HIGHDOWN

Year 7

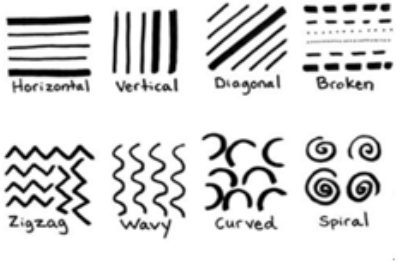
Knowledge Organiser

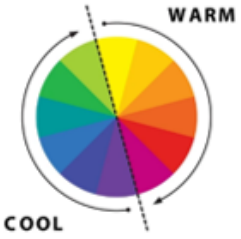
2025-2026

GLF

Where Children Grow, Learn and Flourish

Term 1	FORMAL ELEMENTS	
	Knowledge	**Skills**





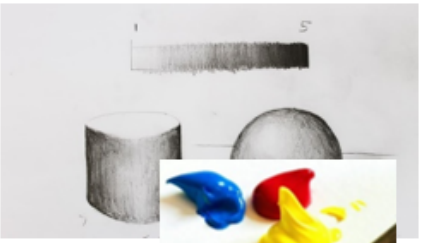
- Know names of the different **types of lines**
- An **implied line** is suggested by edges, objects, or movement.
- Formal elements in Art; **Line**, **Colour**, **Shape**, **Tone**, **Form**, **Texture**, **Pattern**, **Shape**, **Composition**, **Perspective**.
- Know the **cool** colours and **warm** colours above.
- **Complimentary** colours are **OPPOSITE** each other on the **colour wheel** and **Harmonious** colours are **NEXT** to each other.
- In art, contour lines define the outline and shape of an object.
- Know what **Geometric shapes** are and **organic** – here are some examples.

- **Negative space** is the empty or background areas in an Artwork.
- **Shape is 2D, form is 3D**
- SPACE **deals with the illusion of depth in a 2D artwork.**
- Pattern is the use of a repeated design or motif

Artist:

- Van Gogh, Henri Matisse, Miro, Kandinsky, Nikki Farquharson, MC Escher, Yayoi Kusama, Klimt, Cezanne

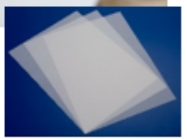
- To use **pencil** to **create Tone** you need to **change pressure**, from gentle and soft – hard, to give a range of light to dark shades.
- To **mark make** you would use lines such as **cross hatching**, **gesture**, dashes, **dots**, and hatching.



- To **make secondary** colours with pencil you **mix with primary colours**, starting with the **lighter** colours.

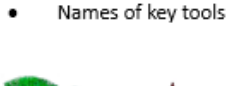
and tertiary paint and colour

- To do an **observational drawing** you should draw from **real life** or a **photograph** of something **real**.
- To **experiment** and **take risks** with materials and techniques in Art is to **explore media and ideas**.
- Names of key tools and materials

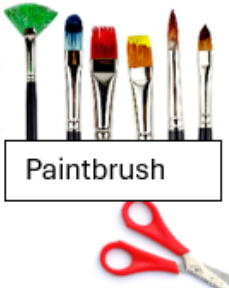


Blending stumps

Tracing paper



Craft Knife/Scalpel



Types of pencil

Paintbrush

Scissors

Printing roller

Charcoal

Acrylic Paint

Water colour

KEY VOCAB+ Concepts	Harmonious colours, Complementary colours, cool colours, warm colours. Two dimensional, three dimensional, flat, historical, contemporary. Weight of line, Organic, Geometric	Sketch, draw, apply, create, mix, blend, pressure, mark make, cross hatch, gesture, layer, mix, brush, charcoal, chalk, graduate, measure.
H/W's	MCQs, Contextual research page, Colour wheel	

Formal Elements in Art: Definitions

Line
A continuous mark made on a surface by a moving point. Lines can vary in width, direction, and length, and can be used to define shapes, create textures, and suggest movement.

Shape
A two-dimensional, enclosed area defined by lines or contrasts in colour or texture. Shapes can be geometric (e.g., circles, squares) or organic (free-form or natural shapes).

Form
A three-dimensional object or the illusion of three dimensions. Forms have height, width, and depth, and can be geometric or organic.

Tone
The lightness or darkness of a colour or shade. Tone helps to create depth and emphasis in an artwork by suggesting light and shadow.

Texture
The surface quality of an object, which can be actual (tactile) or implied (visual). Texture can be rough, smooth, soft, hard, etc.

Colour
Produced by light reflecting off objects. Colour has three main characteristics: hue (the name of the colour), value (lightness or darkness), and intensity (brightness or dullness).

Pattern
A repeated decorative design. Patterns can be regular or irregular and can be used to create rhythm and unity in a composition.

Composition
The arrangement of visual elements within an artwork. A strong composition ensures balance, harmony, and focus, guiding the viewer's eye through the piece.

Perspective
The technique used to represent three-dimensional objects on a two-dimensional surface in a way that looks natural and realistic. Perspective creates a sense of depth and spatial relationships, often using a vanishing point and converging lines.

Value
The degree of lightness or darkness in a colour. Often used interchangeably with tone, value is crucial for creating contrast and the illusion of form.

Space
The area around, between, or within objects. Space can be positive (occupied by objects) or negative (empty areas) and can create a sense of depth or perspective.

Term 2	**CULTURE** Pre 1400s

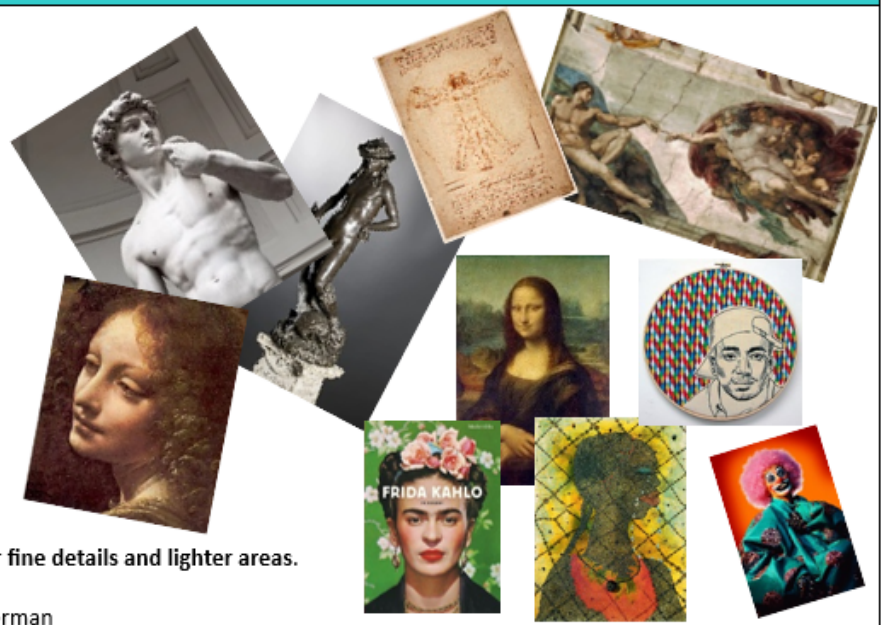
- Culture is **The way of life, beliefs, and traditions of a group of people**.
- **Music, language, and traditions** can be part of a culture.
- Culture can be passed from one generation to another **Through traditions, education, and family**.
- **Religion, Art and Music** and **customs and traditions** can all be part of a culture.
- Examples of Cultures are YOUTH, FAMILY, RELIGION, COUNTRY,
- A **festival** is a **celebration** that is part of a **culture**.
- A tradition is **a custom or belief passed down through generations**.
- Language is an important part of culture.
- **Anthropology is the study of what makes us human**.
- **New technology and global connections** help change cultures.
- Cultural Diversity means **different people having different beliefs and traditions**.
- Sugar skulls are part of the Mexican celebration of Day of the Dead.

Artists:

- José Guadalupe Posada - famous for creating the Day of the dead, Calavera Catrina.
- Suzanne Len

H/W's	MCQs, Contextual research page, culture Jar	
KEY VOCAB	Culture, Religion, Tradition, rituals, heritage, decoration, celebration, career, craft, design, Art, historical, contemporary, knowledge, objective, outcome, response, represent, personal, diversity, festival, anthropologist, values, society, community, world, technology, change.	Research, Design, Develop, Experiment, Explore, Reflect, Improve, Refine, Compose, Present. Blend, Ink, Print, oil pastel, paint, materials, Sgraffito, media, cutting board, scalpel, roller, incise, repeat

Term 3	**PORTRAIT 1401-1850**



- **Sketching the basic shapes and proportions** are the first steps of creating a portrait.
- **Eyes should typically be aligned with the middle of the head.**
- Renaissance means rebirth.
- It began in Florence, Italy, around 1400.
- Leonardo Da Vinci painted the Mona Lisa.
- **Michelangelo** painted the **Sistine chapel** in the **Vatican**.
- **Light and shadow are important factors in achieving a realistic portrait.**
- Portraits were important in the past because they were used for power, status, and storytelling.
- **Chiaroscuro** is an Italian term that means "**light-dark**". In art, it refers to the use of **strong contrasts** between light and dark to create a **dramatic effect.**
- **Different types of portraits:** Self-portraits, family portraits, Selfie portraits, Royal portrait, realistic portrait, representational portrait.
- **Soft pencils blend easily and produce dark, rich tones, while hard pencils are lighter and good for fine details and lighter areas.**
- Key Renaissance artists were Leonardo Da Vinci, Raphael, Michelangelo and Donatello.
- Matched with contemporary artists - Frida Kahlo, Jan van Eyck, Lucky Jackson, Chris Ofili, Cindy Sherman

H/W's	MCQs, Contextual research page, Renaissance self-portrait – 'recreation'.

KEY VOCAB	Renaissance, Rebirth, Portraiture, Artist, Sculptor, Blend, Realistic, Proportion, Scale, Observation, wealth, narrative, power, status, mixed media, emulate, inspire, influence, realism, Medici, humanism, Chiaroscuro, expressive, representation, likeness	Research, Design, Develop, Experiment, Explore, Reflect, Improve, Refine, Compose, Present. Technique, Process, Skill, Apply, Amend, Solve, Stain, Incorporate, Layer Recreate.

Art and Design Process Terms: Definitions

Research
The process of gathering information, references, and inspiration to inform and support your artistic ideas and decisions.

Design
The act of planning and organising visual elements in a composition, considering both aesthetics and functionality.

Develop
To expand and improve initial ideas through sketches, studies, trials, and feedback, moving towards a final outcome.

Experiment
Trying out different materials, techniques, or styles in a creative and open-minded way to discover new possibilities.

Explore
Investigating different approaches, themes, and ideas in depth to better understand and define your artistic direction.

Reflect
Thinking critically about your own work or process to identify strengths, weaknesses, and areas for growth.

Refine
Polishing and adjusting elements of your artwork to achieve greater clarity, cohesion, and precision. narrative elements.

Improve
Making changes based on evaluation and reflection to enhance the quality or impact of your artwork.

Compose
Arranging elements such as line, shape, colour, and space in a deliberate way to create a balanced and effective artwork.

Present
The final display or sharing of artwork, considering presentation methods, context, and audience.

Context
The background, setting, or circumstances in which an artwork was created or is being viewed, including historical, cultural, or personal influences.

Form (in context)
The visible shape or configuration of something, often referring to how an artwork is constructed or its three-dimensional aspects.

Process
The series of actions or steps taken from concept to final artwork, including planning, experimentation, and refinement.

Mood
The atmosphere or emotional tone conveyed by an artwork, often created through choices in colour, lighting, and subject matter.

Content
The subject matter, meaning, or message conveyed by an artwork, including symbolic and

Year 7 Food and Nutrition Theory

Health, Safety and Hygiene: The 4 C's

Cleaning

Clean and disinfect food areas and equipment between different tasks, especially after handling raw food

Cooking

Bacteria can be killed if food is cooked long enough at a high temperature – 75 degrees.

Cooling

Fridges should be 0-5 degrees, idea for chilling foods

Keep food covered or in a container to prevent contaminating other foods

Cross Contamination

Clean and disinfect surfaces and equipment.

Wash your hands thoroughly before cooking and after touching raw food.

Always keep raw food separate to ready-to-eat food

The Eatwell Guide

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

Allergies and intolerances

A food allergy is one particular type of food intolerance that involves the body's immune system. Food intolerances may cause uncomfortable symptoms, but only true allergies involve the immune system.

The immune system is part of the body's defence system, as it protects against foreign organisms like bacteria and viruses. In some people, they may also react to substances in foods, or in the environment, e.g. pollen or animal fur.

This response is known as an allergic reaction.

Fourteen major allergens have been identified and will be highlighted on the label within the ingredients list

Nutritional needs of babies

For the first **six months,** babies will only have **milk.**
At around 6 months, babies will start showing signs of wanting to try **new foods**.

Solid foods can be gradually introduced in addition to milk.
This is called **weaning.** Solids must be **semi-fluid** and **soft**, since the baby has no teeth and cannot chew.
Infants under 12 months should not be given:

- wheat or other cereals to avoid risk of a reaction to gluten, which results in coeliac disease;
- eggs;
- fish and shellfish;
- soft and unpasteurised cheeses.

Throughout **weaning**, babies should not be given foods with **added salt**.
Sugar-containing foods and drinks e.g. biscuits, fruit juices) should be limited between meals.

Nutritional needs of young children

Foods should be eaten as part of **small and frequent meals.**

Children should be encouraged to remain **a healthy weight** with respect to their height – this measure is known as the **Body Mass Index (BMI)**
Children **grow quickly** and need lots of **energy** as they become more active.
Between 2 and 5 years old, children should **gradually** move to a diet based on the **eat well guide**.
Calcium is essential for growing and developed bones. As we cannot make calcium, a calcium-rich diet is a top priority for bones.
Milk is one of the best **natural sources of calcium.**
Childhood is an important time for growth and development.

Children need a good supply of **protein**, and other nutrients including **calcium**, **iron** and **vitamins A & D**

Children begin to take responsibility for their own food choices around this time. It is therefore important to encourage them to eat a healthy, varied diet which is rich in **fruit, vegetables** and **starchy foods**.

Year 7 Food and Nutrition
Practical Skills and Techniques

Knife skills	Use of the hob	Use of the oven	Bread making	Rubbing in
Use the correct coloured chopping board Carry the knife next to your body when moving around the room **Bridge hold** Create a bridge shape and use the knife between your thumb and fingers  **Claw hold** Keep your fingers together and vertical, cutting upright 	Keep pan handles over the worktop, not another hob Don't lean over another hob  **Melting method** Cut ingredients to a smaller size to melt quicker Keep stirring so they don't 'catch' or burn on the bottom	Ensure the oven is set at the correct temperature. Use oven gloves when taking things in and out of the oven Set a timer so you know how long is left When you open the door, wait for the heat to escape before putting things in or taking things out The shelves are hot – be careful when lifting things in and out and don't lean over the door 	**Making a dough** Flour, water and yeast are needed to make a bread dough **Use of raising agents** Yeast releases carbon dioxide bubbles which causes dough rise **Kneading** Kneading dough stretches the gluten, creating the strong texture needed for bread 	This method is commonly used for making shortcrust pastry, crumbles, and scones. The goal is to create distinct pieces of butter coated in flour, which melt during baking and release steam, resulting in a flaky texture Cut the butter into cubes Use you thumbs and fingertips, as these are the coolest part of your hands Rub together until it looks like breadcrumbs – there should be no lumps of butter 

Year 7 Design & Technology
Spinning Top Theory

The Design Process

- Design brief: A statement summarising the intended purpose of the product.
- Task analysis: Initial thoughts on the processes needed to complete the project.
- Research: Gathering information on relevant aspects of the project e.g. the materials.
- Design ideas: Creating a range of possible solutions to the brief.
- Product manufacture: Making the chosen design.
- Testing: Using the product to see if it works or needs modification.
- Evaluation: Reflecting upon the process as a whole to determine what has been successful and what could be improved and how.

Type of timber	Properties/ characteristics	Examples of wood	Products
Hardwood	• Wood is from slow growing trees • Hard-wearing • Smaller, closer wood grain (as slow growing) which makes the wood more dense and stronger but more difficult to work with • More expensive	Deciduous trees e.g. Oak	Furniture, flooring
Softwood	• Wood is from faster growing trees • Easier to produce • Shorter lifespan • Larger, more spaced out wood grain (as faster growing) which makes the wood less dense and easier to work with • Cheaper	Coniferous trees e.g. Pine	Furniture, flooring
Manufactured boards	Made in larger sheets so not limited by size; other properties vary depending on the wood used	Not directly from trees. Made in a factory from tiny pieces of softwood that are glued together e.g. MDF (Medium density fibreboard), plywood	Flat pack furniture

Key vocabulary

Ergonomics: the process of making things easy for people to use them e.g. in terms of shape, weight, height etc. A good 'fit' to the user.

