



LANGUAGES / ART / DRAMA

MATHEMATICS / ENGLISH

LOWER SCHOOL



HIGHDOWN

Year 7

Knowledge Organiser

2026-2027

Name	
Mentor Group	

Subject	Teacher
Art	
D&T	
Drama	
English	
Ethics	
Geography	
History	
ICT	
Maths	
MFL	
Music	
PE	
Science	



THE HIGHDOWN APPROACH

TO MULTIPLE-CHOICE QUIZZING

OUR BELIEF: We learn more when we actively retrieve knowledge. Regular quizzing helps you remember more and achieve more.

WHY ARE MULTIPLE-CHOICE QUIZZES SO EFFECTIVE?



STRENGTHEN MEMORY
Each question is retrieval practice. The more you retrieve, the stronger your memory becomes.



IDENTIFY GAPS
Quizzes show you what you know well and what you need to focus on next.



EFFICIENT REVISION
You can test lots of knowledge in a short amount of time.



BUILD CONFIDENCE
Regular success builds confidence and reduces stress before assessments.



CORRECT MISCONCEPTIONS
Reviewing wrong answers helps you fix mistakes and avoid them in the future.

THE HIGHDOWN APPROACH

A simple cycle for powerful learning



LEARN
Use knowledge organisers, notes and lessons to build strong understanding.



RETRIEVE
Answer questions from memory. Make your brain work!



REVIEW
Check your answers. Understand the feedback and fix any gaps.



REPEAT
Return to difficult topics and quiz again. Repetition leads to retention.

WHAT MAKES IT A HIGHDOWN QUIZ?

- Regular, low-stakes quizzing in lessons.
- Built around knowledge organisers and the curriculum.
- Instant feedback used to close gaps.
- Helping every student improve, every day.

HOW CAN YOU USE THIS APPROACH?

1 PREPARE BEFORE THE QUIZ



- Review your knowledge organiser, notes or textbook.
- Focus on key facts, dates, vocabulary and concepts.
- Revise little and often.

EXAMPLE:
Spend 15 minutes each evening revising key terms and definitions.

2 TEST YOURSELF DURING REVISION



- Attempt questions without looking at your notes.
- Make your brain work to recall information.
- Treat every quiz as a learning opportunity.

EXAMPLE:
Complete a short quiz on the Rivers topic from memory.

3 REVIEW YOUR MISTAKES AFTER THE QUIZ



- Check every incorrect answer.
- Find out why the correct answer is right.
- Identify topics that need more revision.

EXAMPLE:
If you missed questions on river landforms, revisit that section of your notes.

4 IMPROVE BEFORE THE NEXT QUIZ



- Revisit weak topics.
- Complete another quiz.
- Track your improvement over time.

EXAMPLE:
Retest yourself in a few days to see how much you've remembered.

QUIZ-DAY STRATEGIES



READ CAREFULLY
Read the whole question and every answer option.



ELIMINATE
Cross out answers you know are incorrect.



LOOK FOR KEYWORDS
Watch for words such as:

HIGHEST BEST MAIN FIRST LAST ALWAYS NEVER



THINK BEFORE YOU GUESS
Reduce the options first, then make your best choice.

EXAMPLE QUESTION

Who was the first Tudor king?

☐ A Henry VIII

☒ B Henry VII

☐ C Edward VI

☐ D Richard III

Take your time, use the strategies and choose the best answer!

