Baking
Seasoning	Adding herbs and spices to add flavour
Food science terms	Enzymic browning Oxidation Dextrinisation Aeration

C Equipment and uses

Equipment	Name	Use	Dishes	Equipment	Name	Use	Dishes
	Grater	Reducing foods to shreds	Pizza toast		Tablespoon	Stirring and measuring	Fruit salad Muffins Flapjack
	Wooden spoon	Stirring mixtures	Muffins Flapjack Pancakes		Mixing bowl	Mixing food in	Muffins Flapjack Scones
	Frying pan	Shallow frying foods	Stir fry Pancakes		Weighing scale	Weighing dry ingredients	Muffins Flapjack Pancakes Scones
	Fish slice	Turning foods in a frying pan	Stir fry Pancakes		Measuring jug	Measuring liquid ingredients	Muffins Pancakes Scones
	Veg prep knife	Cutting foods into smaller pieces	Fruit salad Pizza toast Stir fry Pasta Salad		Sieve	Removing lumps from flour and adding air	Muffins Pancakes Scones
	Chopping board	Chopping foods on	Fruit salad Pizza toast Stir fry Pasta Salad		Rolling pin	Flattening dough	Scones

D Food Science terms

Aeration
Adding air to a cake mixture so that it will rise

Do this by:

Sieving flour
Creaming the butter and sugar together
Whisking the eggs



Enzymic Browning
When fruit goes brown when peeled or cut

Oxidation
Oxygen reacts with enzymes in fruit and vegetables

To prevent it, add fruit juice containing vitamin C, an anti-oxidant



Dextrinisation
When starchy foods like bread are cooked by dry heat and they go brown on the outside

Starch molecules turn into Dextrin- a type of sugar



E Healthy Eating and The Eatwell Guide



F Food Provenance is about knowing where our food comes from, how it is processed and transported

Key term	Definition
Reared	Animals brought up on farms to be slaughtered for food
Caught	Animals and fish caught in the wild for food
Gathered	Plants gathered from trees, bushes, hedgerows and fields to be used as food
Grown	Crops that are grown in fields for food
Organic	Food produced without chemicals
Food miles	Distance food travels from source to plate
Seasonal	Foods that are grown in each season
Locally produced	Foods that are grown near to you
Sustainable	Making sure that we have food now but that there will be food stocks in the future.

A France and Countries of Europe

Introducing countries of Europe:

la France/la Grande Bretagne/ l'Angleterre/ l'Ecosse/ le pays de Galles/ l'Irlande du Nord/l'Espagne/l'Italie/le Portugal/l'Allemagne/la Suisse/la Belgique

Language and nationality (with adjective endings)

français/anglais/écossais/gallois/nord-irlandais/espagnol/italien/portugais/allemand/suisse/belge

How to say "in": en/au/à

To live: habiter (introduce the present tense of "er" verbs)

Saying where you and others live

B Geographical locations

À la montagne – in the mountains

À la campagne – in the countryside

Au bord de la mer – by the sea

Dans un village – in a village

Dans une ville – in a town

Dans une grande ville – in a city (large town)

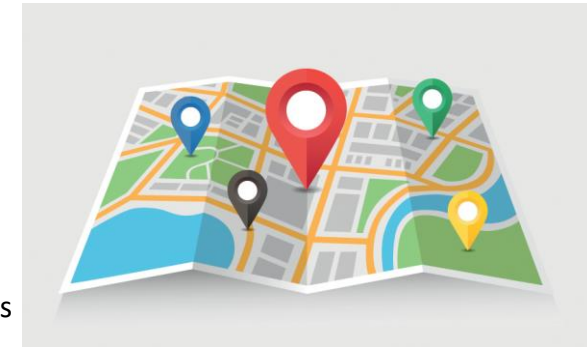
Dans la/en banlieue – on the outskirts/suburbs

En ville/dans le centre – in town/in the centre

Sur la côte – on the coast

Dans le nord/le sud/l'est/l'ouest de la/du/de l'/des

To live: habiter



C Types of Accommodation

Le logement (accommodation)