Template: An outline to guide design e.g. to mark out positioning of key components, such as drill holes.

Techniques

Measuring: Using mm as standard unit of measurement

Marking out: Marking with a pencil, drill holes marked as a cross

Cutting to shape: Cutting the waste side of the line

Filing to smooth

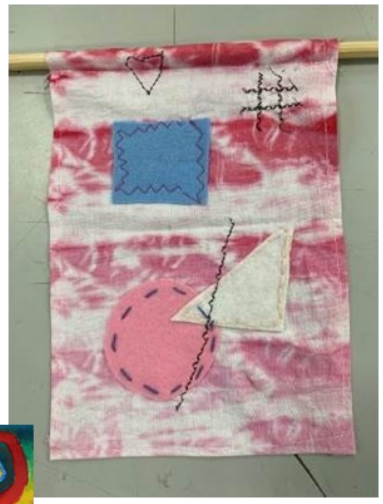
Year 7 Design & Technology
Spinning Top Practical

Name	Use	Name	Use
Bench vice 	Holds your work securely on the table	**Rasp** 	To start shaping your work
Coping saw 	For cutting curves • Only hold the handle • Twist your wrist whilst cutting • Slow and steady pace –don't press too hard	**Safety goggles** 	Must be worn when using machinery to protect your eyes
Flat file 	To smooth your work For flat edges and convex curves	**Sandpaper** 	Comes in different grits Used to create a high-quality finish
G clamp 	Holds the clamp in place whist drilling	**Steel rule** 	For marking out Starts at zero
Half round file 	To smooth your work Flat on one side, curved on the other	**Surform file** 	For shaping your work Used for concave curves
Hand clamp 	To hold your work whilst drilling	**Surform plane** 	For shaping your work Used for flat surfaces and convex curves
Laser cutter 	Computer Aided Manufacture - Cuts materials accurately using a laser	**Tenon saw** 	For cutting straight lines • Point your finger to steady the blade • Use the whole length of the blade • Slow and steady pace –don't press too hard
Pillar drill 	For drilling holes • Work must be clamped • Wear goggles • Slow and steady	**Try square** 	For marking out right angles

Year 7 Textile Design
Wall Hanging Theory

The Design Process

- Design brief: A statement summarising the intended purpose of the product.
- Research: Gathering information on relevant aspects of the project e.g. the artist.
- Design ideas: Creating a range of possible solutions to the brief.
- Product manufacture: Making the chosen design.
- Evaluation: Reflecting upon the process as a whole to determine what has been successful and what could be improved and how.



Techniques

- Resist: Techniques used to block, 'resist', dye from touching fabric.
- Dying fabric: Using colourful dyes and resist methods to change the colour of fabric.
- Sewing: Using a needle and thread to fasten fabric together and add decoration.
- Pattern/Template: Using paper as a guide when cutting out fabric.
- Accuracy: Being precise with measurements e.g. when drawing paper templates and cutting fabric.

Wassily Kandinsky

Wassily Kandinsky (1866–1944) was a Russian-born painter and art theorist, widely regarded as one of the pioneers of abstract art

Kandinsky is one of the most famous artists believed to have had chromesthesia. He described hearing music and seeing colours in response, which deeply influenced his abstract art. He often tried to paint what music "looked like" to him. He could "see" music and "hear" colours. He believed colors had emotional and spiritual power. For example, he associated blue with spirituality and yellow with warmth and energy

Expressionism: Kandinsky used art to express emotions and feelings, often through bold lines, shapes, and colours

He was a pioneer of abstract art, creating works that didn't depict recognizable objects but instead focused on form and colour

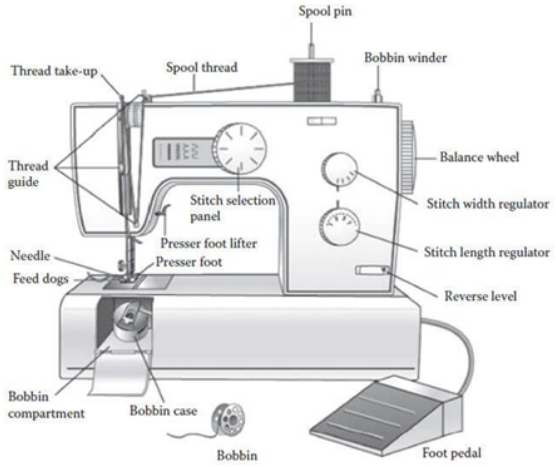
His compositions often feel energetic and in motion, with swirling lines and layered shapes. Kandinsky used circles, triangles, lines, and grids

Material	Description
Cotton	Cotton fabric is a natural fabric, derived from the fibers surrounding the seeds of cotton plants, which emerge in a round, fluffy formation
Felt	Felt is a textile that is produced by matting, condensing, and pressing fibers together. It does not fray when cut
Thread	A thread is a fine, string-like strand of material used to join fabrics together. It's typically made from fibers like cotton, silk, or synthetic materials, twisted together to form a strong, durable strand
Dye	A natural or synthetic substance used to add a colour to or change the colour of something
Wooden dowel	A cylindrical, typically wooden rod

Year 7 Textile Design Wall Hanging Practical

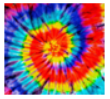
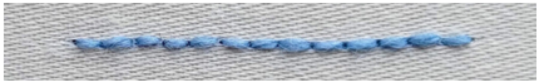
Equipment	Use
Elastic band 	To create the resist when doing tie dye – the band should be secured tightly to stop the dye getting underneath
Scissors 	Paper scissors - For cutting paper only
Shears 	Fabric scissors – For cutting fabric only
Pin 	For securing materials together
Needle 	Used for sewing. The thread goes through the eye of the needle
Iron 	For flattening or pressing fabrics to remove creases. Also sets dye
Sewing machine	A machine that is used for joining together pieces of cloth, with a needle that is operated either by turning a handle or by electricity

Using a Sewing Machine



Prepare the machine – Turn it off for safety and raise the presser foot to free up the tension.
Insert the bobbin – Place a wound bobbin into the bobbin case, following your machine's specific threading direction. (see arrows on machine).
Thread the top thread – Place the thread spool on the spool pin and guide the thread through the machine's threading path. These are numbered on the machine 1-4.
Follow the tension discs – Pull the thread down through the tension discs and back up to the take-up lever. Your thread should look like an 'N' shape.
Thread the needle – Pass the thread through the guides down to the needle, then thread it through the eye of the needle.
Pull up the bobbin thread – Turn the handwheel to lower and raise the needle, catching the bobbin thread, then pull both threads towards the back of the presser foot.

Test the threading – Gently pull the threads to ensure smooth movement before starting to sew.
Before sewing, always lower your presser foot onto your fabric to hold it in place.
Keep fingers away from the needle
When starting and finishing, do a couple of reverse stitches to lock them in

Technique		
Tie Dye	Dying fabric to create a pattern – e.g Spiral, stripes, sunburst, random.	
Applique	Attaching pieces of fabric to a larger piece, using stitching (decorative).	
Running stitch	A dashed line of stitching	
Back stitch	A solid line of stitching	
Cross stitch	Two stitches to form a cross	

Year 7 Knowledge Organiser

Drama

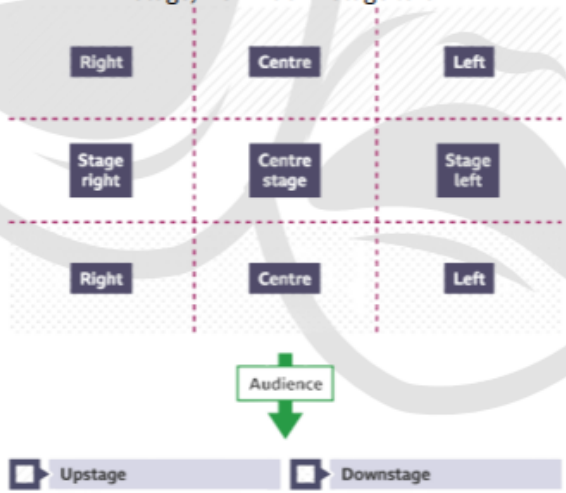
5 Ws — WHO? WHAT? WHERE? WHY? WHEN?

Key terminology

Stimulus: The starting point, idea or inspiration to create a piece of theatre
Context: Background to the play; when and where the play is set
Audience: A group of people who participate in a show or watch a work of theatre
Devising: A method of collaborative theatre-making using improvised games, activities and exercises
Play: Performance during which actors recite lines from a script and perform the actions of the characters
Structure: The way a play is organised, including the order of scenes, events, and how the story unfolds from beginning to end.
Playwright: Someone who write a play
Director: Someone who directs the actors on stage
Blocking: This refers to the precise staging of actors—where they move, stand, sit, or gesture—during a performance
Corpsing: Laughing or breaking character on stage.
Process Drama: is when you and your teacher act out a made-up situation to explore ideas or solve problems.
Characterisation: how an actor creates and presents a character on stage using voice, movement, facial expressions, gestures, and personality traits.
Greek Theatre: An ancient form of drama that began in Greece around the 5th century BCE. It combined poetry, music, and performance to tell stories, often about gods, heroes, and moral lessons.
Chorus: A group of performers who work together on stage to support the story. They may speak, move, or sing as one, and often represent the voice of the community, background characters, or shared emotions

Stage Directions

• From the point of view of the ACTOR •
Stage positions are often abbreviated eg. CS = centre stage, DSL = downstage left



Dramatic Techniques

Still-image: A frozen picture which communicates meaning
Hot-seating: Where a character is questioned by the group about their background, behaviour and motivation
Role on the wall: Explore how a character feels about themselves and what other characters think about them
Thought-track: When a character steps out of a scene to address the audience about how they are feeling
Conscious Corridor: Explore a dilemma faced by a character, using 'angel vs devil' to analyse a decisive moment in greater detail
Split-stage: When two different scenes are performed/present at the same time, side by side on stage
Soundscape: A series of sounds that create a setting or suggest a scene
Role-play: The act of pretending to be somebody else/taking on a character by thinking, acting and even feeling differently
Improvisation: Invent and create content on your feet/making it up as you go along
Flashback: Interrupting the chronological order of the main narrative to take the audience back in time to past events in a character's life
Flash-forward: Takes the narrative forward in time from the current point in the story
Narration: Spoken commentary for the audience about the action onstage (storyteller)
Marking the moment: Highlighting the most important moment to draw the audience's attention to its significance
Mime: Suggesting action, character, emotion without words using only gesture, expression and movement to play out a role.
Body as Prop: Performers use their bodies to represent doors, furniture, vehicles, or even landscapes.

Year 7 Knowledge Organiser

Drama

Vocal Skills

Breath Control: The ability to regulate breathing for speech.
Articulation: The clarity and precision of speech.
Projection: The strength of speaking or singing whereby the voice is used loudly and clearly.
Pitch: The highness or lowness of the voice.
Pace: The speed at which someone speaks.
Pause: A temporary stop in speech for effect.
Tone: The quality or character of sound.
Volume: The loudness or softness of the voice.
Emphasis: Special importance or significance given to a word or phrase.
Intonation: The rise and fall of the voice in speaking

Theatre Genre:
A theatre genre is the type or category of a play, based on its content, tone, and themes.
Examples: *Tragedy, Comedy, Musical, Drama, Farce, Melodrama.*

Theatre Style:
A theatre style is the way a play is performed and presented, including acting, design, and staging choices.
Examples: Naturalism, Expressionism, Physical Theatre, Epic Theatre, Absurdism.

Physical Skills

Posture: The way in which someone holds their body. **Gesture:** A movement of part of the body to express an idea or meaning.
Facial Expression: The use of the face to show mood, feeling or character.
Eye Contact: The act of looking directly into another's eyes.
Movement: The act or process of moving.
Body Language: The use of physical behavior to communicate.
Coordination: The ability to use different parts of the body together smoothly and efficiently.
Balance: The ability to stay upright or in control of body movement.
Proximity: The physical closeness between characters.
Stance: The way in which someone stands.

"Build the world, then tell the story."

Curriculum map


Basic skills


Greek Theatre


Baysdon Village


Devised Drama

Page to Stage

Scripted

Identity and Morality

Year 7 English – Autumn Term – Non-Fiction Interesting Lives

The non-fiction focus on autobiography in this unit provides you with the opportunity to write about yourself and analyse the autobiographical writing of others using what/how/why analytical paragraphs.

Key Term	Definition
Non-fiction	Non-fiction writing presents real-world facts and events. For example, autobiography, news article and textbook.
Autobiography	An account of a person's life, written in first person and often structured chronologically.
Audience	The person or people reading a text, listening to a speech, or watching something.
Form	The type of text. In year 7 English, we will look at autobiographies, novels, short stories, poems, and plays
Purpose	The reason why something has been written. For example, the purpose of an autobiography is to inform.
Analyse	To examine in detail by explaining and interpreting meaning.
Prediction	Suggesting what will or might happen in the future, informed by evidence or examples from a text.
Tone	The general character or attitude of a written or spoken text. For example, a serious tone, or a humorous tone.
Inference	Conclusions reached based on evidence. Verbs like suggests and implies are useful for making inferences.
Evidence	The proof that what you are saying is true. Evidence in English is usually quotes with quotation marks.

You will explore extracts from these texts in this unit. Why not challenge yourself to read the whole autobiography, or another autobiography of your choice?

Year 7 English – Autumn Term – Modern Novel

You will explore a text written by a modern author by thinking critically, responding creatively, and exploring big ideas. Your novel this term will enable you to explore different characters, perspectives and cultures.

Key Term	Definition
Plot	The sequence of interconnected events in a story, including the relationships between them.
Setting	The time, place, and environment in which a story unfolds.
Protagonist	The main character, often the one the reader is meant to identify with or follow.
Antagonist	The character or force that opposes the protagonist, creating conflict.
Genre	The kind of text that is being read. For example, comedy, tragedy, adventure or mystery.
Context	Circumstances surrounding a text including historical, social, political, and literary factors.
Narration	The act or process of telling a story, including the who, what, when, where, why, and how of the story.
Narrative Voice	The perspective from which a story is told, shaping how the reader experiences the narrative.
Description	The use of language and sensory details to convey a vivid understanding of a person, place, thing, or event
Empathy	Understand and sharing the feelings, thoughts, and experiences of another person or character.

You will study one of these three novels in lessons in this unit. Why not challenge yourself to read the other two novels outside of lessons, or another novel by the same author who wrote your class novel?

English is a gateway to communication, imagination, and empathy.

Year 7 – Spring Term – The Canterbury Tales Play

In this unit you will explore a modern drama inspired by Geoffrey Chaucer's 'The Canterbury Tales'. You will create characters and texts such as monologues, whilst also analysing the theme of morality.

Key Term	Definition
Play	A form of dramatic writing, also known as a script, intended for theatrical performance.
Playwright	A person who writes plays. An example of a famous playwright is William Shakespeare.
Dialogue	The spoken exchange of words between two or more characters
Monologue	A speech delivered by a single character, used to reveal their thoughts, emotions, or motivations.
Stage Directions	Instructions in a script that guide actors, directors, and stage crew on how to move or behave.
Interlude	A short dramatic piece, performed between the acts of a play, or as a standalone entertainment.
Archaic Language	Words or phrase that were once commonly used but are now outdated or rare in modern English
Allegory	A story, poem, or picture that can be interpreted to reveal a hidden meaning.
Pilgrimage	A journey undertaken for religious or spiritual reasons, typically to a sacred place.
Fable	A short story that is designed to illustrate a moral lesson or life principle.

You will explore the play version of 'The Canterbury Tales' published by Oxford Playscripts in this unit. Why not challenge yourself to read another play that has been adapted from its original form in the Oxford Playscript series like 'Beowulf' or 'Treasure Island'?

Year 7 – Spring Term – Literature Through Time

In this unit, you will make connections between the context of different time periods and their impact on literature. You will develop your ability to articulate empathetic opinions through creative and persuasive writing.

Key Term	Definition
Novella	A short novel or extended short story. A novella balances elements of novels and short stories
Theme	A recurring idea in a piece of literature. Typical themes include love, relationships, and war.
Convention	A typical feature (of a theme or genre). All genres have certain tropes or conventions.
Mood	A state of mind or feeling. Mood can refer to a person, a group of people or an area or setting.
Sensory Language	Words and phrases using the five senses: sight, smell, touch, sound and taste.
Figurative Language	Phrases or devices that are not literal. Examples include metaphors, similes and personification.
Personification	Giving human characteristics to something that is not human.
Moral	A concern with what is right or wrong. Morals are designed to teach lessons.
Metamorphosis	A complete change that often represents a growth or a new start.
Dystopia	An imagined society where there is great suffering or injustice.

You will explore different literary periods in this unit. Why not explore these further by investigating a literary period in more detail using Massolit or The British Library?