THE HIGHDOWN SUCCESS CYCLE

LEARN

RETRIEVE

REVIEW

REPEAT

SUCCEED

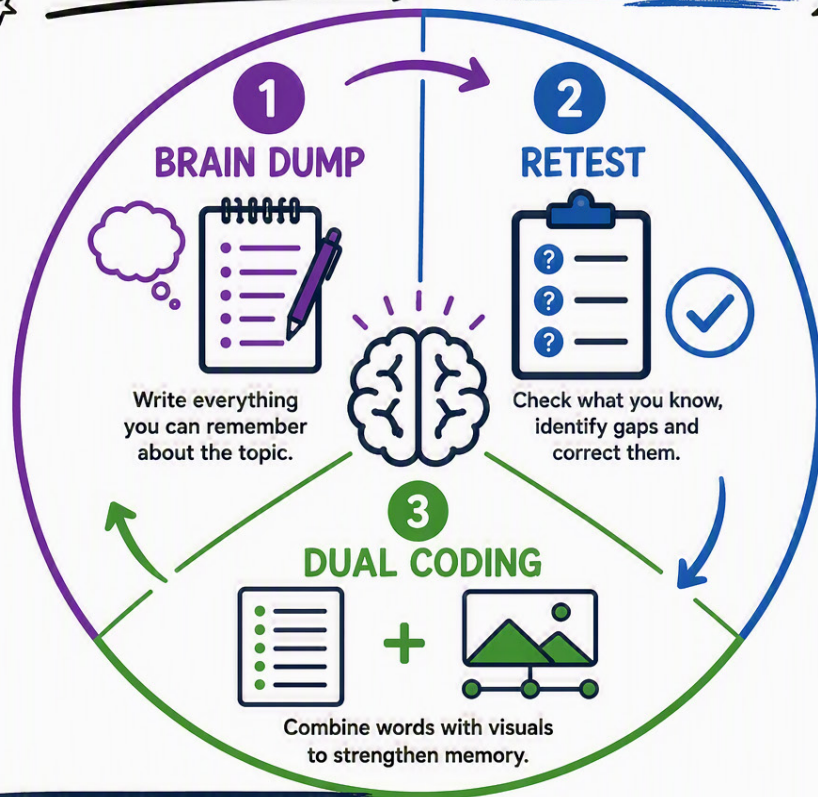
REMEMBER

Multiple-choice quizzes are not just a test of learning - they are a powerful way of learning!

HIGHDOWN SCHOOL | RETRIEVE • REVIEW • REPEAT • SUCCEED

A little practice often creates a lifetime of success.

RETRIEVAL OPTIONS



HOW CAN YOU USE THESE?

1. BRAIN DUMP
Pick a topic you've been learning. Write down everything you can remember about it – facts, dates, keywords, events, people, ideas – don't look at your notes!

Example:
Write everything you can remember about the causes of the First World War.

2. RETEST
Check your notes or textbook. Tick what you got right, add what you missed, and correct any mistakes. Focus on the gaps and brain dump again tomorrow!

Example:
Check your answers to find out what you forgot about the alliance system.

3. DUAL CODING
Turn your information into a visual (mind map, diagram, timeline, chart, sketch) and pair it with keywords or short notes. This helps your brain remember it better!

Example:
Create a timeline of events and add key words and images to help you remember.



RETRIEVE • SPACE IT • MIX IT UP • EXPLAIN IT • CHECK IT

Do a little bit often and keep testing yourself – your future self will thank you!



HIGHDOWN SCHOOL

THE HIGHDOWN APPROACH TO LOOK • COVER • WRITE • CHECK

A simple retrieval strategy for powerful learning

OUR BELIEF



At Highdown, we believe that learning becomes stronger when students actively retrieve information from memory.

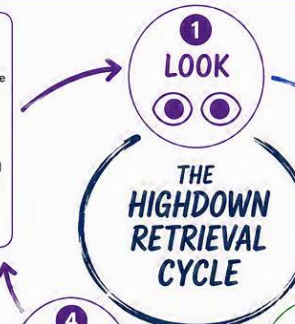
Look • Cover • Write • Check is a simple but powerful strategy that helps students remember more, identify gaps in knowledge and improve long-term retention.



Study the information carefully.
Focus on:

- Keywords
- Definitions
- Facts
- Dates
- Processes
- Subject vocabulary

EXAMPLE
Read a knowledge organiser about the causes of the First World War.
Goal: Understand exactly what you are trying to remember.



1 LOOK
Hide the information. Close the book, fold over the sheet or cover your notes.

2 COVER
Cover the list of causes completely.
Goal: Force your brain to recall information rather than copy it.

WHAT DOES A HIGHDOWN STUDENT DO?

- Uses knowledge organisers regularly
- Revisits learning from previous lessons
- Learns from mistakes
- Practices retrieval little and often
- Reviews and improves answers
- Takes responsibility for their own learning

WHY DOES IT WORK?

- STRENGTHENS MEMORY**
Every retrieval strengthens neural pathways.
- IDENTIFIES GAPS**
You quickly discover what you know and what needs further revision.
- BUILDS KNOWLEDGE**
Regular recall helps information move into long-term memory.
- BUILDS CONFIDENCE**
Success grows with repeated practice.
- IMPROVES ASSESSMENT PERFORMANCE**
Students remember more and retrieve information more easily.

Return to the information later.