Une maison individuelle – a detached house

Une maison jumelée – a semi-detached house

Une maison mitoyenne – a terraced house

Un pavillon – a bungalow

Un appartement – a flat

Un mobilhome – a (static) caravan

Une ferme – a farm

To live: habiter



D Describing your house/flat and your bedroom

un bâtiment (building)

beau/joli/grand/petit/ancien/neuf (brand new)/moderne

Une pièce (room)

Rooms: une chambre (la chambre de mes parents/de ma soeur/de mon frère)

Un bureau/un salon (lounge)/une cuisine (kitchen)/une salle de bains (bathroom)/une salle de bains attenante (en suite bathroom)/une salle à manger (dining room)/un jardin (garden)/un garage/une entrée (entrance hall)/une buanderie (utility room)

Floors: Au sous-sol (basement)/ au rez-de-chaussée (ground floor)/au premier étage (first floor)/au deuxième étage (second floor)

Il y a/j'ai (there is or there are/I have)

Furniture: un lit (bed)/une armoire (wardrobe)/un bureau (desk)/une lampe/une étagère (shelf)/une commode (chest of drawers)/des posters/une table de nuit (bedside table)/un tapis (rug)/une chaise (chair)/une table

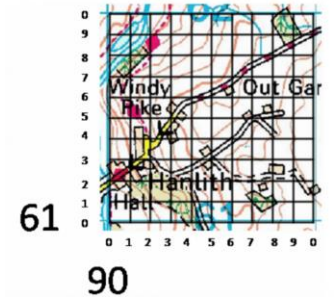
A

- Atlas: Maps of the world
- Making connections: How are we connected to the world around us?
- Mental map: a map that we have in our head that helps us find places
- Map types: recognise maps at different levels, eg OS maps, national, international, relief, political
- Map symbols: a picture on a map that represents something in real life
- Map symbols: Recognise some of the key symbols as show on the key here



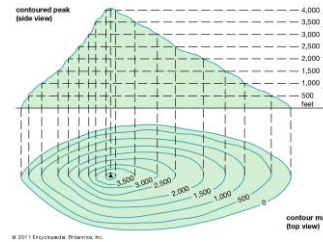
B

- Four figure grid reference - these help us find places on a map within 1km²
- Remember – along the corridor and up the stairs
- To be able to say a four-figure grid reference 9061 as ‘nine, zero, six, one’
- To find a grid reference, go to the bottom left corner of each square where the grid lines cross over
- Six figure grid reference – allows you to pinpoint a specific location on a map more accurately
- Write the four-figure as 90 _ 61_, Imagine the grid square divided into 10 equal parts from left to right. Measure how far your point is across the square from the left-hand side and give a number (0-9) to this position. Add it as the third digit 901 61_. Do the same ‘up the stairs’ and add it as the last digit 901 615



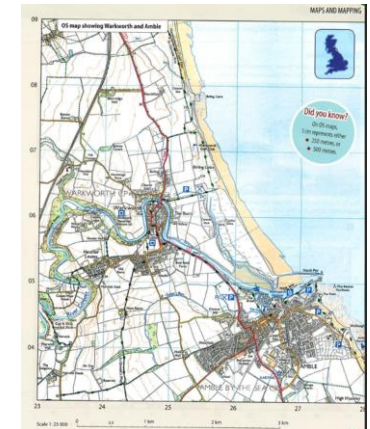
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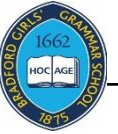
- Relief: Height and shape of the land
- Ways to show height on a map: spot height, contour lines, colour layering
- Contour line: a line on a map that connects points of equal height above a given level
- Lines close together = steep hill, far apart = gentle hill
- Trig point: Often shown as a triangle with the height on a map – can be found as a concrete pillar on a place of high altitude
- Measuring wiggly lines: Use a piece of paper or string, then scale to work out distance



D

- Scale: shows how much you need to enlarge the map to get the actual size
- Skills: Convert the actual size to a scale using a table eg 1 metre – 4 cm on a map
- Skills: Map an area using a scale
- OS map: provides detailed and accurate information on the landscape, including the location of footpaths, bridleways, and public rights of way, making it easier to plan and follow routes.
- Identify features on an OS map such as roads, parking, rivers, beaches, school, contour lines, spot heights





A Key events

January 1066- Harold Godwinson is crowned King by the Witan.