BRITISH LIBRARY

MASSOLIT

Year 7 – Summer Term – Diverse Shorts Short Stories

This unit will promote an understanding of different cultures and critical thinking through short stories. You will become confident at interrogating the message behind texts and what it means to different audiences.

Key Term	Definition
Short Story	A story with a key theme that is significantly shorter than a novel.
Identity	Elements that make a person, such as sexuality, culture and hobbies.
Perspective	An attitude towards something that will influence interpretations.
Stereotype	A widely held but oversimplified or generalised idea of something.
Prejudice	A preconceived judgement which is not based on reason.
Discrimination	The unjust or prejudicial treatment of others.
Controversial	An idea or issue that will cause discussion or argument.
Tolerance	Being respectful and accepting of people who are different from you.
Respect	Valuing people's feelings, opinions, and rights.
Rights	The freedoms and protections that every human should have.

Short stories are a brilliant way to expose yourself to lots of different ideas and perspectives. Why not use the BookTrust's Bookfinder function to explore other short story collections to read?

Year 7 - Summer Term – Identity Poetry

In this unit, we will explore a range of poetry by a range of poets centred around the theme of identify. You will have the opportunity to write your own identity poems, as well as analysing the work of others.

Key Term	Definition
Speaker	The character narrating the poem. This can often be confused with the poet themselves
Stanza	A section of a poem. A stanza is sometimes called a 'verse'.
Rhyme	Repeated sounds in words. This sometimes happens in the words at the ends of lines.
Rhythm	Rhythm is the pattern of sounds and beats in a poem.
Extended Metaphor	A metaphor that continues its comparison across multiple lines or a whole text.
Juxtaposition	When two things are placed side by side to highlight their differences or create a contrast.
Symbolism	When something represents a deeper meaning or idea beyond its normal use.
Semantic Field	A group of words that are related in meaning; for example, nature - trees, flowers, animals.
Dialect	A specific form of language spoken by people in a particular region or group
Sonnet	A poem that has 14 lines, usually following a specific rhyme scheme and structure.

Have you been inspired by the of the poets who you have studied in this unit? Why not take on the challenge set by the Poetry By Heart organisation and learn and perform a poem off by heart?

POETRY BY HEART

Year 7 Writing Focus: Accuracy and Clarity

Throughout all the units you study in year 7, we want you to focus on writing accurately and clearly in a range of different contexts. To do this, we need to focus on accurate paragraphs, sentences, and punctuation.

Key Term	Definition
Paragraph	Groups of linked sentences about a single main topic.
Topic Sentence	This tells the reader what the paragraph is going to be about.
Middle Section	Sentences added to expand on the main idea introduced by the topic sentence.
Final Sentence	A sentence linked to the topic sentence of the next paragraph, or to summarise the current paragraph.
TiPToP	You can use TiPToP (Time, Place, Topic, Person) to help remind you when to start a new paragraph.
Simple Sentence	Contains one main clause with a subject and a verb, expressing a complete thought.
Compound Sentence	Joins two independent clauses with a coordinating conjunction or a semicolon.
Complex Sentence	Combines a main clause with one or more subordinate clauses.
Subordinate Clause	A clause that cannot stand alone and is dependent on a main clause for meaning.
Comma ,	Indicates a brief pause in a sentence. Used to separate elements like items in a list or clauses.
Colon :	Introduces a list, explanation, or quotation after a complete sentence.
Semi-Colon ;	Links two closely related main clauses without using a conjunction.
Brackets ()	Used to add an explanation or missing information within a sentence
Apostrophes ’	Used to show possession or to indicate omitted letters.

Year 7 Reading Focus: Introducing What/How/Why

In year 7, we want you to focus on developing your analytical skills in every English unit, so that you can confidently analyse a range of texts using the What/How/Why paragraph structure and six skills of analysis.

What/How/Why Paragraph Structure	
What – What is your point? (The Main Idea)	This is your topic sentence. Clearly state what you are analysing — a specific idea, technique, or moment in the text. It should be a focused point that sets up the rest of the paragraph.
How - How is your point shown in the text? (The Evidence & Technique)	Provide specific evidence: a quote, event, or moment in the text. Explain how the writer conveys the idea — e.g. through language features, literary devices, structure, or style. Break down the technique being used (e.g.metaphor, word choice, sentence structure).
Why - Why is this important? (The Effect or Deeper Meaning)	Analyse the significance of the technique and evidence. Explain the impact on the reader, character, and/or theme. Connect back to your argument or a bigger idea.

Six Skills of Analysis	
Tentative Language	Using the language of uncertainty to recognise that texts are open to different interpretations and explanations. For example, perhaps’ or ‘maybe’.
Three Part Explanation	An interpretation that contains three ideas in the format of a triadic list.
Zooming In	Choosing an important word or phrase from within a larger quote to explore more deeply.
Multiple Interpretations	Presenting or discussing more than one opinion or viewpoint.
Embedding Quotations	Smoothly incorporating a quote into your own sentence to support your point without disrupting the flow of writing.
Links Across Text	Using different ideas from across a text to support the same point or analytical idea.

Ethics

Key Words Explained

Belief – Something a person thinks is true, even if it can't be proven.
Christianity – A religion based on the life and teachings of Jesus.
Community – A group of people who live together or share common beliefs.
Fact – Something that is true and can be proven.
Faith – Strong trust or belief, especially in religion.
God – A supreme being worshipped in many religions.
Holy book – A special book in a religion (e.g. Bible, Qur'an, Torah).
Islam – A religion followed by Muslims, based on teachings of Prophet Muhammad
Monotheism – Belief in one God.
Omnibenevolent – All-loving or completely good.
Omnipotent – All-powerful.
Omnipresent – Present everywhere at once.
Omniscient – All-knowing.
Opinion – What someone thinks or feels; it's not always based on facts.
Prayer – Talking to God or a higher power.
Prophet – A person chosen by God to deliver messages to people.
Religion – A system of beliefs about God or gods and the rules about how to live.
Worship – Showing love or respect to God or a deity.

Key Concepts Explained

Belief vs. Fact – Beliefs are personal and can't always be proven; facts can.
Ceremonies Mark Life – Many religions celebrate important life events with rituals.
Faith in Action – Believers often show their religion through worship, and practical actions.
Omni-words – These help describe how God is seen in many religions.
Religious Identity – Beliefs often shape identity, lifestyle, and communities.
Religious Rules – Religions often have laws or commands (e.g., Ten Commandments, Five Pillars).
Symbolism – Symbols express big ideas in a simple way, used in religion and also national identity.

Key Words Explained

Calligraphy – Beautiful handwriting, often used in Islamic art.
Ceremony – A special event to mark something important, like a wedding or festival.
Charity – Giving help or money to people in need.
Ethics – Rules about right and wrong that guide our actions.
Geometric patterns – Repeating shapes and designs, common in Islamic art.
Law – Rules made by the government that people must follow.
Mandala – A colourful design made in Buddhism that shows balance and peace.
Mandate – Permission or authority to act in a certain way.
Morals – Ideas about what is right and wrong.
Mosque – A place where Muslims pray.
Remembrance – Remembering important people or events from the past.
Ritual – A set of actions done in a religious or cultural tradition.
Sacred – Something holy or very special to a religion.
Secular – Not connected to religion.
Stained glass – Coloured glass used in windows, often in churches.
Symbol – A picture or object that represents an idea.

ETHICS

Christianity: based on the life, teachings, and unique role of Jesus of Nazareth. The Bible is the holy book, including the Old and New Testaments. Major branches include Catholic, Orthodox, and Protestant, each with different traditions. Many ceremonies exist, the most common and unique to Christianity being breaking of bread and wine to represent Jesus's sacrifice (eucharist, communion), and water to represent cleansing of sins and entry to the Christian community (baptism). Churches are places of worship and community gathering, often featuring a cross, altar, and baptismal font. Christians celebrate events like Easter (resurrection of Jesus) and Christmas (his birth).

Islam: founded by Prophet Muhammad. Beliefs include the Five Pillars (belief, charity, prayer, fasting, pilgrimage (holy journey)), guidance from the Quran (holy book) and Hadith (sayings and details of the life of Muhammed). Sunni & Shia Muslims follow core practices, differ over leadership and details of interpretation. Mosques are used for worship and as community centres with prayer spaces, ablution (washing) areas, and a minaret (for the call to prayer). The Ummah (Muslim community) encourages mutual support.

Judaism: Jews believe in one God and follow teachings from the Torah (first five books of the Hebrew Bible). Synagogues are places of worship and study, often with a Torah scroll and ark. Jewish life includes Shabbat (weekly day of rest), and festivals like Passover. There are different Jewish movements (e.g., Orthodox, Reform) and practices.

Hinduism: no single founder, and many sacred texts. Beliefs include karma (actions affect future), dharma (duty), and moksha (freedom from rebirth). Hindus may worship many gods and goddesses (like Vishnu, Shiva, Lakshmi), seen as forms of one divine reality. Temples are places of worship, with shrines for offerings.

Buddhism: founded by Siddhartha Gautama (the Buddha). Core beliefs include the Four Noble Truths and the Eightfold Path, which offer a way to overcome suffering. Buddhists aim for enlightenment (wisdom and inner peace). Sacred texts vary by tradition. Temples and monasteries are used for meditation, chanting, learning.

Sikhism: founded by Guru Nanak and nine other Gurus. Sikhs believe in one God, equality & service. The Guru Granth Sahib is the holy book. Sikhs aim to remember God, earn an honest living, share with others. Gurdwaras (Sikh places of worship) offer prayer, singing (kirtan), and free community meals (langar). Sikhs have 5 famous symbols of faith.

Beliefs differ from facts and opinions. Belief in God may affect life choices, lifestyles, and communities. God is seen as all-powerful, all-knowing, and all present (the "omni" traits, omni meaning all), in **monotheistic** (belief in one God) beliefs. Religious groups form communities following shared rules and offering support to each other. Communities have areas of meeting & focus (church, mosque, synagogue, temple) and shared belief and focus such as **scripture**/holy books (Bible, Quran, Torah, Guru Granth Sahib).

Further details

Symbols show ideas. They're used in religion (e.g. cross in Christianity). Representation of God varies (e.g. dove (Holy Spirit) in Christianity), Islamic **calligraphy** / writing (Muslims don't draw God, so writing represents). Imagery can tell a story (stained glass windows in churches), show divine unity (Islamic **geometric art**), explain stories (Hindu burning of effigies of an evil demon-king), explain concepts (Buddhist mandalas, created then destroyed to show the nature of impermanence).

Religious traditions include **sacred** laws (e.g. from God or holy texts), even beyond a country's law. Religious values may influence laws (e.g. against murder and the Ten Commandments). Religious 'law' varies: Sharia (Islam) includes good behaviour, worship, and legal rulings (e.g., marriage, inheritance, crime); Halakha (Judaism) governs diet (kosher), holy days, rituals, and behaviour; Canon Law (Christianity – especially Catholicism) focuses on running churches, rituals, and behaviour. Some religious teachings encourage obedience to law if just, but if unjust (e.g. legal discrimination), religious groups may feel the need to protest (e.g. Martin Luther King Jr. or Mahatma Gandhi).

National, personal, religious identity connect. Religion may impact identity, beliefs, dress, diet, and routines (e.g. Muslims praying five times a day, Sikhs wearing the kara – iron bangle). National identity links to religion, such as Christianity shaping British laws and holidays, Hindu festivals like Diwali in India mixing faith and cultural pride, or Jewish language and religion linking to history and land. Some nations are **secular**, meaning religion is separate from government (e.g. France), while others, like Iran, are religious states guided by religious law. Religious symbols may be also national yet not reflect all citizens' beliefs, and identities and symbols can bring unity or division.

GEOGRAPHY

What is geography ?
"Geography is the study of the **Earth's landscapes, peoples, places and environments**. It is the study of the world we live in."

Destination 1: Map Skills: Passport to Adventure!

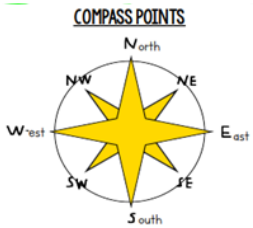
Types of geography
Physical Geography – study of the natural features of the earth.
Human Geography – study of how & where people live.
Environmental Geography – impact of people with the environment.



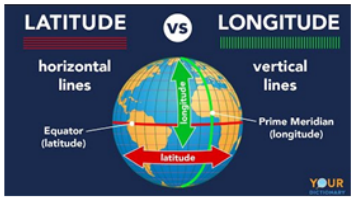
7 Continents & 5 oceans

The United Kingdom (UK) is an Island country located in the continent of Europe. It is made up of four countries: England, Scotland, Northern Ireland and Wales.

Direction



Never Eat Shredded Wheat



Longitude & Latitude

Lattitude: Lines go around the globe. North OR South of the Equator.
There are **7 major lines of latitude**:
- ✓ North Pole - 90°N
- ✓ Tropic of Cancer – 23.5 °N
- ✓ Equator - 0 °
- ✓ Tropic of Capricorn - 23.5 °S
- ✓ South Pole - 90°S

Longitude: Lines go up & down the globe. East OR West of Greenwich Meridian.

MAP SYMBOLS

Symbols are useful for lots of reasons including, space saving on a map, multi-lingual (all languages can understand them), saves time, clear.

4 FIGURE GRID REFERENCES

Along the edges of each map there are numbers. These numbers help you work out where a location is on a map. Northings are numbers that go from bottom to top, Eastings go from left to right.

The first two numbers give the eastings. **32** The second two numbers give the northings. **26**

Remember... eastings then northings!

Along the corridor and up the stairs!

6 FIGURE GRID REFERENCES

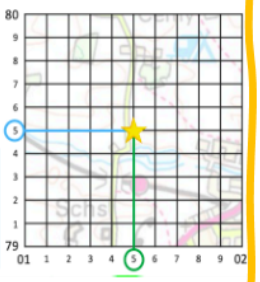
We can use six-figure grid references to find an exact location within a grid square, so they are much more accurate. The grid square is divided into tenths.

Example:

015 795

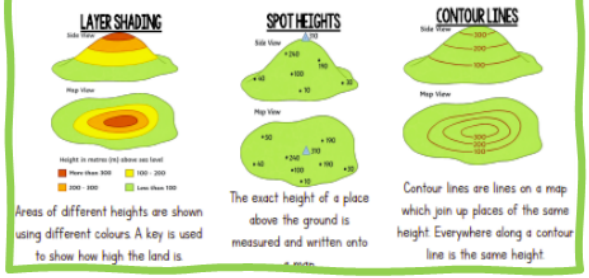
The first three numbers give the easting which includes the number of tenths.

The last three numbers give the northing which includes the number of tenths.



HEIGHT AND RELIEF

RELIEF the difference between the highest and lowest heights of an area.
TOPOGRAPHY the surface features of the earth like hills, mountains, valleys etc.



Areas of different heights are shown using different colours. A key is used to show how high the land is.

The exact height of a place above the ground is measured and written onto

Contour lines are lines on a map which join up places of the same height. Everywhere along a contour line is the same height.

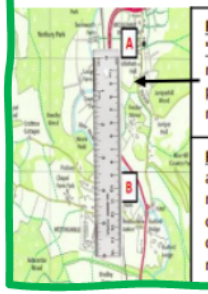
Contour Lines -lines drawn on maps that join places of the same height. They can be used to see the shape of the land.
Triangulation Pillar –spot height in meters above sea level. Often highest point.

Atlas Skills – Type of Maps
Physical maps – these show topography/relief (the shape of the land) and other physical features such as rivers and lakes.
Political maps – these show country borders, cities, transport links.
Thematic maps – these show information such as climate data, agriculture types, biomes.
OS – Ordnance Survey
Atlas – Book of maps

Scale & Distance

Scale can be shown on a map in different ways

Scale Line	0 1 2 km	A scale line on a map shows that 1cm on a map is the same as 1km on the ground. Sometimes it can be shown in miles also.
Ratio	**1:25,000**	Ratio can be shown in different ways on a map, you need to check this when measuring distance. If a scale is 2cm to 1 km, you will need to calculate the distance.



For STRAIGHT LINE distances or "as the crow flies", use a ruler/piece of paper to from one point to the other and then measure this on the scale line.

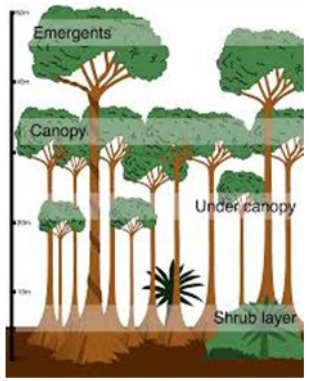
For CURVED LINE distances. Use a ruler/piece of paper to measure to the point of a curve or bend. Then measure the next distance. Calculate the total and measure on the scale line.

Destination 2: Into Africa!
Focus: Tropical Environments

Africa – Tropical Biomes

Climate: average weather conditions of a place over a year. Includes **rainfall** in mm & **temperature** in 0˚.
Weather: daily conditions in the atmosphere.
Biome: large scale ecosystem.
Ecosystem: living organisms interacting with each other and their non-living environment (like air, water, and soil).