- Try again tomorrow.
- Try again next week.
- Test yourself regularly.

Goal: Retrieval plus repetition creates long-term memory.

TOP TIPS FOR SUCCESS

- DO**
 - Keep revision sessions short and regular
 - Focus on key knowledge
 - Use subject vocabulary accurately
 - Check every mistake carefully
 - Repeat the process regularly
- DON'T**
 - Copy information while writing
 - Ignore mistakes
 - Give up when you forget something
 - Leave revision until the last minute

EXAMPLE

Topic: The Norman Conquest

LOOK Study the key events of 1066.

COVER Close your knowledge organiser.

WRITE Record everything you remember.

CHECK Compare with the original and correct errors.

REPEAT Try the same task again in a few days.

REMEMBER

The aim isn't to get everything right first time.

The aim is to make your memory stronger every time you practise.



Regular use of Look • Cover • Write • Check helps you learn more, remember more and achieve more.

Small steps. Big impact. Every day.



HIGHDOWN SCHOOL | RETRIEVE • REVIEW • REPEAT • SUCCEED

Small amounts of retrieval practice today create powerful learning tomorrow.



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 WHAT ARE IMPLIED LINES IN ART?	- 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. - 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 Paintbrush Scissors Printing roller Craft Knife/Scalpel Charcoal Acrylic Paint Water colour Blending stumps Tracing paper
KEY VOCAB+ Concepts	Harmonious colours, Complementary colours, cool colours, warm colours. Two dimensional, three dimensional, flat, historical, contemporary. Weight of line, Organic, Geometric
H/W's	MCQs, Contextual research page, Colour wheel

Sketch, draw, apply, create, mix, blend, pressure, mark make, cross hatch, gesture, layer, mix, brush, charcoal, chalk, graduate, measure.



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

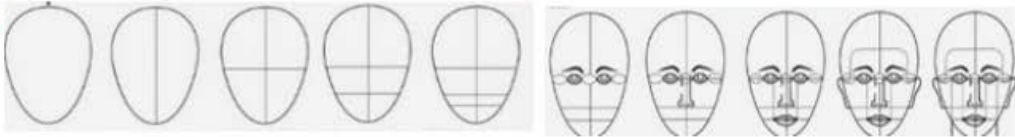
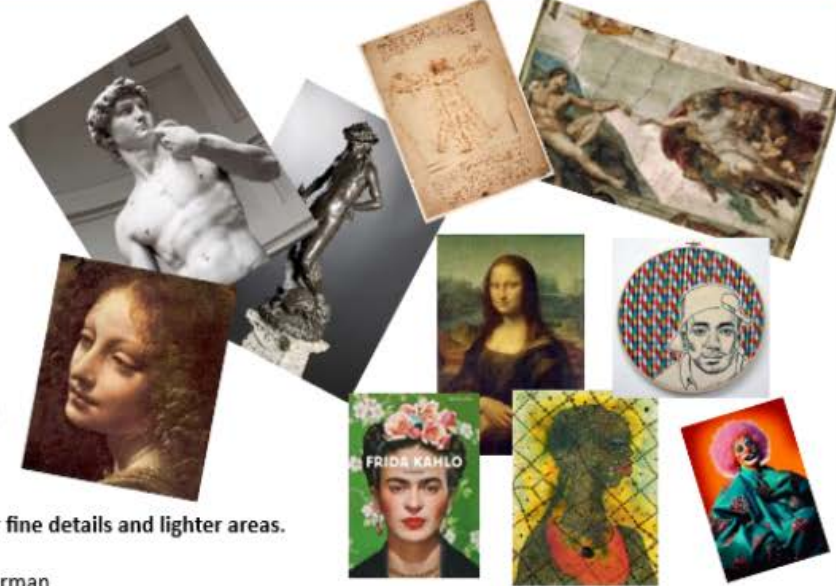
MCQs, Contextual research page, culture Jar

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 Cs

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, ideal for chilling foods.

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

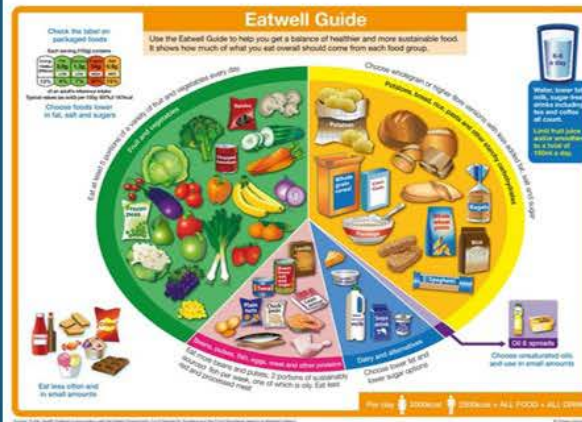
Cross Contamination - Clean and disinfect surfaces and equipment.