20th September 1066- Battle of Fulford Gate (Viking win)

25th September 1066- Battle of Stamford Bridge (Saxon win)

14th October 1066- Battle of Hastings (Norman win)

25th December 1066- William was crowned King of England in Westminster Abbey in London.

1069- The most famous rebellion against William was led by Earls Edwin and Morcar, who wanted to put Edward the Confessor's 18 year old nephew – Edgar Aetheling – on the throne. Their army was supported by the Scots and Vikings, but was brutally put down by William

B Harrying of the North

As a punishment for supporting Edgar Aetheling's rebellion, William ordered villages and crops in the north of England to be burnt, people and animals killed and the land poisoned so people could not farm there afterwards. It is estimated that 75% of the population of the north was wiped out.

1085- William ordered a huge survey of England. The Domesday book was begun. However, William did not live to see it completed.



C Key words

Motte- William built castles as part of his conquest of England. The first ones were made of wood, and were built on a motte. A motte is a mound of earth.

Bailey- This was the area around a castle, which was enclosed by a wooden fence and a ditch to protect it.

Domesday book- It was full of information about how many people there were in each area, and how much property they owned. This was so William knew how many people he could call up to his army if he needed them, and how much he could tax people.

Feudal system- A system developed by King William where each group of people owed loyalty to the group above, starting with villeins, knights, barons and ending with the king.

D Baron- In return for their loyalty, William gave his supporters big chunks of land in England to rule. These powerful landowners were known as barons.

Knight- Smaller landowners who would get land from the barons. They ranked below the barons in the feudal system, but were much higher ranking than the peasants.

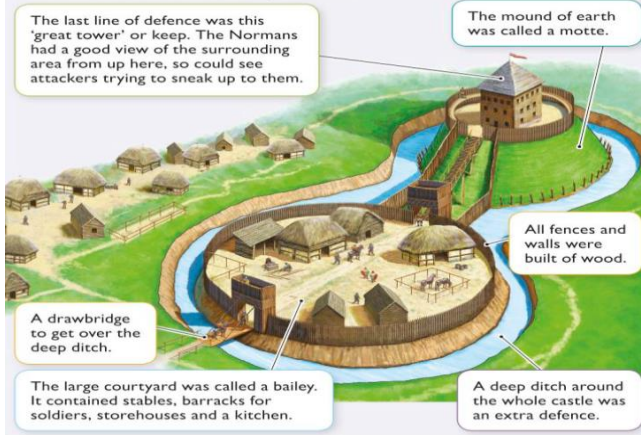
Villein- Peasants who farmed the land. They were part of the property of the baron or knight who owned the land they lived and worked on.

Rebellion- Resistance (not doing something) against an government or leader. There were many rebellions against William in the early years of his rule of England.

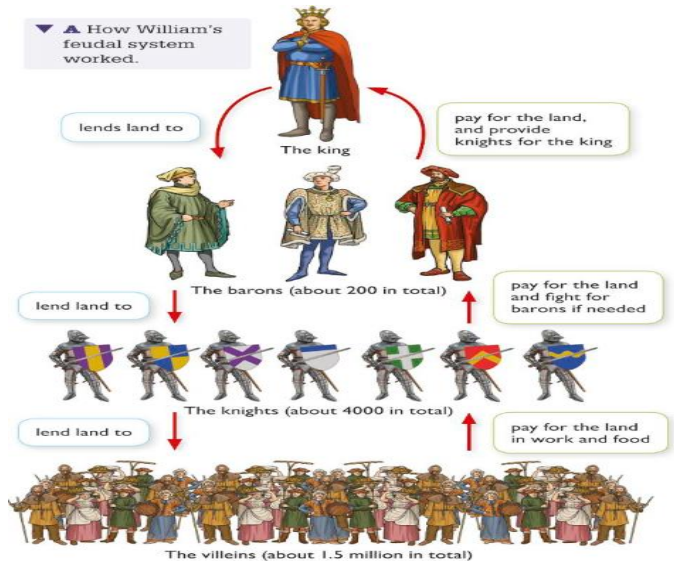
Conquest- Taking control of an area by military force. William's invasion and takeover of England in 1066 is known as the Norman Conquest.