Tropical rainforests are structured in distinct layers: **emergent, canopy, understory, and forest floor.** Each layer has unique characteristics in terms of sunlight, temperature, and humidity, influencing the types of plants and animals that thrive there. Rainforests contain approximately 90% of the world's species.



Plant adaptation – Savanna

Baobab trees store large amounts of water in their swollen trunks, shed their leaves during the dry season to reduce water loss through transpiration, and their bark is fire-resistant. They have widespread root systems to access water from a larger area.

Adapt: change to suit with the natural surrounding environment.

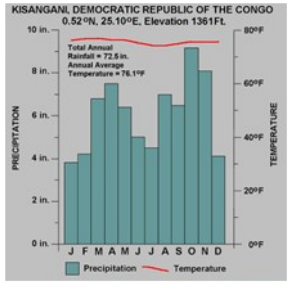
The **Continent of Africa** is located below Europe. The Mediterranean sea to the north. Indian Ocean to the East & Atlantic ocean to the west.
The **Equator** – latitude 0˚ cuts through Africa.
The **Topic of Cancer & Tropic of Capricorn** also run across Africa.

It contains the 3 main tropical biomes

Desert:
The **Sahara Desert** dominates the northern part of Africa, characterized by extremely hot and dry conditions.
Example – Ain Salah, Algeria, Oasis town in the desert, **North Africa.**

Savanna:
This **grassland biome** with scattered trees covers a large portion of central Africa, experiencing **both wet and dry seasons**.
Example – Kenya, East Africa.

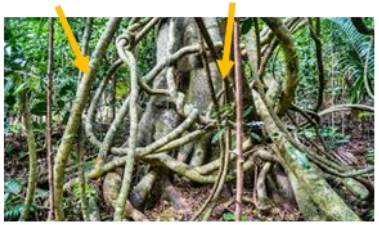
Tropical Rainforest:
Found near the equator, hot & wet all year.
Lush dense forests with vast biodiversity.
Example: Democratic Republic of the Congo



A **climate graph** contains two pieces of information, the amount of rainfall and the temperature of an area. The **temperature** is shown as a **red line**, and **rain is a blue bar** chart.

Acacia trees have **adapted** to survive in harsh hot /dry environments like savannas and deserts. Long, deep roots for accessing groundwater, thorns for protection against grazing animals, and small leaves or phyllodes (flattened leaf stalks) to reduce water loss through transpiration. Store 120 litres of water

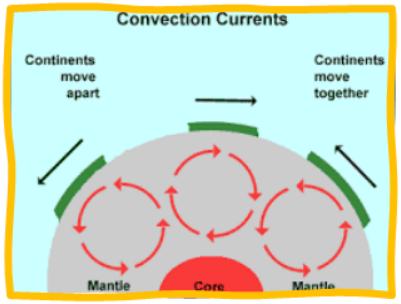
Lianas | **Buttress roots** | **Drip Tip leaves** | **Epiphytes**



Lianas - these are woody vines that have roots in the ground but climb up the trees to reach the sunlight. Their leaves and flowers grow in the canopy.
Drip tips - plants have leaves with pointy tips. This allows water to run off the leaves quickly without damaging or breaking them.
Buttress Roots - large roots have ridges which create a large surface area that help to support large trees.
Epiphytes - these are plants which live on the branches of trees high up in the canopy. They get their nutrients from the air and water, not from the soil.

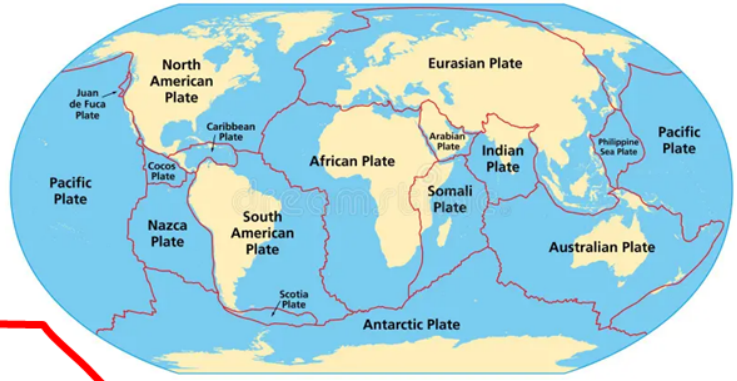
Endangered species -species which are under risk or threat of being extinct. ***Example - Elephants in the Savanna, Kenya, East Africa.***
Conservation -the protection, preservation, management, or restoration of natural environments and resources, including biodiversity and ecosystems.
NGO – Non – governmental organisation e.g. Oxfam OR CITES
CITES -the Convention on International Trade in Endangered Species of Wild Fauna and Flora)

Elephants are in danger from:
- Habitat loss, forests are removed for farming & urbanisation.
- Poaching for ivory.



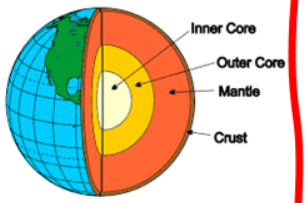
Destination 3: 'An Explosive World!'

Convection Currents are found in the **mantle**. The **core heats** the magma, which rises towards the crust, cools, spreads, sinks and the process repeats. This moves the plates on top causing **continental drift.**



Structure of the Earth

The Earth has **four main layers**



Inner core
Extremely hot and is a very dense solid. Iron & nickel.

Outer core
2,000 km thick and is a liquid, second hottest layer, liquid metal.

Mantle
Semi-molten and about 3,000 km thick. Convection currents active here.

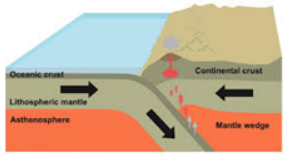
Crust
Rocky outer layer; it is thin compared to the other sections, approximately 5km to 70 km thick, holds the earth's oceans, can be destroyed.

Oceanic Crust
Layer of Earth's crust found beneath the oceans. Thinner, denser, and younger than continental crust. Made primarily of basalt rock and is formed at mid-ocean ridges, where tectonic plates diverge.

Continental Crust
Layer of the Earth that forms the landmasses. Thicker and less dense than the oceanic crust. Primarily composed of granite and other lighter rocks, much older than the oceanic crust.

Destructive Margins

1. A destructive margin occurs due to convection currents moving the plates towards each other;
2. Oceanic crust moves towards the continental crust. The oceanic is forced down as it is denser than continental.
3. As it is forced down it is called subduction. Friction causes earthquakes to occur and the oceanic crust melts creating magma.
4. Pressure builds up and an eruption takes place producing sticky lava = composite volcano formed.



Managing hazards – 3 P's

Prediction – scientific methods to forecast when and where a tectonic hazard might occur. Monitoring seismic activity for earthquakes, gas emissions for volcanoes, historical data to identify patterns.

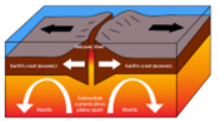
Protection - Earthquake-resistant buildings, tsunami defences, and creating exclusion zones around volcanoes.

Preparation -. evacuation plans, emergency drills, and establishing communication systems to alert the public.

The Earth's crust is broken up into huge slabs called **plates**. The **plates float** on the mantle and are constantly moving by **convection currents**. They bump into, move away from, or rub up against other plates at the plate margins. Slab 'pull' and 'push'.

The **Ring of Fire** is a huge concentration of tectonic activity around the **Pacific Ocean.** Volcanoes can occur away from boundaries at **hotspots** e.g. Hawaii in the middle of the Pacific Ocean

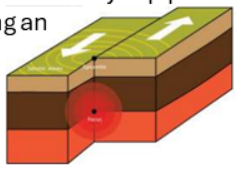
Constructive margins



1. Convection currents move the plates away from each other;
2. Small earthquakes will be felt, and a gap will be created;
3. Fast flowing lava seeps out creating shield volcanoes and new land e.g. Iceland;
4. The Mid-Atlantic Ridge is a famous constructive margin creating 3 cm of new land each year.

Conservative margins

1. Occur due to convection currents causing plates to slide past each other, sometimes they will stick, causing pressure to build up and friction.
2. The convection currents keep trying to move the plates until they slip past each other causing an Earthquake.
3. An example is the San Andreas Fault in the USA.

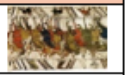


Rule makers and rule breakers: Power and the people, 1066-present day

Medieval period	Renaissance period	Industrial period	Modern period
c.1250 - 1500	c.1500 - 1750	c.1750 - 1900	c.1900 - present day

Key term	Definition
Primary source	Account or object produced by someone who experienced the event or era being studied
Interpretations	Different ways in which history has been understood and presented
Significance	The evaluation of the importance of events and people in history
Chronology	The order in which events took place
Inference	'Reading between the lines' of evidence to draw a conclusion

Terms 1-2: Medieval

Key term	Definition	
Battle of Hastings	Battle in 1066 where the Normans conquered England	
Monarchy	Form of government led by a monarch, such as a king or queen	
Feudal system	A way of sorting the population of England in order of importance during the Middle Ages	
Nobility	The highest social class in the feudal system, including lords and barons. They got land from the King in return for services like fighting	
Peasants/villeins	The lowest social class in the feudal system who worked on the land. About 90% of people in medieval England were peasants	
Taxation	When a government collects money from the population	

Peasants' Revolt	The rebellion of peasants in England in 1381 led by Wat Tyler	
Magna Carta	Document signed by King John in 1215 which gave certain rights to the people of England and limited the monarch's power	
Catholic Church	The only Christian Church in the medieval period	
The Pope	Head of the Catholic Church	
Bishop	An important position in the Catholic Church	
Archbishop of Canterbury	The most important position in the Catholic Church in England	

Terms 3-4: Renaissance

Key term	Definition	
Reformation	The reform of the Church during the Tudor period	
Protestant	Group of Christians that protested against the Catholic Church	
Break with Rome	Henry VIII's decision to establish the Church of England and break from the Roman Catholic Church	
Religious settlement	Elizabeth I's compromise on religion passed in 1559	
Parliament	Assembly of people responsible for passing laws	

Civil war	A war between groups in the same country	
Treason	The crime of betraying one's own country	
Republic	A country with no monarch	
Restoration	The return of the monarchy in 1660	
Glorious Revolution	The overthrow of James II in 1688, leading to Parliament becoming the true power in England rather than the monarchy	

Terms 5-6: Industrial and Modern

Key term	Definition	
French Revolution	The overthrow of the French monarchy in 1789 leading to France becoming a republic	
Reform	Changes made by government to improve people's rights or conditions	
Suffrage	The right to vote	
Industrial revolution	Period of huge change in technological advances 1750-1900	
Democracy	A government where the people have a say in how it is run	
Chartists	British working-class movement aimed at parliamentary reform	
Empire	A group of countries ruled by a single government or ruler, e.g. the British Empire	
Transatlantic slave trade	The transportation of enslaved African people to the Americas	
Suffragettes	Group of women in the early 20th century demanding the right to vote through direct action	

Suffragists	Group of women in the early 20th century campaigning the right to vote through peaceful campaigning	
World War One	Global war taking place between 1914-1918	
Russian Revolution	The overthrow of the Russian monarchy in 1917	
Tsar	The Russian Emperor	
Communism	Political system where everything is owned and controlled by the government	
Bolsheviks	Communist revolutionary party led by Lenin	
Lenin	Leader of the Bolsheviks	
Dictatorship	Form of government where all the power is held by a single person or small group of people	

Read	Watch	Listen	Do
The Seeing Stone by Celia Rees	Horrible Histories TV show	You're Dead to Me podcast (Radio Edit)	Join History Club
Eliza Rose/Lady Mary by Lucy Worsley	Dan Snow, 1066	Homeschool History podcast	Visit Reading Museum
My name is Victoria by Lucy Worsley	Tony Robinson's History of Britain	History Hit podcast	Visit the Milestones Museum
Chains by Laurie Halse Anderson	Peterloo movie (12A)		Do the Caversham History trail
Ruby in the Smoke by Philip Pullman			Visit a castle
Things a Bright Girl Can Do by Sally Nichols			
Until We Win by Linda Newbery			
Make More Noise stories			
			

Binary (BASE 2)

This is the only thing computers can understand, all information and data (no matter how complex can be reduced to ones and zeroes.

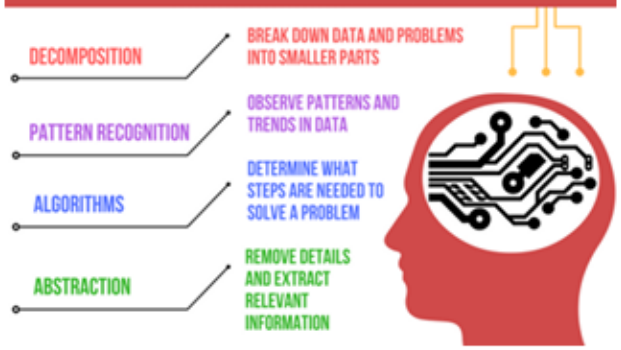
Each bit is either True (1) or False (0), a computer would read the BYTE (8 bits) 01011111 as 95.

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

Denary	Binary
0	0000
1	0001
2	0010
3	0011
4	0100
5	0101
6	0110
7	0111
8	1000
9	1001

When any key on a keyboard is pressed it needs to be converted into a binary number to be processed by the computer, these are called ASCII codes and the letter A would be 0100 0001

COMPUTATIONAL THINKING



Logical thinking is one part of **Computational thinking** that allows you to make logical decisions and deductions based on facts. We use the following techniques to help us solve problems using computational thinking.

Decomposition: Breaking down a problem into smaller parts. Instead of feeling overwhelmed by a big challenge, we split it into bite-sized pieces we can solve one at a time.

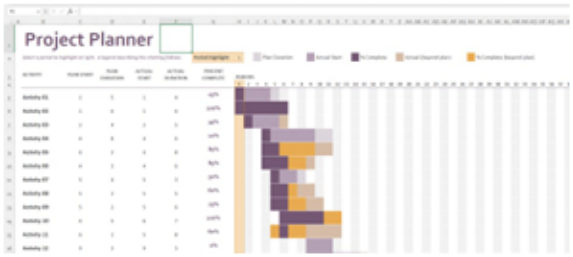
Pattern Recognition: Spotting similarities or trends. This helps us make predictions and reuse solutions.

Abstraction: Focusing on the important details and ignoring the unnecessary ones, making complex problems easier to understand and solve.

Algorithms: A clear set of steps to solve a problem, which may be written down in words, diagrams or code.

Data Modelling: Spreadsheets

Spreadsheets are computer tools that help you store, organise, and work with data. They are often used in science and business to perform calculations and make sense of information quickly and easily.



Columns are represented by letters and go up and down the spreadsheet, **Rows** are represented by numbers and go across the page.

Cells are used to hold calculations and data.

Cell References are made up of a Column letter followed by a Row Number , for example B7. They allow you to use the cells data in other calculations.

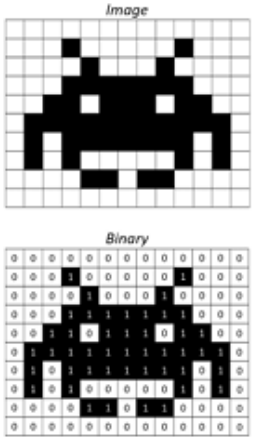
Formula are calculations in a spreadsheet, they always start with an equals (=) and use cell references to refer to cell values.

Functions are calculations which are built into the spreadsheet, these include MIN, MAX, AVERAGE, SUM and COUNT.

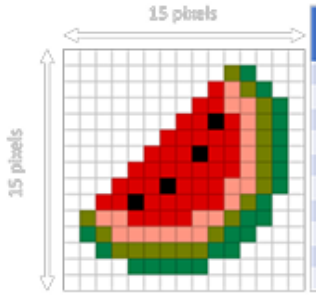
Charts and graphs allow you to visualise the data, which can make it far easier to spot patterns.

Bitmaps

Bitmap images work by dividing up an image into small squares known as **pixels.** Black and white images use 1 bit per pixel where 0 means black and 1 means white.



If we increase the number of **bits per pixel** we can increase the **colour depth**, allowing more than simple black and white images.



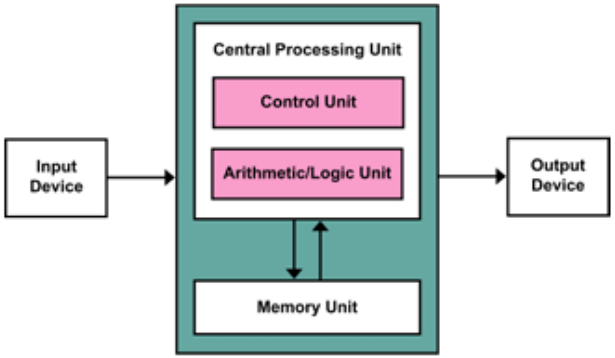
Colour depth in bits	Number of possible colours
1	2
2	4
3	8
4	16
5	32
6	64
7	128
8	256
…	
24	16,777,215

The resolution of an image is the number of pixels high multiplied by the number of pixels wide… or h * w.