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

Always keep raw food separate from 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.



Dietary and energy needs for different ages – Target groups

Babies - Ideally **breast milk** for first six months. Start on a variety of solid food, as **weaning** and **teething** begin. High energy needs due to growth. No added salt or sugar. All nutrients essential; foods rich in iron and vitamin from six months.

Children (age 1-12) - Regular smaller meals snack and drinks. **High energy needs due to growth**. Reduced salt and sugar, gradually introduce the **Eatwell guide** between 2 – 5 years. Protein, calcium, vitamin D, iron, B group vitamins.

Teenagers - Follow the Eatwell guide. **Growth spurts** and activity levels are high so have **high energy needs**. Increased appetites mean larger portions.

Nutrients needed in increase amounts protein, calcium, vitamin D, vitamin C and iron.

Adults - **Lower energy needs**. Avoid foods high in sugar and fat to prevent weight gain. Calcium and vitamins D and C and iron.

Pregnancy - **Healthy balanced diet**, prepared safely, include plenty of watery drinks. Higher energy needs for last 3 months. **Folic acid**, protein, calcium, iron, vitamin C and vitamin D.

Older adults - Bodies slow down, **less need for energy**. Wear and tear on joints. Need plenty of watery drinks. (**hydration**).

Foods containing Key Nutrients

Protein: beans, pulses, fish, eggs and lean meat

Calcium: yogurt, cheese, milk, tofu

Iron: dark green veg, beans, fish, egg yolk, red meat

B group vitamins: bread, fish, broccoli, liver, milk, peas, rice

Folic acid: broccoli, spinach, chickpeas

Vitamin D: butter, eggs, milk, oily fish.

Fibre: Fruits and vegetables, wholegrain bread, pasta



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.  Julienne - cut into long thin strips, similar to matchsticks. Brunoise - food item is first julienned and then turned a quarter 	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 Yeast is a living, single-cell organism. Yeast releases carbon dioxide bubbles which causes dough to rise. Kneading Kneading dough stretches the gluten, creating the strong texture needed for bread. Gluten This is the major protein in grains and is proportionally highest in wheat. Gluten is what allows the flour of yeast-raised baking to swell and lighten, but this only happens if the gluten is first encouraged to stretch by kneading. 	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 your 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
Bench vice 	Holds your work securely on the table
Coping saw 	For cutting curves • Only hold the handle • Twist your wrist whilst cutting • Slow and steady pace – don't press too hard
Flat file 	To smooth your work For flat edges and convex curves
G clamp 	Holds the clamp in place whilst drilling
Half round file 	To smooth your work Flat on one side, curved on the other
Hand clamp 	To hold your work whilst drilling
Laser cutter 	Computer Aided Manufacture - Cuts materials accurately using a laser
Pillar drill 	For drilling holes • Work must be clamped • Wear goggles • Slow and steady

Name	Use
Rasp 	To start shaping your work
Safety goggles 	Must be worn when using machinery to protect your eyes
Sandpaper 	Comes in different grits Used to create a high-quality finish
Steel rule 	For marking out Starts at zero
Surform file 	For shaping your work Used for concave curves
Surform plane 	For shaping your work Used for flat surfaces and convex curves
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
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.

Wassily Kandinsky

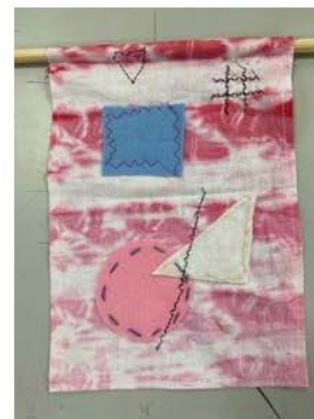
Wassily Kandinsky (1866–1944) was a Russian-born painter and art theorist, widely regarded as one of the pioneers of abstract art

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

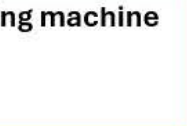
His compositions often feel energetic and in motion, with swirling lines and layered shapes. Kandinsky used circles, triangles, lines, and grids