E

▲ A drawing of a **motte and bailey** castle. These were built all over England within a few years after the Norman invasion. Each one took about seven to fourteen days to build.



F



A: Friends and Relationships

- **Relationship** - A relationship is a bond. This could be a between people, people and objects or people and animals.
- **Consent** – Freely agreeing to something.
- **Friendship** – A relationship of trust between people.
- **Acquaintance** - when a person know someone slightly, but who is not a close friend.
- **Loyalty** - a strong feeling of support. Standing by someone.



B: Wellbeing

- **Positive thinking** – A way of thinking that focuses on the good or hopeful aspects of a situation
- **Negativity** – An attitude that is not hopeful or enthusiastic.
- **Optimism** – The quality of being full of hope and emphasising the good parts of a situation.
- **Confidence** - being certain of your abilities or having trust in people.
- **Self-Esteem** – The belief and confidence in your own ability and value.

C: Making Choices

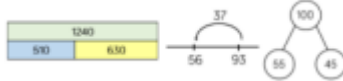
- **Phubbing** - Ignoring a friend so that you can pay attention to your phone or other mobile device.
- **Individual Choice** - A deliberate and active decision made by an individual.
- **Values** - A moral standard of behaviour accepted by society.
- **Malicious behaviour** – Behaviour that is intended to upset or harm other people.
- **Peer Pressure** – A strong influence by a person or group to make people behave the same as that person or group.

D: 5 Facts About The Power Of Positivity!

1. Positive thinking has been found to **reduce stress** levels, which can have a range of benefits for your body.
2. Studies have found that positive thinking can help to **reduce symptoms of depression and anxiety**.
3. When faced with challenges, people with a positive outlook are **better able to cope with stress** and bounce back from adversity.
4. Positive thinking has been found to **boost the immune system**, making it more effective at fighting off infections and diseases.
5. Positive thinking has been linked to a range of **physical health benefits, including, better sleep, and reduced pain levels**.

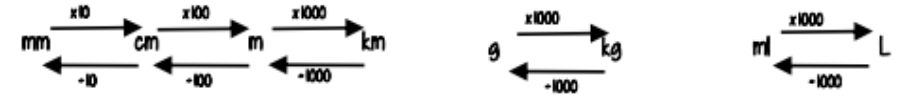


A Solving problems with addition & subtraction



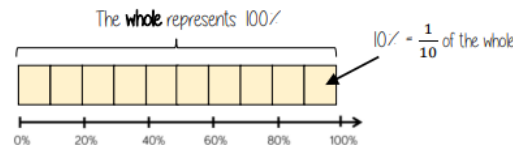
- Commutative:** Changing the order of the operations does not change the result
- Associate:** When you add or multiply you can do so regardless of how the numbers are grouped
- Inverse:** The operation that undoes what was done by the previous operation (the opposite operation)
- Placeholder:** a number that occupies a position to give value
- Perimeter:** the distance / length around a 2D object
- Polygon:** a 2D shape made with straight lines
- Balance:** in financial questions – the amount of money in a bank account
- Credit:** Money that goes into a bank account
- Debit:** Money that leaves a bank account

B Solving problems with multiplication & division



- Array:** an arrangement of items to represent concepts in rows or column
- Multiples:** found by multiplying any number by positive integers
- Factor:** integers that multiply together to get another number
- Mil:** prefix meaning one thousandth
- Centi:** prefix meaning one hundredth
- Kilo:** prefix meaning multiply by 1000
- Quotient:** the result of a division
- Dividend:** the number being divided
- Divisor:** the number we divide by

C Fractions & percentages of amount



- Fraction:** How many parts of a whole we have
- Equivalent:** of equal value
- Whole:** a number with no fractional or decimal part
- Percentage:** parts per 100 (uses the % symbol)
- Place value:** the value of a digit depending on its place in a number. In our decimal number system, each place is 10 times bigger than the place to its right
- Convert:** change into an equivalent representation, often fraction to decimal to a percentage cycle