What is a Computer?

(There is no such thing as a computer)

A Computer System is made up of the physical electronic components (Hardware) and the code required to make it functional (Software) .



The most important hardware components include:

Motherboard

Secondary Storage (HDD)

Central **P**rocessing **U**nit (CPU)

Primary Memory (RAM)

Software we will Use

We use a wide range of Software at Highdown, you will learn how to use all of the following applications during your first year at Highdown School.

Application	Purpose
Teams	Each of your lessons will have a NOTEBOOK on teams.
Word	Word Processing software, you will learn how to create professional documents.
Excel	Spreadsheet, data modelling software.
PowerPoint	Presentation Software, you will learn how to create digital media for a given target audience,
Outlook	Email, one of the most important forms of digital communication.

MATHS

Being a Mathematician is about how you think, not just what you know. Thinking like a Mathematician will help you **solve problems**, make **better decisions** and **communicate** your ideas to others in every aspect of your life and work.

Great Mathematicians are

Adventurous

We try new problems
-
We don't give up
-
We make mistakes

Accepting

We work together respectfully
-
We change our minds after hearing other ideas
-
We learn from our mistakes

Articulate

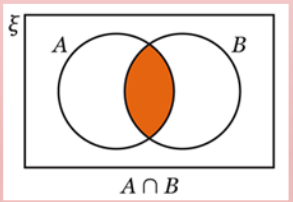
We use formal mathematical language
-
We understand logic and proof
-
We explain and justify our ideas

How have you been a Great Mathematician today? What will you do to be even greater?

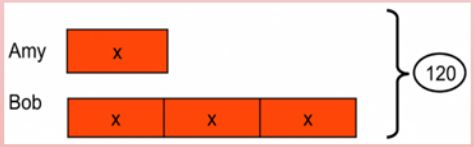
Visualising as a Mathematician

To become a fluent mathematician we will represent the same idea in lots of different ways. Here are some of the representations that we will be using in Year 7.

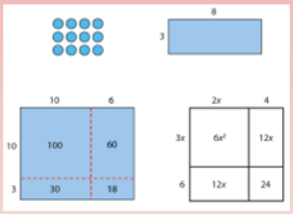
Venn Diagrams



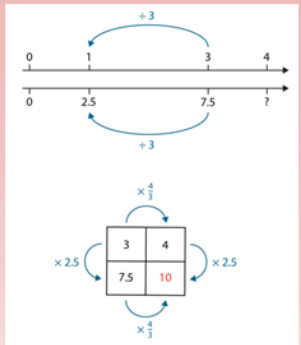
Bar Models



Arrays and Area Models



Number Lines & Ratio Tables



Playing as a Mathematician

Adventurous mathematicians love playing with maths. Here are some of the competitions and activities that you will be able to take part in this year.

Join a face to face or online **maths circle**
AXIOM MATHS
From September

Solve the **GCHQ Christmas Challenge**
December

Write for the **Young Mathematical Story Authors** competition
January

Train for and compete in the **Junior Maths Challenge**
UK Maths Trust
April/May

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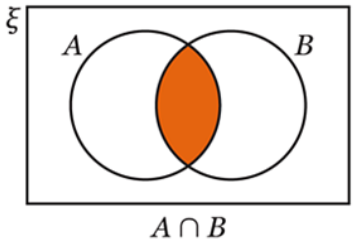
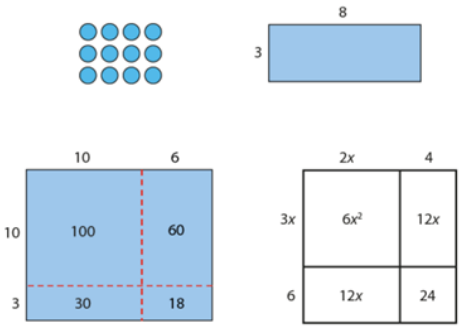


Bar Models

Arrays and Area Models



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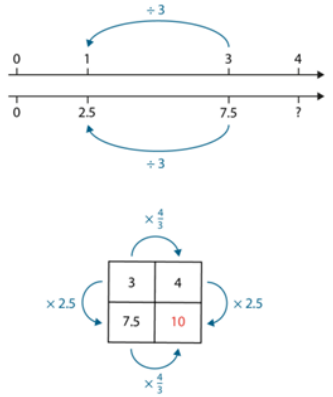

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Communicating as a Mathematician

These are the key mathematical terms that we will be learning and using throughout Year 7. You will continue to use them throughout your mathematical career. Having a clear understanding of these terms will help you articulate your mathematical ideas with clarity and precision.

Angle	A measure of the amount of turn between two lines.
Anti-clockwise	Turning in the opposite direction to a clock's hands.
Area	The amount of space inside a closed shape, measured in square units.
Associativity	The rule that says numbers can be grouped in any way when adding or multiplying (e.g. (2 + 3) + 4 = 2 + (3 + 4)).
Centre of Enlargement	The fixed point used when a shape is enlarged.
Centre of Rotation	The fixed point a shape turns around during rotation.
Clockwise	Turning in the same direction as a clock's hands.
Coefficient	A number in front of a variable (e.g. in 3x, 3 is the coefficient).
Column Vector	A way to show movement (e.g. up/down and left/right) using two numbers in a column.
Commutativity	The rule that says you can add or multiply numbers in any order (e.g. 3 + 5 = 5 + 3).
Composite Shape	A shape made by combining two or more simple shapes.
Congruent	Shapes that are exactly the same size and shape.
Constant of Proportionality	The fixed number that links two values in direct proportion.
Coordinate	A pair of numbers that show a point's position on a grid (e.g. (3, 4)).
Degree	In geometry, a unit for measuring angles.
Denominator	The bottom number of a fraction; shows how many parts the whole is divided into.
Diagonal	A line joining two non-adjacent corners in a shape.
Distributivity	The rule for spreading multiplication over addition (e.g. 2 × (3 + 4) = 2×3 + 2×4).
Divisibility	Tells whether one number can be divided exactly by another.
Enlargement	Making a shape bigger or smaller while keeping its shape the same.
Equation	A maths sentence that uses an equals sign to show two things are the same.
Expression	A mix of numbers, letters, and operations (but no equals sign).
Factor	A number that divides exactly into another number (e.g. 3 is a factor of 12).
Factor Pairs	Two numbers that multiply to make another number (e.g. 3 and 4 are a factor pair of 12).
Gradient	How steep a line is.
Image	The result of a transformation (like a shape after it's been moved, rotated, or enlarged).
Index	A small number that shows how many times a number is multiplied by itself (e.g. $3^2 = 3 \times 3$).
Indices	The plural of index.
Inequality	A maths sentence that shows one value is bigger or smaller than another using symbols like >, <, ≥, ≤.
Integer	A number that is not a fraction; a whole number.
Intersect	Where two lines cross each other.
Isosceles Triangle	A triangle with two sides the same length and two equal angles.

Communicating as a Mathematician

Line	A path with no ends.
Line Segment	Part of a line with two fixed ends.
Lowest Common Denominator	The smallest number that is a multiple of two or more denominators.
Multiple	A number you get when you multiply another number (e.g. 20 is a multiple of 4).
Negative	A number less than zero.
Numerator	The top number of a fraction; shows how many parts you have.
Object	The original shape before a transformation.
Ordinate	The second number in a coordinate pair; shows the vertical position (y-axis).
Parallel	Lines that are always the same distance apart and never meet on the same flat surface.
Perimeter	The total distance around the edge of a shape.
Perpendicular	Lines that meet at a right angle (90°).
Polygon	A flat shape with straight sides.
Positive	A number greater than zero.
Prime Number	A number with exactly two factors 1 and itself (e.g. 7).
Product	The answer when you multiply numbers together.
Proportion	A part or amount in comparison to the whole.
Quadrilateral	A shape with four sides.
Ratio	A way to compare amounts (e.g. 2:3).
Reciprocal	What you multiply a number by to get 1 (e.g. the reciprocal of 4 is ¼).
Reflection	A flip of a shape over a mirror line.
Regular	A shape where all sides and angles are equal.
Rotation	Turning a shape around a fixed point.
Rotational Symmetry	A shape has this if it still looks the same after being turned.
Scale Factor	A number used to enlarge or reduce a shape.
Square Number	A number multiplied by itself (e.g. $5 \times 5 = 25$).
Square Root	A number that, when multiplied by itself, gives the number that is square rooted (e.g. $\sqrt{25} = 5$).
Sum	The answer when numbers are added.
Symmetry	A shape has symmetry if it can be folded or reflected to match exactly.
Transformation	Moving a shape by rotation, reflection, translation or enlargement.
Translation	Moving a shape without turning or flipping it.
Transversal	A line that cuts across two or more lines.
Variable	A letter that represents a number.

You probably know a lot of these already. Which ones have you got left to learn? Tick them off as you go.

Working as a Mathematician

These are the key skills that we will be learning and using in Year 7. Mastering and becoming fluent in these skills will help you become an even better mathematician and problem solver.

- Add and subtract decimals (M429, M152)
- Find factors and multiples of numbers (M823)
- Use tests for divisibility by 2, 3, 5, 10 (M823)
- Use associativity, distributivity and commutativity in calculations (M409, M637, M952)
- Express a number as the product of prime factors (M108)
- Find the Highest Common Factor of two numbers (M698, M365)
- Find the Lowest Common Multiple of two numbers (M227, M365)
- Order positive and negative numbers (M527)
- Add and subtract positive and negative numbers (M106)
- Multiply and divide positive and negative numbers (M288)
- Form equations and inequalities (M957
- Substitute into an expression (M417, M327)
- Simplify algebraic expressions (M795, M531, M949, M120)
- Expand algebraic expressions (M237, M792)
- Factorise algebraic expressions (M100)
- Manipulate equations and inequalities (M957)
- Read and plot coordinates (M618)
- Link linear equations with coordinates (M797, M932)
- Identify parallel and perpendicular lines (U377)
- Find the gradient of a straight line (M544, M888)
- Find missing angles at a point and on a line (M818)
- Find missing angels within parallel lines (M606)
- Find missing angles in triangles and quadrilaterals (M351, M679)
- Classify triangles and quadrilaterals by their properties (M276)
- Construct triangles with ruler and compasses (M565)
- Find the perimeter of a polygon (M920, M635, M690)
- Find the area of triangles and parallelograms (M900, M390, M610, M291)
- Find the area and perimeter of composite shapes (M269. M996)
- Simplify fractions (M671)
- Compare fractions (M335)
- Find equivalent fractions (M410)
- Convert between improper fractions and mixed numbers (M601)
- Convert between fractions and decimals (M958)
- Find a fraction of an amount (M695, M684)
- Multiply with fractions (M157, M197)
- Divide with fractions (M110)
- Use reciprocals when calculating with fractions (M216)
- Addition and subtraction with fractions (M835, M931)
- Describe proportion using ratio
- Divide an amount in a ratio (M525)
- Convert between fractions and ratios (M267)
- Carry out and describe translations, rotations, reflections and enlargements (M139, M290, M90, M178)

The codes in brackets will take you to video tutorials and questions on Sparx

FRENCH

Avoir = to have

J'ai = I have

Tu as = you have

Il a = he has

Elle a = she has

Nous avons = we have

Vous avez = you have (plural/formal)

Ils/elles ont = they have

Être = to be

Je suis = I am

Tu es = you are

Il est = he is

Elle est = she is

Nous sommes = we are

Vous êtes = you are (plural/formal)

Ils/elles sont = they are

Possessive pronouns - my

Mon (masculine noun)

Ma (feminine noun)

Mes (plural noun)

Opinions

J'aime = I like

J'adore = I love

Je n'aime pas = I don't like

Je déteste = I hate

Je pense que = I think that

Je crois que = I believe that

A mon avis = in my opinion

Negatives :

ne...pas = not/don't

ne...jamais = never

The verb goes in the middle

Present tense -er regular verbs e.g étudier/ habiter/jouer

J'habite

Tu habites

Il/elle habite

Nous habitons

Ils/elles habitent

Near future tense

Je vais

Il/elle va + infinitive verb

Nous allons

Ils vont

Connectives and intensifiers :

et = and mais = but

cependant = however

très = very

assez = quite

un peu = a little bit

vraiment = really

avec = with

trop = too

parce que/ car = because

donc = so

Modal verbs :

Je peux = I can

On peut = we can

Je dois = I must

On doit = we must

They are followed by an infinitive verb e.g. aller/ jouer/faire

Time/frequency phrases :

D'abord = firstly

Normalement = normally

Puis = then

Ensuite = next

Souvent = often

Le matin = in the morning

Le soir = in the evening

Plus tard = later

Le week-end = at the weekend

Adjectives and adjectival agreement :

amusant = fun
bavard = talkative
sympa = kind
ennuyeux = boring
drôle = funny
timide = shy
embêtant = annoying
paresseux = lazy
gentil = kind
intéressant = interesting
utile = useful
facile = easy
difficile = difficult
passionnant = exciting
moderne = modern
*grand = big
*petit = small
*joli = pretty

Bleu = blue Vert = green

Noir = black Jaune = yellow

Gris = grey Rose = pink

Rouge = red Blanc = white

Orange = orange

Marron = brown

Colours go after the noun they are describing.

Colours need to agree in gender and number with the noun. Add an 'e' to the colour to make it feminine, add an 's' to make it plural.

Exceptions :
Blanc – blanche
Orange – doesn't change
Marron – doesn't change

Adjectives normally go after the noun they are describing apart from the ones with a * which go before the noun.
Adjectives have to agree in gender and number with the noun they are describing.
Add an 'e' to the adjective to make it feminine.

Exceptions :
Adjectives that end in 'eur' or 'eux' change to 'euse' in the feminine form.
'Gentil' changes to 'gentille' in the feminine form.
Adjectives that already end in an 'e' do not change in the feminine form.
Add an 's' to make the adjective plural (unless the adjective ends with an 'x') if you are describing a plural noun.

Key verbs:

Étudier = to study
Habiter = to live
Travailler = to work
Aller = to go
Jouer = to play
Faire = to do
Écouter = to listen
Manger = to eat
Il y a = there is Il n'y a pas de = there is not
C'est = it is Ce n'est pas = it is not
Je voudrais = I would like
J'aimerais = I would like

Reflexive verbs :

Je m'entends bien avec = I get on well with
Je ne m'entends pas bien avec = I don't get on well with
Je me dispute avec = I argue with
Je me réveille = I wake up
Je me lève = I get up
Je me douche = I have a shower
Je me brosse les dents = I brush my teeth
Je m'habille = I get dressed
Je me couche = I go to bed

Mandarin

Greetings:

你好 = hello

你好吗? = how are you

谢谢 = thanks

再见 = goodbye

我很好 = I'm fine

早上好 = good morning

下午好 = good afternoon

Key phrases:

你几岁？ = how old are you?

我十一岁/十二岁 = I am 11/12 years old.

你是哪国人？ =

What is your nationality?

中国人 = Chinese

英国人 = British

法国人 = French

美国人 = American

香港人 = Hong Kong people

台湾人 = Taiwanese

Pronouns:

你/你们 = you

我 = I　我们 = we

他 = he　她 = she

他们/她们 = they

Possessive pronouns:

我的 = my

你的 = yours

他的 = his

她的 = her

他们的 = their

Family members:

妈妈 = mother

爸爸 = father

姐姐 = big sister

妹妹 = little sister

哥哥 = big brother

弟弟 = little brother

Pets:

一只狗 = one dog

一只猫 = one cat

一只鸟 = one bird

一只兔子 = one rabbit

一条鱼 = one fish

一条蛇 = one snake

颜色 = colours:

红色 = red

蓝色 = blue

黄色 = yellow

白色 = white

黑色 = black

绿色 = green

Word order:

- In Chinese, the noun or pronoun must always be at the beginning of the sentence.

e.g. Person + Time + Action = 我星期一上网 (I surf internet on Monday.)