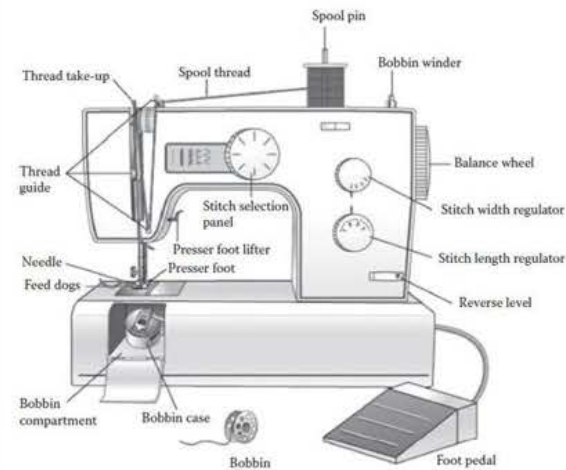
Techniques

- 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.

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

Equipment	Use
	To create the resist when doing tie dye – the band should be secured tightly to stop the dye getting underneath
	Paper scissors - For cutting paper only
	Fabric scissors – For cutting fabric only
	For securing materials together
	Used for sewing. The thread goes through the eye of the needle
	For flattening or pressing fabrics to remove creases. Also sets dye
	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



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.

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.

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 



Core Glossary CORE CONCEPTS

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: People who watch a performance

Devising: A collaborative process of creating original theatre from a stimulus

Improvisation – Spontaneous performance used to explore ideas

Structure: The way a play is organised, including the order of scenes, events, and how the story unfolds from beginning to end.

Blocking: Planned positioning and movement of actors on stage

Corpsing: Laughing or breaking character on stage.

Characterisation: how an actor creates and presents a character on stage using voice, movement, facial expressions, gestures, and personality traits.

Form – The type of drama (e.g. devised, scripted, physical theatre)

Genre – The category of the play (e.g. comedy, tragedy)

Style – The specific theatrical approach (e.g. naturalism, Brechtian, physical theatre)

Roles & Theatre Makers

Actor – Uses vocal and physical skills to communicate character

Character – A constructed role with motivations, status, and relationships

Playwright – Crafts narrative, dialogue and structure

Director – Interprets text and shapes performance through staging and actor guidance

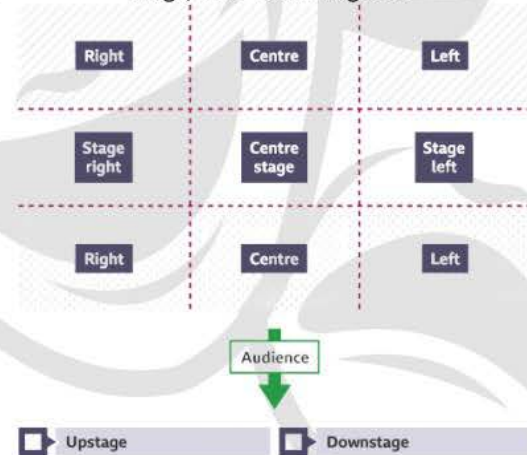


Year 7 Knowledge Organiser

Drama

Stage Directions

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



WHO? WHAT? WHERE?
WHY? WHEN?

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

Thought-track: When a character steps out of a scene to address the audience about how they are feeling

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

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.

BAYSDON VILLAGE

Process Drama – A type of drama where the focus is on exploring ideas and situations, not performing for an audience.

Role – The character you take on in the drama.

Teacher in Role (TiR) – When the teacher also takes part in the drama as a character.

Improvisation – Making up action and dialogue on the spot.
Forum Theatre – A scene is performed and then stopped so others can suggest and try different choices.

Mantle of the Expert – Students take on the role of experts solving a problem.