D 7 Times Tables

7	x	1	=	7
7	x	2	=	14
7	x	3	=	21
7	x	4	=	28
7	x	5	=	35
7	x	6	=	42
7	x	7	=	49
7	x	8	=	56
7	x	9	=	63
7	x	10	=	70
7	x	11	=	77
7	x	12	=	84

A String instruments

Orchestra

Violin, viola, cello and double bass are the main 4 instruments

They play 95% of the time

They sit at the front of the orchestra

They are played with a bow and have 4 strings

They vary in size and pitch

Rock band

The main string instruments are guitar and bass guitar

Other strings

Ukulele, banjo, harp



B Woodwind instruments

Orchestra

Flute, oboe, clarinet, bassoon are the main 4 instruments

They sit behind the strings in the middle of the orchestra

The flute does not have a reed - you blow across the hole

They vary in size and pitch

Other woodwind instruments

Recorder, piccolo, bass clarinet, cor anglais, double bassoon



C Brass instruments

Orchestra

Trumpet, horn, trombone and tuba are the main 4 instruments

They sit near the back of the orchestra

They are very loud but can be played with mutes

They vary in size and pitch

Brass band

Additional instruments are flugel, tenor horn, baritone, euphonium and bugle

D Percussion instruments

Orchestra

2 types- tuned and untuned

Tuned- definite pitch like xylophone, glockenspiel, kettledrums or timpani

Untuned- indefinite pitch like triangle, bass drum, snare drum, wood block

World instruments

Djembe, bongos, congas, claves, agogo, maraca, cabasa, bodhran, tabla, dhol

Rock band

Drum kit



A Components of a Warm Up

- 1. Pulse raiser:** A series of exercises that gradually increase in intensity. It increases your pulse rate, breathing rate and body temperature.
- 2. Mobiliser:** A series of activities that take joints through their full range of movement.
- 3. Stretching:** Stretches can be static or dynamic and prepare the main muscles that will be used in the activity you will be doing.

C Examples of exercises used in a warm up

- 1. Pulse raisers:** jogging, skipping, side steps, jumping jacks.
- 2. Mobilisers:** arm circles, hip rotations, ankle rolls, shoulder rolls
- 3. Dynamic stretching:** knee lifts, walking lunges with side bend
- 4. Static stretches:** Hold the knee straight, bend forward at the waist and stretch the hamstring muscle.

B Effects of a warm up on the body systems

- The **heart** and **lungs** work together to form the **cardiorespiratory system**. The pulse raiser causes the heart rate and breathing rate to increase. This leads to an increased supply of oxygen to the working muscles and the increased removal of carbon dioxide.
- The **muscles** and **bones** work together to form the **musculoskeletal system**. Stretching and mobilising exercises increase the fluid production in joints which helps in increasing range of movement.

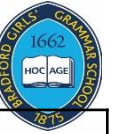
D The muscular system

Muscles work in pairs. One muscle will contract and whilst the other relaxes in order to produce movement.


Muscle pairs that you will use a lot in PE:

Biceps and **triceps** located in the upper arm

Hamstrings and **quadriceps** located in the upper leg



A Hinduism – Fact file

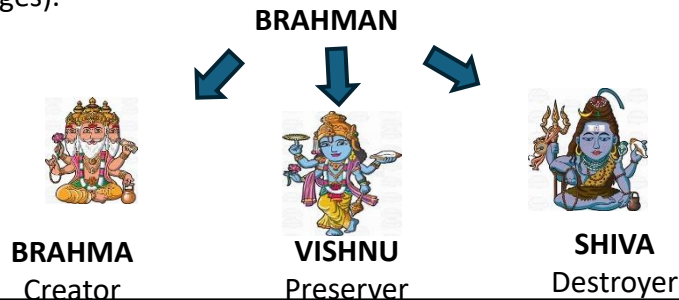
When did it start?	Approx 3000 BCE
Where did it start?	India
Founder?	Unknown
Follower?	Hindu (after the river Indus)
Place of Worship?	Mandir
Religious leader?	Swami
Holy book?	Vedas
Symbol?	Om 

D Key Hindu beliefs

Hindus believe that the actions in this life impact what happens to them when they die. This idea is called **KARMA**. Hindus believe when they die they get **REINCARNATED** (reborn) based on their good or bad karma. All living have a soul (**ATMAN**) so Hindus believe they can be born as a human or an animal. This is why most Hindus are vegetarian and why they believe in **AHIMSA** (non-violence). This cycle of birth, death and rebirth is called **SAMSARA**. Hindus don't want to be reincarnated and instead want to break the cycle of samsara and reach **MOKSHA** where they will be reunited with **BRAHMAN**. They believe one way they can achieve this is by having only good karma and fulfilling their **DHARMA** which is their duty.