- The word 'also' must be after the noun or pronoun.

e.g. I like A, also I like B = 我喜欢A，我也喜欢B

- After the word 'also' you must use a verb.

e.g. I not only do A, but also do B =不仅 action A 而且+ action B

Key verbs:

觉得 = think

有 = have

没有 = don't have

是 = be　不是 = be not

喜欢 = like

不喜欢 = don't like

Numbers:

一 = 1 二 = 2 三 = 3 四 = 4 五 = 5 六 = 6 七 = 7 八 = 8 九 = 9 十 = 10

Chinese order for giving the date: Year 年 + Month 月 + date 日

年 = year 月 = month 日 = date

星期一 = Monday 星期二 = Tuesday 星期三 = Wednesday 星期四 = Thursday
星期五 = Friday 星期六 = Saturday 星期天/星期日 = Sunday

一月 = January	二月 = February	三月 = March	四月 = April
五月 = May	六月 =June	七月 = July	八月 = August
九月 = September	十月 = October	十一月 = November	十二月 =December

运动 = Sports:

踢足球 = play football

打网球 = play tennis

打篮球 = play basketball

打乒乓球 = play ping pong

跑步 = running

游泳 = swimming

爱好 = Hobbies:

看书 = read books
上网 = surfing Internet
看电影 = watch films
看电视 = watch TV
听音乐 = listen to music
买东西 = shopping
玩滑板 = skateboard
玩电脑游戏 = play pc games

Connectives and intensifiers:

和 = and
但是 = but
很 = very
非常 = extremely
相当 = quite
最 = most
特别 = especially
极了 = extremely
真 = really
超级 = super
Person也 + action = also
不仅action A 而且action B
= not only... but also
因为 = because
所以 = so

Key adjectives:

有意思 = funny 没意思 = boring 好玩/有趣 = interesting

高 = tall 矮 = short 胖 = fat 瘦 = thin

漂亮 = beautiful 帅 = handsome

Spanish

Tener = to have

tengo = I have

tienes = you have

tiene = he has

tiene = she has

tenemos = we have

tenéis = you (plural) have

tienen = they have

Ser = to be

soy = I am

eres = you are

es = he is

es = she is

somos = we are

sois = you (plural) are

son = they are

Possessive pronouns - my

Mi (singular noun)

Mis (plural noun)

Present tense -ar regular verbs e.g estudiar

Estudio

Estudias

Estudia

Estudiamos

Estudian

Present tense -ir regular verbs e.g. vivir

Vivo

Vives

Vive

Vivimos

Viven

Negatives :

No + verb = not/ don't

Nunca + verb = never

Opinions :

Me gusta = I like

Me encanta = I love

No me gusta = I don't like

Odio = I hate

Pienso que = I think that

Creo que = I believe that

Modal verbs :

Puedo = I can

Se puede/ podemos = we can

Debo = I must

Se debe/ debemos = we must

Connectives and intensifiers :

y = and

pero = but

sin embargo = however

muy = very

bastante = quite

un poco = a little bit

con = with

porque = because

Near future tense

Voy a

Va a + infinitive verb

Vamos a

Van a

Pronouns :

Yo = I
Tú = you
Él/Ella = he/she
Nosotros = we
Vosotros = you plural
Ellos/Ellas = they (m/f)

Adjectives and adjectival agreement:

divertido = fun
hablador = talkative
simpático = kind
aburrido = boring
gracioso = funny
tímido = shy
egoísta = selfish
perezoso = lazy
interesante= interesting
útil = useful
facíl = easy
difícil = difficult
antipático = unfriendly
estricto = strict
grande = big
pequeño = small
paciente = patient
justo = fair
entusiasta = enthusiastic

Adjectives go after the noun they are describing.
Adjectives have to agree in gender and number with the noun they are describing.
If an adjective ends in 'o', change it to 'a' to make it feminine. If it ends in anything else, leave it the same for masculine and feminine, apart from 'hablador' where you add an 'a' to the end to make it feminine.
When the adjective ends in a vowel, add an 's' to make it plural. When it ends in a consonant, add an 'es' to make it plural.

azul = blue verde= green

negro = black amarillo = yellow

gris = grey rosa = pink

rojo = red blanco = white

naranja = orange

marrón = brown

Colours go after the noun they are describing.

Colours need to agree in gender and number with the noun. Change the 'o' ending to 'a' to make it feminine, add an 's' to make it plural.

If the colour doesn't end in 'o' it stays the same for feminine.

Azul, gris and marron add 'es' for plural.

Key verbs:

Estudiar = to study
Vivir = to live
Trabajar = to work
Ir = to go
Hacer = to do
Escuchar = to listen
Comer = to eat
Hay = there is
No hay = there is not
Es = it is
No es = it is not
Me gustaría = I would like

Reflexive verbs:

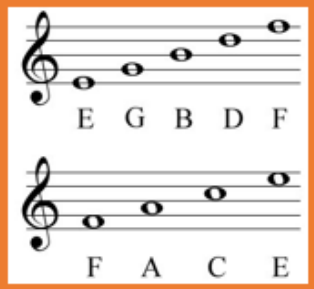
Me llevo bien con
= I get on well with
No me llevo bien con
= I don't get on well with
Me despierto = I wake up
Me levanto = I get up
Me lavo = I have a wash
Me lavo los dientes = I brush my teeth
Me visto = I get dressed
Me acuesto = I go to bed

MUSICAL ELEMENTS

Pitch - the highness or lowness of a sound.
Tempo - the speed of a sound or piece of music.
Dynamics - the volume of a sound or piece of music.
Duration - the length of a sound.
Texture - how layers of sound within a piece of music interact.
Timbre - the unique sound or tone quality of different instruments voices or sounds.
Articulation - how individual notes or sounds are played.
Silence - the opposite or absence of sound, no sound.

NOTATION

How Music is Written
Staff notation: music written on a stave (5 lines and spaces).
Graphic scores are a way of reading and writing music. Instead of using music notes, graphic scores use images, signs and symbols.

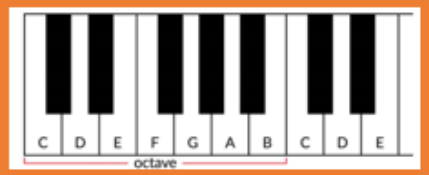


Interval the space between two notes
Semitone the smallest interval found between two notes in a western scale

 # = sharp = rises the note by one semitone i.e. C#
b = flat = lowers the note by one semitone i.e. Cb

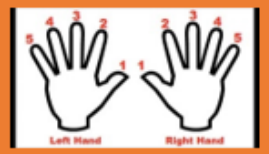
KEYBOARD

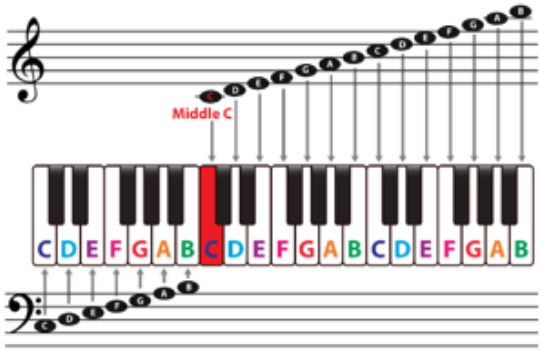
A keyboard is laid out with white and black keys. C is to the left of the two black keys. Middle C is normally in the centre of a keyboard.



Treble clef high pitch
Bass clef low pitch

Left hand for accompaniment/backing
Right hand for melody





RHYTHM

Pulse - a special type of beat that is regular. It's the heartbeat of a piece of music and similar to a ticking clock.
Metre or time signature - the amount and type of beats in a bar e.g. 4/4
Polyrhythm - two or more different rhythms played at the same time
Ostinato - a musical pattern that repeats
Accents - an emphasis placed on a note
Stepwise movement - moving to the next note in the scale either up or down
Call and response a musical conversation

TONALITY – MAJOR & MINOR

Scale - an organised sequence of notes. Scales can ***ascend*** (go up) or ***descend*** (go down)
Major tonality - the use of major scales and chords in a piece of music, generally creating a happy, bright, and positive mood
Minor - the use of minor scales and chords in a piece of music, generally creating sadder, darker or more serious mood
Tonic - the first note of a scale
Root note - the first note of a chord or scale
Chord - typically three or more notes played at the same time
Melody - the tune in a piece of music

ORCHESTRA

NOTE VALUES

Note Name	Note Symbol	Note Value
Semibreve	𝅝	4 beats
Minim	𝅗𝅥	2 beats
Crotchet	♩	1 beat
Quaver	♪	½ of a beat
Pair of Quavers	♫	2 x ½ beats = 1
Semiquaver	𝅘𝅥𝅯	¼ of a beat
Demisemiquaver	𝅘𝅥𝅰	1/8 of a beat

WORLD DRUMS

African drums – Djembe, talking drum, dundun, agogo bell
Samba drums – Surdo, apito, repenique, agogo bells

DYNAMICS

Term	Symbol	Definition
Fortississimo	*fff*	very, very loud
Fortissimo	*ff*	very loud
Forte	*f*	loud
Mezzo forte	*mf*	a little loud
Mezzo piano	*mp*	a little soft
Piano	*p*	soft
Pianissimo	*pp*	very soft
Pianississimo	*ppp*	very, very soft
Crescendo	<	gradually getting louder
Decrescendo	>	gradually getting softer
Sforzando	*sfz*	suddenly, with a sudden emphasis

Football

Offside Rule: A player is offside if the attacking player is behind the last defender before the ball is played.
Fouls: A foul is when a player breaks the rules in a way that is unfair or unsafe to others.
Free Kicks: A freekick is awarded to a team when the other team commits a foul.
Corner Kicks & Goal Kicks: These are awarded when the ball goes out of play.
Throw-ins: If the ball goes out at the sides, the other team throws it back in.
Passing: Players pass the ball to teammates to move forward and keep possession.
Dribbling: Running while controlling the ball to avoid defenders.
Shooting: Striking the ball towards the goal to try and score.
Tackling: Trying to take the ball from an opponent fairly.

Positions in Football

Goalkeeper: The player who stops the ball from going into the goal and leads the defence.
Defenders: Players who stop attacks and clear the ball away from danger.
Midfielders: They help both attack and defence, keeping control of the ball.
Forwards: The main goal scorers, who try to break through the defence.

Netball

Footwork Rule: After catching the ball, a player can only turn/pivot on their landing foot and cannot take extra steps.
Obstruction: Defenders must stay at least 3 feet/1 meter away from the player holding the ball.
Contact: Players cannot make any form of contact with each other.
Passing: Different types of throws: chest passes, bounce passes, and overhead passes help move the ball.
Pivoting: Turning on one foot to be able to see all around and pass the ball.
Defending: Sticking close to opponents, blocking shots, and intercepting passes.
Dodging: Quick movements to get away from defenders and find space.

Positions in Netball

Goal Shooter (GS): Scores goals and stays in the shooting area.
Goal Attack (GA): Helps with attacking and shooting.
Wing Attack (WA): Passes the ball to teammates in the shooting area.
Centre (C): Moves all over the court, linking attack and defence.
Wing Defence (WD): Marks the WA and tries to stop attacking moves.
Goal Defence (GD): Marks the GA and helps defend the shooting area.
Goalkeeper (GK): Stops the GS from scoring and protects the goal.

Rugby & Touch Rugby

Try (5 points): A player scores by placing the ball on the ground in the other team's scoring area
Try in Touch Rugby (2 points): The ball must be grounded in the same way but is only worth 2 points
Passing: The ball can only be passed backwards—never forward.
Tackling: In full-contact rugby, tackles must be below the shoulders. High tackles lead to penalties. In touch rugby, players must use two hands to tag an opponent on the hips with 2 hands.
Rucking: A ruck happens when players compete for the ball on the ground after a tackle.
Passing Types: Players use sideways (lateral) passes and spin passes to move the ball.
Evasion of tackles: Quick movements like sidesteps and swerves help players dodge defenders.
Defensive Line Speed: Defenders rush forward while staying in position to stop the attack.
Offload: Passing the ball while being tackled to keep the play going.
Knock-On: Accidentally losing control and moving the ball forward (this stops play).

Hockey

Hockey Stick: Players can only use their stick to play—no feet or hands allowed (except goalkeepers). You hold the stick with the left hand at the top and the right-hand lower down for better control and can only use the flat side
Scoring: A goal only counts if the ball is hit from inside the shooting circle.
Offside Rule: Unlike football, there is no offside in hockey.
Free Hits: If a foul happens, the other team gets a free pass or the option to dribble from where the foul occurred.
Dribbling: Moving with the ball while keeping control of the ball on the stick
Passing: Using push passes (short and controlled) to move the ball.
Push Pass: A short, controlled pass used to move the ball quickly.
Tackling: Defensive moves like block tackling to stop opponents.

Positions in Hockey

Defenders: Stop attacks and clear the ball away from danger.
Midfielders: Help both attack and defence, keeping possession.
Forwards: The main goal scorers, creating chances to score.

Athletics

Events in Athletics

Sprints (100m, 200m, 400m): Fast races where speed and power are super important.
Middle Distance (800m, 1500m): These races need a mix of endurance and smart pacing.
Long Distance (3000m, 5000m): Runners need strong stamina, focus, and smart tactics.
Relays (4x100m, 4x400m): Team races where runners pass a baton to each other.
Long Jump: Jumping as far as possible using a powerful take-off.
Shot Put: Throwing a heavy ball far using strength and good technique.
Javelin: Throwing a long spear-shaped object as far as possible.

Key Techniques

Sprint Starts: Using a crouched position to push off fast at the beginning of a race.
Jumping Form: Using the right angles and momentum to get the best take-off.
Throwing Techniques: Twisting the body to throw further with more power.
Pacing in Long-Distance Races: Running smartly to finish strong.
Baton Exchange in Relays: Timing and teamwork to pass the baton smoothly.

Striking & Fielding

Striking: Hitting the ball with a bat to score runs or points.
Fielding: Stopping, catching, and throwing the ball to stop the other team from scoring.
Bowling/Pitching: Delivering the ball to the batter with speed and accuracy.
Scoring: Runs are earned by running between or around bases or reaching the opposite crease after hitting the ball.
Outs: Players can be caught out, run out, or bowled out, depending on the rules of the game.

Key Techniques

Fielding Positions: Players spread out in smart spots to stop the batter from scoring.
Batting Grip & Stance: Holding the bat correctly and standing ready to swing.
Catching: Using safe hand techniques to hold onto the ball properly.
Throwing: Making strong, accurate throws to teammates or bases.
Stopping & Retrieval: Fielders reacting quickly to grab the ball and prevent runs.

Fitness – Components of Fitness

Cardiovascular Endurance: How well the heart and lungs keep the body going during long activities.
Example Sports: Running, swimming, cycling.
Muscular Strength: How much force muscles can produce.
Example Sports: Weightlifting, rugby, gymnastics.
Muscular Endurance: How long muscles can keep working without getting tired.
Example Sports: Rowing, boxing, circuit training.
Flexibility: How much joints can move in different directions.
Example Sports: Gymnastics, dance, martial arts.
Speed: Moving quickly over a short distance.
Example Sports: Sprinting, throwing events, team sports.
Agility: Changing direction fast and easily.
Example Sports: Basketball, netball (dodging opponents).
Coordination: Using different body parts together smoothly.
Example Sports: Tennis, badminton (hand-eye coordination), football (foot-hand coordination).
Balance: Staying steady while moving or standing still.
Example Sports: Gymnastics, yoga.
Power: Using strength and speed together for strong movements.
Example Sports: Throwing and jumping events.
Reaction Time: Responding quickly to what happens.
Example Sports: Sprint starts, goalkeeping.

Gymnastics

Control & Balance: Staying steady and stable during movements.
Flexibility: Helping the body move fully and smoothly.
Coordination: Making movements flow from one skill to the next.
Posture & Positioning: Keeping the body in the right shape to perform better.
Routine Composition: Planning the order of skills for a performance.
Routine: A sequence of gymnastics moves put together for a routine.
Linking Moves: Ways to link gymnastic moves together such as leaps, travel, turns and jumps

Key Gymnastics Skills

Forward Roll: Rolling from standing to the ground in a smooth motion.
Backward Roll: Rolling backwards using neck and core strength.
Cartwheel: Spinning sideways using hands and feet for balance.
Handstand: Holding the body upside down on the hands using arm and core strength.
Bridge: Arching the back to improve flexibility, especially in the spine and shoulders.

Swimming

Swimming Strokes

Freestyle (Front Crawl)
Technique: Moving arms one at a time, flutter kicking, and breathing to the side.
Advantages: The fastest stroke and great for long distances.
Backstroke
Technique: Floating on the back, moving arms one at a time, with flutter kicking.
Advantages: Easier breathing and good for endurance.
Breaststroke
Technique: Pulling arms together, kicking like a frog, with the head staying above water.
Advantages: A steady stroke, great for beginners and lifesaving.
Key Swimming Skills

Key Skills

Floating: Keeping the body on top of the water without sinking.
Breathing Control: Timing breaths to swim smoothly and efficiently.
Streamlining: Keeping the body straight to move through the water faster.
Treading Water: Using slow movements to stay afloat without swimming forward.

Dance

Action: The movements dancers perform, like jumps, turns, and gestures.
Space: How dancers move around the stage, including direction, levels, and pathways.
Dynamics: The way movements feel—fast, slow, sharp, or smooth.
Relationships: How dancers interact, like copying each other (mirroring) or moving at different times (canon).
Facial Expression: Showing emotions through movement and expressions.
Musicality: Matching movements to the rhythm and beat of the music.
Energy: Changing movement intensity to match the mood of the dance.