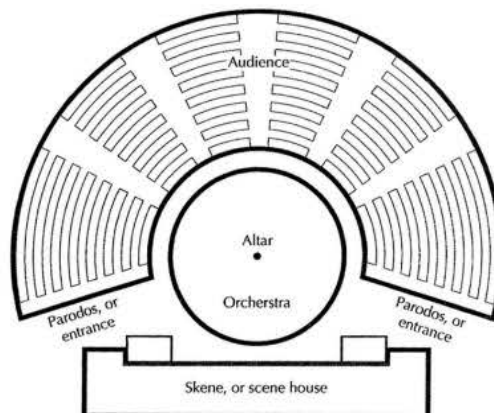
Greek Theatre

Amphitheatre	A large, open-air theatre where plays were performed. Built in a semi-circle.
Chorus	A group of performers who speak, sing, and move together to tell parts of the story.
Mask	Worn by actors to show character, emotion, and to help voices carry.
Tragedy	A serious play with a sad ending, often about death or suffering.
Comedy	A funny play that often makes fun of people or ideas.
Satyr Play	A silly, rude, and playful performance often shown after tragedies.
Orchestra	The circular space where the chorus performed.
Skene	The building behind the stage used as a backdrop or changing area.
Actor	A performer who plays a character (usually only 3 actors in Greek plays).
Myth	A traditional story about gods, heroes, or ancient beliefs.
Dionysus	The Greek god of theatre and festivals, honoured with performances.



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.

PAGE TO STAGE

UNDERSTANDING THE TEXT

Script - The written text of a play.

Character - The person in the story that an actor plays.

Dialogue - The words spoken between characters.

Line - A single piece of speech in the script.

Stage Direction - Instructions about movement or action (*usually in brackets or italics*).

BEGINNING CHARACTER WORK

Emotion - The feeling a character has (e.g. scared, excited).

Motivation - Why a character says or does something.

Relationship - How characters feel about each other.

Reaction - How a character responds to something happening.

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.

Proximity: The physical closeness between characters.

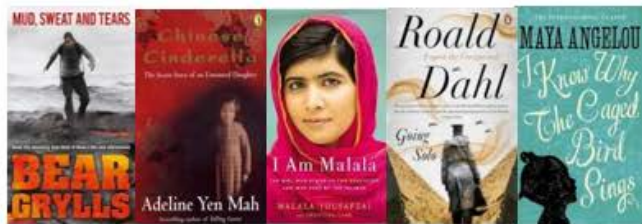


Year 7 English – Autumn Term – Non-Fiction Interesting Lives

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?



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

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?



**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?



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

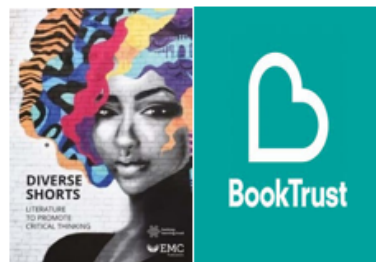


Year 7 – Summer Term – Diverse Shorts Short Stories

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 identity. 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 work 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?



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**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.

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



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).

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).

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).

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

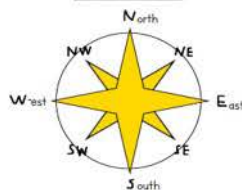


What is geography?

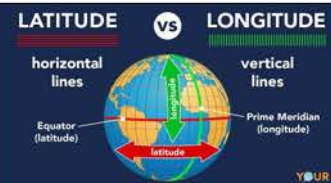
"Geography is the study of the Earth's landscapes, peoples, places and environments. It is the study of the world we live in."

Direction

COMPASS POINTS



Never Eat Shredded Wheat



Longitude & Latitude

Latitude: 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.

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.



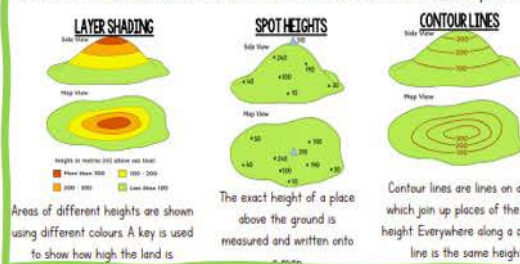
MAP SYMBOLS

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



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 the map.

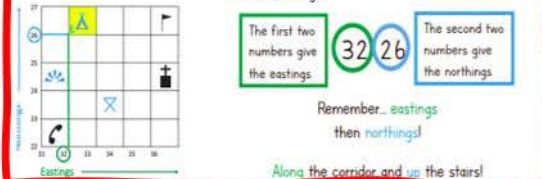
Contour lines are lines on a map which join up places of the same height. Everywhere along a contour line is the same height.

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.

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.

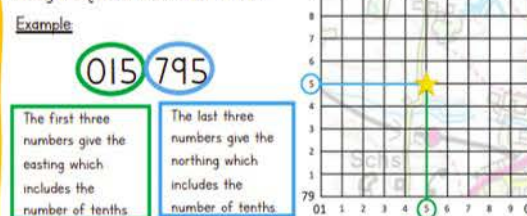


Remember... eastings then northings!