B Brahman and the Trimurti

Hindus believe in one main God or Supreme Spirit – Brahman but there are many Gods in Hinduism representing Brahman's characteristics. Three main Gods represent Brahman. These are known as the **TRIMURTI** (3 images).



E Puja

PUJA is a daily act of ritual worship for Hindus. They worship **MURTIS** (images of God) During the worship they will chant the sound 'Om'.

-  **Incense sticks** purify the air
-  A **bell** is rung to let the gods know worship is about to begin
-  **Arti lamp** moved around the shrine symbolising the presence of God
-  **Offerings** are made and then shared at the end
-  **Kum Kum powder** marks the forehead and is a sign of their devotion to God
-  **Water** for purification, offered to God and sipped by those worshipping

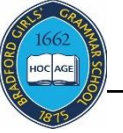
C Avatars of Vishnu

Hindus believe that **VISHNU** (The God of preservation) has come to the Earth in 9 different forms known as **AVATARS**, each time appearing in a different form to help save the world and help keep it safe.

One of Vishnu's most famous avatars is Prince **RAMA**, and his story is told in the **RAMAYANA**. The story tells of when Rama is banished from the kingdom and his wife Sita is kidnapped by an evil demon King **RAVANA**. With the help of **HANUMAN** the monkey God, Rama rescues Sita and kills Ravana. This story is remembered every year at **DIWALI**.

F Gandhi

- Born in Porbandor, India in **1869**.
- He was from a **HIGH CASTE** - so able to go to school.
- Trained as a lawyer in England and then moved to South Africa to fight the **DISCIMINATION** laws there.
- He was thrown off a train because he wanted to sit in first class but wasn't allowed because he wasn't white.
- He moved back to India. He lived a peaceful life and worked to help India gain its independence from the British by doing things such as hunger strikes, marches and encouraging Indians to boycott British goods. (**AHIMSA** – non-violence)
- He also fought for people to be treated equally in India.
- He was killed in **1948** by a Hindu who did not agree with his views.



A Food Chains and Food Webs



Food chains: show the direction of energy flow when one organism eats another (using arrows).

Food webs: show how numerous food chains connect.

Producers: green plants or algae that start the food chain, making their own food by photosynthesis.

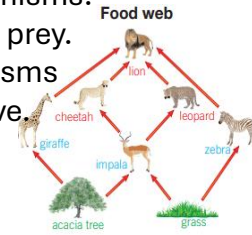
Consumers: animals that eat plants or other animals.

Prey: organisms eaten by other organisms.

Predators: organisms which eat the prey.

Interdependence: how living organisms rely (depend) on each other to survive.

Bioaccumulation: the build up of chemicals along a food chain.



D Energy

Energy: is needed to make things happen. It is a measure of work being done and is measured in joules (J) or kilojoules (kJ). 1 kJ = 1000kJ.

Energy can be in different **energy stores**, including:

Chemical – to do with food, fuels and batteries

Thermal – to do with hot objects

Kinetic – to do with moving objects

Gravitational potential – to do with the position in a gravitational field

Elastic potential – to do with changing shape, squashing and stretching



B. Ecosystems and Competition

Ecosystem: all the organisms found in a particular location, and the area in which they live (including living and non-living features).

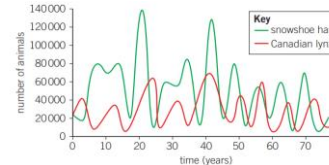
Community: the organisms in an ecosystem.

Habitat: the area in which organisms live.

Niche: the specific role an organism has in an ecosystem.