Key Dance Terms

Canon: When dancers repeat the same moves but at different times.
Unison: When all dancers perform the same moves together.
Formations: How dancers arrange themselves in creative ways on stage.
Matching: Moving in the same as your partner
Mirroring: Moving with your partner as if looking in a mirror so opposites
Choreography: The planned sequence of movements in a dance performance.

Orienteering

Navigation Basics

Navigation: Using a map and compass to find the right locations.
Route Planning: Choosing the best path to follow between checkpoints.
Decision Making: Picking the safest and quickest way through different areas.
Teamwork & Communication: Working together and sharing information to navigate well.
Map Reading Skills:
Understanding Symbols & Contours: Learning what different map symbols mean, like hills, rivers, and paths.
Scale & Distance: Using the map scale to estimate how far places are.
Orienting the Map: Turning the map to match real-world directions.
Navigation Techniques
Pacing & Timing: Counting footsteps to measure distances.
Identifying Checkpoints: Finding important locations marked on the map.
Communication in Teams: Talking and sharing observations to improve navigation.
Confidence in Decision-Making: Trusting skills to choose the right path and avoid mistakes.
Control Point: A marked location that must be found during a route.

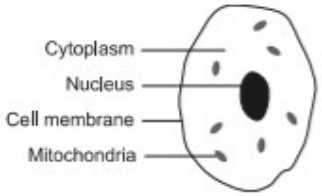
Badminton

Badminton Basics

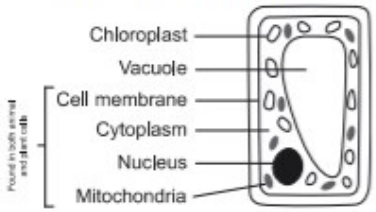
Serving: The shuttle must be hit below waist height and cross the service line.
Faults: Mistakes include hitting the shuttle out, not getting it over the net, or touching the net with the racket.
Let: If the serve is misjudged or the rally is interrupted, the point is replayed.
Grip: Players use forehand and backhand grips to control shots.
Shuttlecock: The light, feathered projectile used in badminton.
Rally: The back-and-forth exchange of shots between players.
Key Badminton Shots
Serving: Players use different serves, like low serve, flick serve, and high serve.
Smash: A strong, downward shot to end a rally.
Drop Shot: A soft shot that lands near the net to trick opponents.
Overhead Clear Shot: A high shot that pushes opponents to the back of the court.
Net Shot: A gentle shot played close to the net.

Topic B1.1 Cells

1. All living things are made of cells
2. **Unicellular** organisms are made of only one cell e.g. bacteria
3. **Multicellular** organisms are made of many cells e.g. humans
4. Animal and plant cells contain a **nucleus**, **cell membrane**, **mitochondria** and **cytoplasm**



5. Only plant cells contain a cell wall, vacuole, and chloroplasts



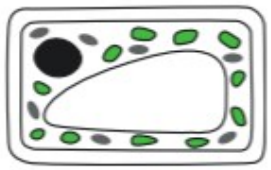
6. The **nucleus** controls the cells activities because it contains DNA
7. The **cell membrane** controls what enters and leaves the cell
8. The **cytoplasm** is a jelly-like substance where reactions happen
9. The **cell wall** surrounds plant cells and provides strength and support
10. The **chloroplasts** are where photosynthesis take place to make food (glucose) for the plant and contain chlorophyll to absorb sunlight
11. The **vacuole** contains a liquid that stores substances for the cell and keeps it rigid

Specialised Cells

12. Specialised cells have different structures that let them carry out their function
13. **Sperm cells:** Their function is to swim to the egg cell for fertilisation. The structure that helps them to do this is a tail for swimming

14. **Neurons** (nerve cells): Their function is to send messages to control the body. The structure that helps them to do this is a long axon and connections at the ends

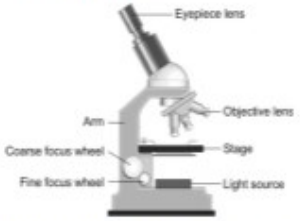
15. **Leaf cells**: Their function is to take in lots of sunlight (for photosynthesis to make food). Their structure helps them to do this as they have lots of chloroplasts



16. **Root hair cells:** Their function is to take in lots of water. To help them to do this, their structure consists of a large surface area to take water in

Microscopes

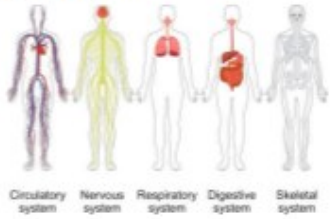
17. A microscope is used to make something small appear much larger
18. The parts of a microscope are: eye piece lens, stage, objective lenses, handle/arm, light/mirror, coarse focusing wheel, fine focusing wheel



19. To calculate the magnification of an image seen under the microscope, this equation can be used:
Magnification = eyepiece magnification x objective lens magnification

Cell Organisation

20. A group of the same cells working together is called a **tissue**
21. A group of tissues working together for the same function is called an **organ**
22. A group of organs working together for the same function is called an **organ system**
23. There are many organ systems in the human body including: respiratory, excretory, nervous, muscular, circulatory, skeletal and digestive system.



Topic B1.2: Reproduction

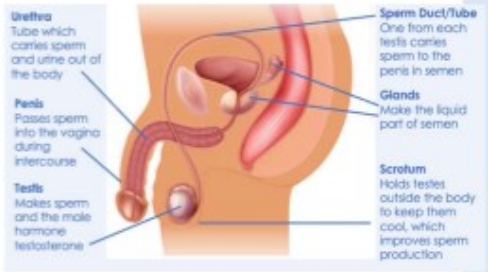
1. Reproduction can be sexual or asexual.
2. **Asexual reproduction** is when an organism makes an exact copy of itself to make a new individual. eg: unicellular organisms, bacteria, fungi and some plants.
3. **Sexual reproduction** is when sex cells (**gametes**) from two individuals fuse to form a new individual. ie: sperm fuses with an egg

Puberty

4. The body goes through changes during **puberty** or adolescence (e.g. body and pubic hair grow). This prepares the body for sexual maturity and the production of gametes.
5. These changes are controlled by sex **hormones**.

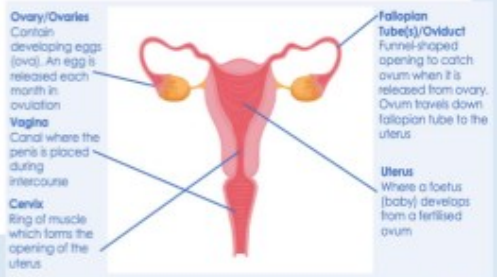
Male Reproductive System

6. The male reproductive system develops during puberty.



Female Reproductive System

7. The female reproductive system develops during puberty



Menstrual Cycle

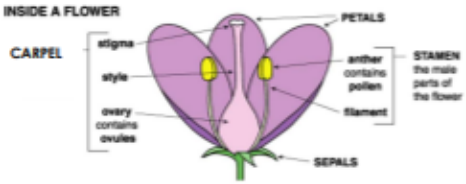
8. The female reproductive cycle is called the **menstrual cycle**, which prepares a woman's body for pregnancy.
9. On average, one menstrual cycle lasts 28 days.
10. **Ovulation** occurs on day 14 and is when the egg is released.
11. The uterus lining builds up to allow the embryo to develop.
12. If fertilisation does not take place then the uterus lining is shed between days 1-5. This is called **menstruation**

Fertilisation and Gestation

13. **Fertilisation** is when the gametes (sperm and egg cells) meet and the nuclei fuse to make a new cell.
14. After fertilisation, the cell multiplies to make an **embryo**.
15. **Implantation** is when the embryo embeds into the uterus wall. The embryo grows and develops into a **foetus** until it is ready to be born. This is called **gestation**.
16. The **placenta** is where the exchange of substances between the mother and embryo occurs.
17. The **umbilical cord** connects the foetus to the placenta.

Sexual Reproduction in Plants

18. In plants, the male gamete is the **pollen** grain.
19. Pollen is produced by the **anther**.
20. The female gamete is the **egg** found in the **ovule**. The ovule is in the ovary.



21. **Pollination** is the transfer of pollen from the anther of one plant to the stigma of another plant.
22. Pollination can be carried out by insects, animals or the wind.
23. Fertilisation is when the pollen and egg join and their nuclei fuse. Fertilisation happens in the **ovule**.
24. After fertilisation, the ovary develops into the fruit and the ovule develops into the seed.
25. The seed contains the embryo which will grow into a new plant. The process of a plant growing from a seed is called **germination**.
26. Germination requires water, oxygen and warmth.
27. **Seed dispersal** is needed so that the new plant grows far away from the parent plant so they don't compete for water and light.

Topic B1.3: Ecosystems

1. An **ecosystem** is the interaction of a community of organisms with the non-living parts of their habitat. *E.g. a rainforest ecosystem contains: gorillas, ants, nut trees, lots of water and lots of sunlight*
2. A **population** is a group of the same organism. *E.g. a group of gorillas*
3. A **community** is made of several different populations living in the same area that depend on each other for survival. *E.g.* populations of: gorillas, ants and nut trees

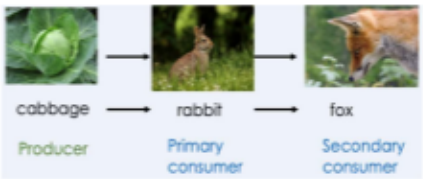
Sampling

4. Random sampling is used to estimate the size of a population in a habitat
5. **Quadrats** are placed randomly and used to count the number of individuals in a specific area

e.g. estimating the total number of daisies in a field

Food Chains and Webs

6. Feeding relationships within a community can be represented by **food chains** and **food webs**
7. The direction of the arrow in a food chain and food web shows the direction of **energy transfer**



8. **Producers** are plants that can make their own food (glucose) using sunlight in the process of photosynthesis
9. **Primary consumers** eat producers, **secondary consumers** eat primary consumers and **tertiary consumers** eat secondary consumers
10. **Predators** are consumers that eat other animals, called **prey**
11. In a **stable community** the numbers or predators and prey increase and decrease in cycles
12. If there is a change in one population then this affects other populations in the community. You can use a food web to predict what changes could happen

Abiotic and Biotic factors

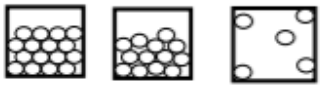
13. **Biotic factors** are **living** things that can affect a community
14. Examples of biotic factors are: food, disease and predators
15. **Abiotic** factors are **non-living** things that can affect a community
16. Examples of abiotic factors are: temperature, light, wind, amount of water

Competition

17. Animals often compete with each other for space, mates and food
18. Plants often compete with each other for space, water, minerals and light
19. The best competitors are most likely to survive.

Topic C1.1 Particles

1. All matter is made from tiny particles
2. The arrangement of particles affects the properties of the substance
3. The three states of matter can be represented by a simple model, in which the particles are represented by small circles

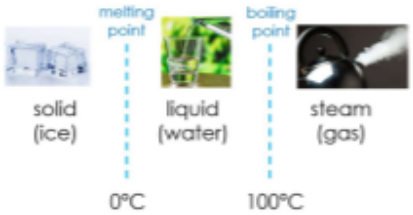


Solid liquid gas

4. Particles in a **solid** are arranged in a regular pattern, touch each other and vibrate on the spot
5. Particles in a **liquid** are arranged randomly, are touching and move freely
6. Particles in a **gas** are arranged randomly, do not touch and move freely
7. Some substances expand when heated. This is because when heated, particles have more energy. They vibrate more. The space between particles is bigger.

Changing State

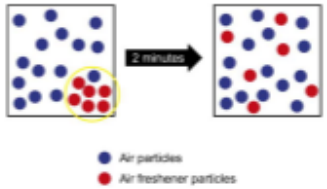
8. Changes of state involve the rearrangement of particles. The particles themselves do not change.
9. A substance **melts** when it changes from a solid to a liquid
10. When a solid melts, the particles gain **energy** from the surroundings, so they begin to **vibrate faster**. The particles move away from their places in the arrangement and start to move around more.
11. A substance **freezes** when it changes from a liquid to a solid
12. When a liquid starts to freeze, its particles move more slowly as they lose **energy** to the surroundings. The particles form a **regular arrangement** and vibrate on the spot.
13. Melting and freezing of a substance happens at a certain temperature called the **melting point**
14. A substance **boils** when it changes from a liquid to a gas
15. During boiling, a **liquid is heated.** The particles **gain energy.** They **move further apart.** This **forms a gas.**
16. A substance **condenses** when it changes from a gas to a liquid
17. During condensation, a **gas cools.** The particles **lose energy.** They **move closer together until they are touching**. This **forms a liquid**.
18. Boiling and condensing take place at the **boiling point.**
19. The **boiling point** is the temperature at which a liquid changes into a gas.
20. When boiling occurs, Bubbles **of the substance** rise up to the surface and escape into the air.



21. The **particles in a solid** can **vibrate in a fixed position** and cannot move from place to place because they do not have enough energy to overcome the forces that attract the particles towards each other

Diffusion

22. Diffusion is the movement of particles from a **high concentration** to a **low concentration**.



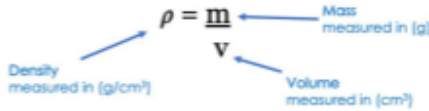
23. **Diffusion happens in liquids and gases** because particles are free to move
24. **Diffusion happens faster** when the particles in a liquid or gas are moving **faster after heating**

Gas Pressure

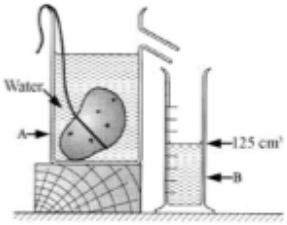
25. **Gas pressure** happens because of particles colliding with the walls of a container
26. Decreasing the size of the container increases the gas pressure as there will be more collisions.
27. Greater pressure compresses gas particles so they are closer together and have a smaller volume

Density and volume

28. Density is defined as the mass per unit volume of a substance.
29. Density = mass ÷ volume



30. If an object has an **irregular shape**, the volume can be measured using a **displacement can**, or **Eureka can**.
31. The **displaced** water in the cylinder occupies the same amount of space as the irregular object. **The volume of water in the graduated cylinder is equal to the volume of the object.**



Topic C1.2 Atoms, Elements & Compounds

1. All substances are composed of atoms
2. Elements are made from only **one type of atom**.

e.g. this diagram shows an element because it is made from only one type of atom.

3. There are about 100 different elements
4. An atom is the smallest part of an element that can exist
5. Elements have specific physical and chemical properties
6. **Physical properties** = state, appearance, smell, magnetic, etc.
7. **Chemical properties** = what it react with and how reactive it is

volume = length x width x height

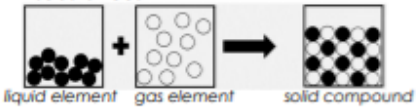
(cm^3) (cm) (cm) (cm)

Periodic Table

8. Elements are organised in the Periodic Table
9. The Periodic Table is organised into periods and groups
10. **Groups** are vertical columns
11. **Periods** are horizontal rows
12. Elements in a group have similar chemical properties
13. **Metals** are on the left hand side of the 'staircase' and **non-metals** are on the right hand side of the 'staircase'.

Compounds

14. Compounds are formed from elements by chemical reactions
15. Chemical reactions always involve the production of one or more new substances



16. A compound contains two or more elements chemically joined together in fixed proportions
17. A compound has different properties from the elements it's composed
18. Compounds can only be separated intc elements by chemical reactions
19. A **molecule** is two or more non-metal atoms chemically joined together – this can be an element (e.g. H_2) or a compound (e.g. H_2O)

Naming compounds

20. There are rules to follow when naming compounds:
    a. Usually the metal goes first and the non-metal goes second
    b. If a metal and a non-metal react, the name of the non-metal ends in **–ide**
    c. For some compounds, if there are a different number of atoms we add in '**mono**' for 1, '**di**' for 2 and '**tri**' for 3

If the compound names ends in **–ate** then it usually contains three elements, including a non-metal and oxygen

Chemical formulae

21. Each element is represented by a chemical symbol.

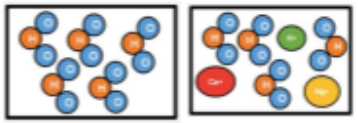
    e.g. Iron = Fe, oxygen = O, magnesium = Mg, gold = Au

22. The chemical formula of a molecule or compound tells you which elements and how many atoms of each are in one molecule
23. The small subscript number after an element symbol is the number of atoms of that element are in one molecule

    e.g. In HNO_3 there is 1 atom of hydrogen, 1 atom of nitrogen and 3 atoms of oxygen per molecule.