Competition: organisms compete with each other for resources EG: food, water, space, mates, light and minerals.

Predator-prey relationship: the relationship between predators and prey, and can be shown on graphs (change in the population of one, changes the population of the other).



E Renewable vs Non-renewable

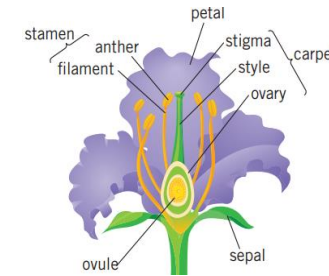
Non-renewable: energy that cannot be replaced within your lifetime (resources include coal, oil, natural gas and nuclear resources – these will eventually run out). Coal, oil and natural gas are **fossil fuels**. They release carbon dioxide when burned, contributing to global warming.

Renewable: energy that can be replaced within your lifetime (resources include wind, tidal, wave, biomass, solar, hydroelectric and geothermal – these resources do not get ‘used up’).

These resources do not produce much carbon dioxide, meaning that they have a smaller effect on global warming.

C. Flowers and Pollination

Parts of a flower:



Stamen: male reproductive part.

Carpel: female reproductive part.

Pollination: plant reproduction involving the fertilisation of the ovule, where pollen is transferred to the stigma. There are two types (cross pollination and self pollination).

Germination: is when a seed begins to grow (this requires water, oxygen and warmth).

Seed dispersal: is when a plant sends its seeds out into the world (can be via wind, animal, water or explosive dispersal).

E Measuring Energy

Law of conservation of energy: energy cannot be created or destroyed, only transferred (the total energy before a change is always equal to the total energy after a change).

Power: a measure of how much energy is transferred per second and is measured in watts (W). To calculate power, use:

$$\text{power (W)} = \frac{\text{energy (J)}}{\text{time (s)}}$$

Dissipated: when energy is transferred to a non-useful store, and is not used for what it was intended (it is wasted).

$$\text{efficiency (\%)} = \frac{\text{useful energy output}}{\text{energy input}} \times 100$$

Efficiency: shows how much of the energy has been used in a useful way. To calculate efficiency, use:



A

Section B	Irregular verb: HACER = to do
hago	I do
haces	<u>you do</u>
<u>hace</u>	he/she does <u>you do (pol.sing)</u>
<u>hacemos</u>	we do
<u>hacéis</u>	you do (fam.pl.)
<u>hacen</u>	they / you do (pol.pl.)

B

¿Qué deportes haces? - What sports do you do?
 Hago artes marciales - I do martial arts.
 Hago atletismo - I do athletics.
 Hago equitación - I do/go horseriding.
 Hago gimnasia - I do gymnastics.
 Hago natación - I do/go swimming.
 Juego al baloncesto - I play basketball.
 Juego al fútbol - I play football.
 Juego al tenis - I play tennis.
 Juego al voleibol - I play volleyball.
 ¡Me gusta! - I like it!
 ¡Me gusta mucho! - I like it a lot!
 ¡Me gusta muchísimo! - I really, really like it!
 ¡Me encanta! - I love it!

C

Irregular verb: JUGAR = to play	
juego	<u>I play</u>
juegas	<u>you play</u>
juega	he/she plays <u>you play (pol.sing)</u>
<u>jugamos</u>	we play
<u>jugáis</u>	you play (fam.pl.)
<u>juegan</u>	they / you play (pol.pl.)

D Juego – I play

al ajedrez (chess)
al baloncesto (basketball)
al fútbol (football)
al tenis (tennis)
a los videojuegos (video games)
con mis amigos (with my friends)

E

¿Qué te gusta hacer? - What do you like to do?
 Me gusta... - I like...
 Me gusta mucho... - I really like...
 No me gusta... - I don't like...
 No me gusta nada... - I don't like at all...
 chatear - to chat online
 escribir correos - to write emails
 escuchar música - to listen to music
 jugar a los videojuegos - to play videogames
 leer - to read
 mandar SMS - to send text messages
 navegar por Internet - to surf the net
 salir con mis amigos - to go out with friends
 ver la television - to watch TV
 porque es... - because it is...
 porque no es... - because it is not...

F Time expressions

Una vez a la semana - once a week
Dos veces a la semana - twice a week
Una vez al mes - once a month
Dos veces al mes - twice a month
Por la mañana - in the morning)
Por la tarde - in the evening
Los fines de semana - at the weekend
Nunca - never



A Textile Fibers

Textile fibers, whether natural or synthetic, are materials that can be spun into yarn and then woven, knitted, or bonded to create fabric.



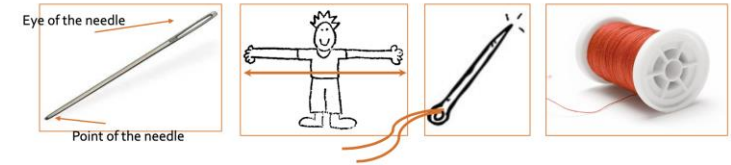
Natural Fibers: Made from animals or plants

Synthetics Fibers: Man Made Fibers

B Embroidery

Embroidery: The art of decorating fabric with stitches using thread or yarn to create designs or patterns.

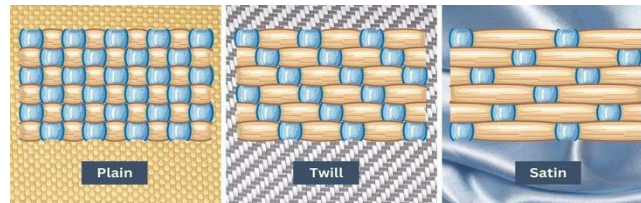
How to thread a needle :



- 1. Prepare the Thread:** Cut a piece of thread about as long as your arm. Trim the end to make it smooth.
- 2. Thread the Needle:** Hold the needle steady. Push the trimmed end of the thread through the needle's eye until a small part comes out the other side.
- 3. Tie a Knot:** Hold both ends of the thread together. Wrap them around your finger to make a loop. Roll the loop between your fingers 2 to 3 times, then pull the thread tightly to form a knot at the end

C Weaving

Weaving : Making fabric by crossing threads over and under each other.



Plain Weave: Threads go over and under each other in a simple crisscross pattern, like a basket.

Twill Weave: Threads are woven in a way that makes diagonal lines, like in jeans.

Satin Weave: Threads float over each other to make the fabric shiny and smooth.

Warp: The vertical paper strips or threads that stay in place as the base for weaving.

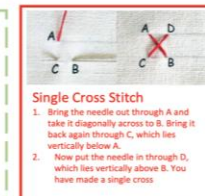
Weft: The horizontal strips or threads woven over and under the warp to create the pattern.

D Embroidery

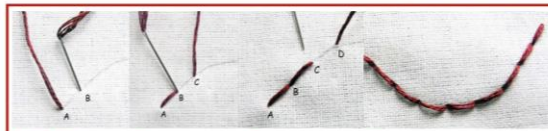


Running Stitch:
With your thumb on the back of the fabric, push the needle up through the fabric, then back down.
To get the beauty of the stitch, I would suggest to try to keep the length of the stitches on the upperside and underside as same as possible.

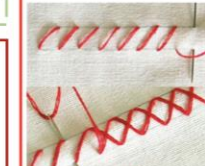
Use this sheet to help you with your embroidery. Remember you can get a higher level for more decorative stitches. But they must be accurate and completed to a high quality finish!



Single Cross Stitch
1. Bring the needle out through A and take it diagonally across to B. Bring it back again through C, which lies vertically below A.
2. Now put the needle in through D, which lies vertically above B. You have made a single cross.



Back Stitch:
1. Bring the thread through A and take it in through B. This creates one stitch.
2. Bring the thread through C and take it in through B. This way, we are creating a stitch by taking the thread backward.
3. Bring the thread through D and take it in through C. Continue this pattern to finish the design.
4. A finished line of back stitch will look like this



Row of Cross Stitch
1. Make a row of diagonal stitches as shown.
2. On the return journey, complete the crosses by connecting the ends using diagonal stitches as shown.

Intervals: The spaces between the stitches

Embellishment : Adding decorative features, like beads, sequins, or stitching, to make fabric look more beautiful.