Topic C1.3: Mixtures

1. A **mixture** consists of two or more types of atoms or compounds not chemically combined together.
2. A **pure** substance is made of one type of atom or compound



Pure Water Impure water

Solutions

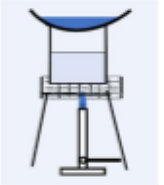
3. A **solution** is composed of a solute and a solvent.
4. A **solvent** is the substance a solute dissolves in.
5. A **solute** is the substance that dissolves in a solvent.
6. A **saturated solution** is a solution in which no more solute will dissolve.
7. An **unsaturated solution** is a solution in which solute will dissolve.
8. A substance is **soluble** if it will dissolve to form a solution.
9. A substance is **insoluble** if it will not dissolve to form a solution.

Melting and Boiling Points

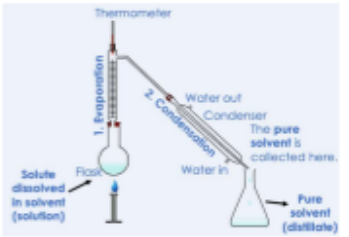
10. **Pure** substances melt and boil at specific temperatures
11. Melting points and boiling points can be used to identify pure substances or mixtures

Separating Mixtures

12. Mixtures can be separated by physical processes such as filtration, crystallisation, simple distillation, fractional distillation and chromatography
13. In **distillation**, a solution can be separated by evaporating the solvent.
14. In **crystallisation**, the liquid is evaporated to leave behind solid crystals



15. In **fractional distillation**, the different fractions in a mixture can be separated due to their different boiling points



16. **Filtration** separates a solid from a liquid. The filtrate is the liquid

17. **Chromatography** separates soluble substances that travel at different speeds through a stationary phase

18. Rf = distance moved by substance / distance moved by solvent

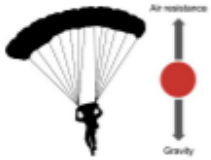
19. Rf values are used to identify a substance in a particular solvent

Topic P1.1: Forces

1. A force is an interaction (e.g. a push, pull or twist) between 2 objects.
2. A force can change an object's shape, speed or direction.
3. Forces are either contact or non-contact
4. **Contact forces** need the objects to be touching. Eg: drag forces, friction, air resistance, tension and normal contact forces.

5. **Non-contact forces** can act at a distance. They do not need the objects to be touching. Eg: gravity, electrostatic attraction and magnetism.

6. Forces acting on one object are represented by **free-body force** diagrams using arrows to show the direction and size



Balanced and Unbalanced forces

7. Forces are **balanced** *only* when forces acting on the same object are equal in size but opposite in direction.

8. An object's motion or shape does not change if the forces are balanced.
9. **Unbalanced** forces change an object's shape, speed or direction.

10. The unit of force is **Newton (N).**
11. The **resultant force** on an object is the net force or the overall effect of all the forces acting on an object.
12. When forces are balanced the resultant force is 0N.

Resultant force = 30 N - 30 N = **0 N**

13. When the forces are unbalanced the resultant force is *not* 0N.

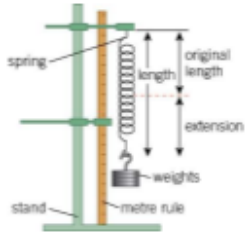
Resultant force = 50 N - 30 N = **20 N right**

Interaction Pairs

14. Forces *always* act in interaction pairs.
15. Interaction pairs act on 2 different objects.
16. If A exerts a force on B, then B exerts a force on A. The forces are equal in size but opposite in direction.

Deformation

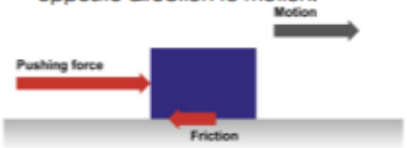
17. Changing the shape of an object can be called deformation.
18. The **extension** of a spring is an example of deformation.
19. The extension of spring can be measured when different weights are added.
20. The extension is larger when more weight is added.



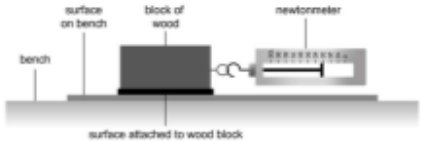
21. If too much force is added, then a spring does not return to its original shape. The spring has reached its **elastic limit.**

Drag Forces and friction

22. Drag forces occur in **fluids** (liquids and gases).
23. Drag forces include water resistance and air resistance.
24. Friction occurs between solids.
25. Drag forces and friction are caused by interaction of 2 objects moving or trying to move over one another.
26. Drag forces and friction act in the opposite direction to motion.



27. To move a block along a surface, the forces need to be unbalanced. The pulling force needs to be just bigger than friction.



28. Rougher surfaces generate more friction than smoother surfaces. Friction is reduced by adding a **lubricant.**

Topic P1.2: Space

1. Gravitational forces act *on* and *between all* objects.
2. The gravitational field strength decreases with distance and increases with mass.

Weight and mass

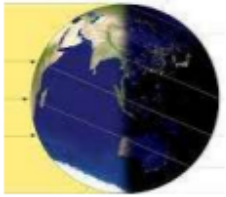
3. **Mass** is the amount of matter contained in an object.
4. The unit of mass is kilograms, kg.
5. Mass stays the same everywhere.
6. **Weight** is the force of gravity acting on a mass.
7. The unit of weight is Newtons, N.
8. Weight (N) = mass (kg) x gravitational field strength (N/kg)

Space and Gravity

9. Gravity is the force that holds objects in **orbit.**
10. An orbit is the curved path of an object in space around another object in space.
11. There are many billions of **galaxies** in the universe.
12. Our solar system is a tiny part of one galaxy.
13. The Universe is so large that distances are described in lightyears
    A **lightyear** is the **distance** that **light** can travel in 1 year

The Solar System

14. Our solar system contains lots of objects including the sun, planets, satellites, asteroid belts, and comets.
15. The **sun** is the star at the centre of our solar system.
16. The **planets** orbit the sun.
17. The planets are in the order: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune.
18. The **satellites** orbit planets, asteroid belts and comets.
19. A natural satellite is a moon which orbits a planet.
20. Artificial satellites include those that orbit the Earth for communication.
21. It takes the Earth **365 days** to orbit the sun once. This is a **year**.
22. Planets rotate on their axis which produces day and night.
23. The Earth rotates once every 24 hours.
24. The seasons are caused because the Earth is tilted on an axis at 23.5°.



25. An **eclipse** is caused when an object in space obscures the light from another object in space.
26. A **solar eclipse** happens when light from the sun is blocked from reaching parts of Earth. This happens when the **moon comes between** the sun and the Earth.
27. A **lunar eclipse** happens when light from the Sun is blocked from reaching the moon by the Earth when the **Earth comes between** the moon and the sun.

Topic P1.3: Energy

1. Energy is measured in **joules** (symbol J).
2. One **kilojoule**, 1 kJ = 1000 J (one thousand joules)
3. One **megajoule**, 1MJ = 1000 kJ = 1,000,000J (one million joules)

Energy Stores

4. Energy can be stored in different ways, including:

- Moving things have a **kinetic** energy store
- High up things have a **gravitational potential** energy store
- Stretched, twisted or bent things have an **elastic potential** energy store
- Hot things have a **thermal** energy store
- Certain chemicals, like fuels or batteries, have a **chemical** store

Energy Transfers

5. Energy can be **shifted** from one store to another by physical processes (like forces or electric currents).
6. When energy shifts from store to store, useful work may be done (like speeding things up or moving things from place to place).
7. Energy can be transferred a) **electrically**, b) **by heating**, c) **mechanically**, d) **by radiation**

Energy in food

8. Different tasks in daily life require different amounts of energy.
9. Food energy content is often measured in **calories** instead of joules.
10. 1 food calorie is approximately 4 200J.
11. Different foods contain different amounts of energy – **food labels** can tell us how much.

Wasted energy

12. A **system** is just a group of one or more objects.
13. When energy is transferred, the total amount of energy in a system always stays the same.
14. **Energy is always conserved and cannot be created or destroyed**. This is the law of conservation of energy.
15. Some energy gets spread out or "**dissipated**" whenever a process transfers energy.
16. When energy becomes dissipated, it is **not useful** and so is wasted.

Energy efficiency

17. We can calculate the amount of energy wasted by subtracting the energy usefully shifted from the total amount of energy at the start of a process.
18. The amount of energy wasted is often represented as the fraction (Useful energy output) / (Total energy input) which is called the efficiency.
19. Efficiency is often calculated as a **percentage**.
20. Wasted energy can be illustrated using a **Sankey diagram**.

Heat, temperature and thermal energy

21. **Heat** is the name we give for thermal energy shifting from one store to another. How quickly it shifts is measured in watts (W).
22. **Temperature** tells us how hot or cold something is and is usually measured in degrees Celsius (°C)
23. **Thermal energy** is the amount of energy stored in an object because of the movement of its particles. Like all other energy stores, it is measured in joules (J).
24. Heat will flow naturally from **hot objects to cold objects**.
25. The rate of heat flow is faster the bigger the difference in temperature between the objects

Temperature and particles

26. Particles in a solid **vibrate more** when they are heated.
27. Particles in a liquid **move faster** when heated.
28. Particles in a gas **move faster** when heated.
29. The increased vibration or speed of the particles makes the **particles take up more space**.
30. Solids, liquids or gases will **expand when heated** because their particles are taking up more space.

Conductors and insulators

31. **Thermal conductors** are materials that allow heat to flow through them easily.
32. **Thermal insulators** are materials that do not allow heat to flow through them easily
33. Metals tend to be good conductors.
34. Non-metals tend to be good insulators.

Types of Variable

Independent – the variable that is **changed**

Dependent – the variable that is **measured**

Control – the variable that stays the **same**

Types of Data

Categoric – values that are labels e.g. type of plant

Continuous – values that are numbers e.g. temperature

Tables

Units **only** go in headings

Time (s)	Vol. gas (cm^3)

Types of Error

Systematic – a problem with the method or equipment used. E.g. using a beaker to measure the volume of a liquid instead of a measuring cylinder.

The effect cannot be reduced by taking repeat readings.

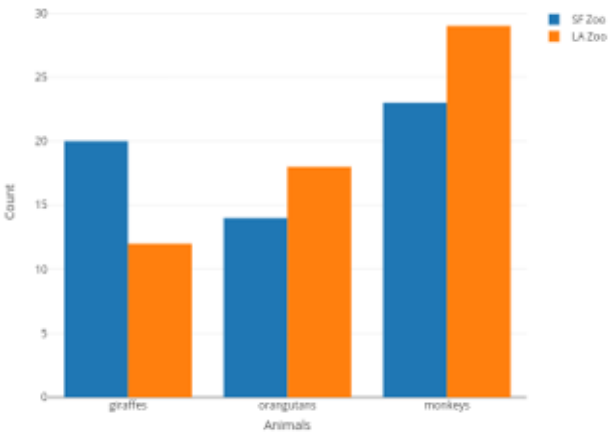
Random – whenever something is measured a random error is made. E.g measuring with a ruler.

The effect can be reduced by taking repeat readings.

Zero – caused by a piece of equipment not reading zero when it should. E.g. a balance. Either reset the piece of equipment or deduct the false reading from all measurements.

Bar Chart

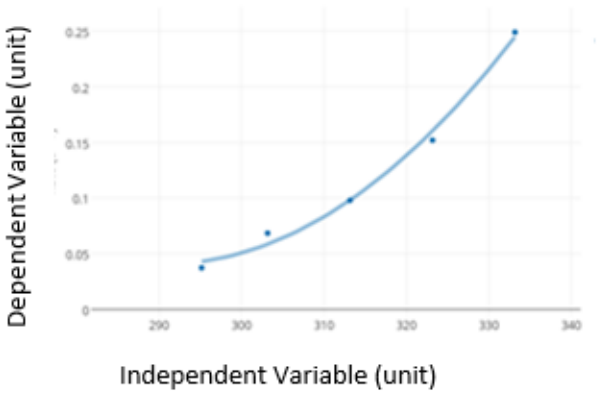
Type of graph plotted for one piece of **categoric** data and one piece of **continuous** data



Line Graph

Type of graph plotted for two pieces of **continuous** data

Has a **line of best fit**. This may be a **straight line** or a **curve** (not join the dots)



Key words

Accurate – close to the true value

Anomalous – a result that doesn't fit the pattern

Precise – small amount of spread around the mean

Resolution – the smallest reading on a piece of measuring equipment

Reproducible – if the same results are obtained by different people for the same investigation

Range – the biggest and smallest values of the independent or dependent variable e.g. 0-10 N

Volume – amount of a liquid

STEAM

What is STEAM?

STEAM is a part of our curriculum at Highdown that stands out. Unlike other lessons, in STEAM, we use what we are learning from lots of different subjects to approach and undertake different projects that seek to develop vital **skills** that can't be pinned down to just one subject.

STEAM stands for Science, Technology, Engineering, Art and Maths and so we take some of the **knowledge** we gain from these subjects from each of these areas and apply them in STEAM. The following doesn't act as a **knowledge** organiser, but more of a **skills** organiser.

What are our core STEAM skills?

We have four core skills in STEAM: Problem Solving, Teamwork, Staying Positive, and Creativity.

These are four elements of the Skills Builder Universal Framework, a national leader in STE(A)M education.

To the right gives a short summary of these core skills, and on the next page is an outline of steps we will be using to mark our success over the year, and identify how we can make progress.

Problem Solving

What approaches can we take to go from identifying an issue, to having a tested and refined solution to that problem?

These approaches aid how we break down maths problems when they are tricky, or how we develop a design to meet a need in D&T.

Teamwork

How can we work with others well, sharing ideas, responsibilities and tasks to complete problems productively?

These skills support how we listen well to learn from our peers and how we communicate our ideas clearly when presenting ideas.

Staying Positive

When we feel a problem is tricky, or when we try something and it doesn't work, how can we use these experiences and feelings to our advantage?

Building resilience is vital throughout the curriculum: developing a mindset that rises to the challenge rather than shrinks away.

Creativity

What if there is not only one path that gets to the finish line? How can we use our imagination and our past experiences to inform the next steps we take?

Taking experiences from Art and Design will strengthen our problem solving in the sciences, and here, STEAM acts as a bridge.

STEAM Skills: Problem Solving	STEAM Skills: Teamwork	STEAM Skills: Staying Positive	STEAM Skills: Creativity
STEP 0 I complete tasks by following instructions	STEP 0 I work with others in a positive way	STEP 0 I can tell when I feel positive or negative	STEP 0 I imagine different situations
STEP 1 I complete tasks by finding someone to help if I need them	STEP 1 I work well with others by behaving appropriately	STEP 1 I can tell when others feel positive or negative	STEP 1 I imagine different situations and can say what I imagine
STEP 2 I complete tasks by explaining problems to someone for advice if I need to	STEP 2 I work well with others by being on time and reliable	STEP 2 I keep trying when something goes wrong	STEP 2 I imagine different situations and can bring them to life in different ways
STEP 3 I complete tasks by finding information I need myself	STEP 3 I work well with others by taking responsibility for completing my tasks	STEP 3 I keep trying and stay calm when something goes wrong	STEP 3 I generate ideas when I've been given a clear brief
STEP 4 I explore problems by creating different possible solutions	STEP 4 I work well with others by supporting them if I can do so	STEP 4 I keep trying when something goes wrong, and think about what happened	STEP 4 I generate ideas to improve something
STEP 5 I explore problems by thinking about the pros and cons of possible solutions	STEP 5 I work well with others by understanding + respecting diversity of others' cultures, beliefs and backgrounds	STEP 5 I keep trying when something goes wrong and help cheer others up	STEP 5 I generate ideas by combining different concepts
STEP 6 I explore complex problems by identifying when there are no simple technical solutions	STEP 6 I contribute to group decision making	STEP 6 I keep trying when something goes wrong and encourage others to keep trying too	STEP 6 I use creativity in the context of work
STEP 7 I explore complex problems by building my understanding through research	STEP 7 I contribute to group decision making, whilst recognising the value of others' ideas	STEP 7 I look for opportunities in difficult situations	STEP 7 I use creativity in the context of my wider life
STEP 8 I explore complex problems by analysing the causes and effects	STEP 8 I contribute to group decision making, encouraging others to contribute	STEP 8 I look for opportunities in difficult situations, and share these with others	STEP 8 I develop ideas by using mind mapping
STEP 9 I create solutions for complex problems by generating a range of options	STEP 9 I improve the team by not creating unhelpful conflicts	STEP 9 I look for opportunities in difficult situations, and adapt plans to use these opportunities	STEP 9 I develop ideas by asking myself questions
STEP 10 I create solutions for complex problems by evaluating the positive and negative effects of a range of options	STEP 10 I improve the team by resolving unhelpful conflicts	STEP 10 I look for opportunities in difficult situations, and create new plans to use these opportunities	STEP 10 I develop ideas by considering different perspectives

Highdown School and Sixth Form Centre

Year 7 Knowledge Organiser

2025-2026