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.



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

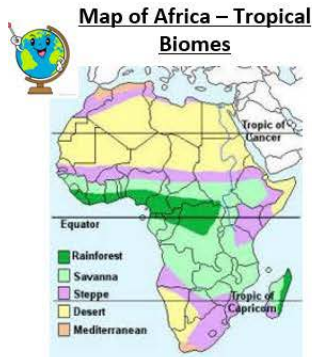
Scale & Distance

Scale can be shown on a map in different ways

Scale Line		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.		



GEOGRAPHY



Climate: average weather conditions of a place over a year. Includes **rainfall** in mm & **temperature** in $^{\circ}$.

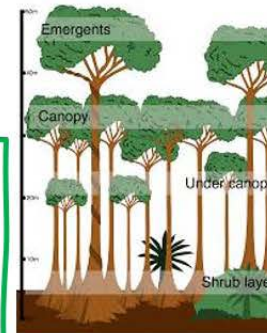
Weather: daily condition sin the atmosphere.

Biome: large scale ecosystem.

Ecosystem: living organisms interacting with each other and their non-living environment (like air, water, and soil).

Destination 2: Into Africa! Focus: Tropical Environments

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.

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:

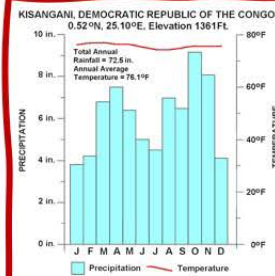
This **grassland biome** with scattered trees covers a large portion of central Africa, experiencing **both wet and dry seasons**.

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.



Adapt: change to suit with the natural surrounding environment.

Lianas Buttress roots



Drip Tip leaves



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.

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

Baobab tree



Acacia tree



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)

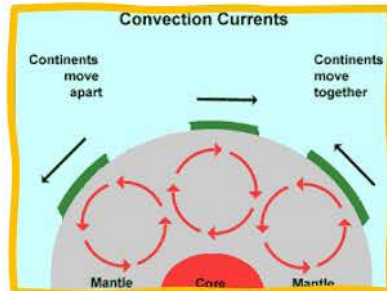


Elephants are in danger from:

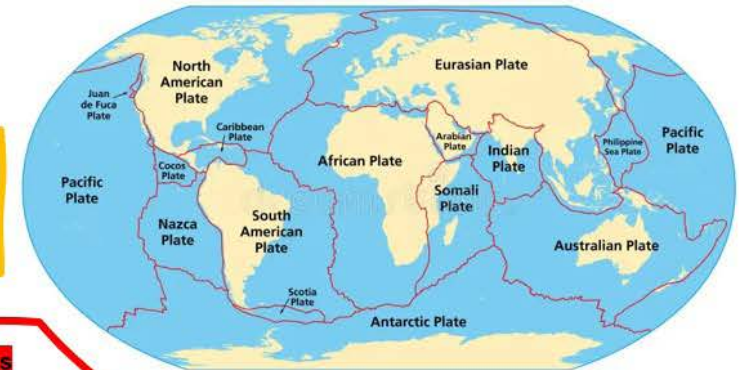
- Habitat loss, forests are removed for farming & urbanisation.
- Poaching for ivory.



Destination 3: 'An Explosive World!'

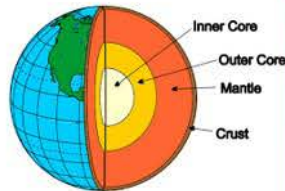


Convection Currents are found in the **mantle**. The **core** heats the magma, which rises towards the crust, cools, spreads, sinks and the process repeats. This moves the plates on top causing **continental drift**.



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.

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.

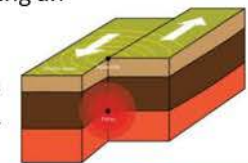


The Earth's crust is broken up into huge slabs called **plates**. The **plates float** on the mantle and are constantly moving by **convection currents**. They bump into, move away from, or rub up against other plates at the plate margins. **Slab 'pull' and 'push'**.

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

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.





HISTORY

Rule Makers and Rule Breakers: Power and the People, 1066 - present

Terms 1-2: Who had the power in medieval England?

Key term	Definition
Battle of Stamford Bridge	Battle on 25th September 1066 where Harold Godwinson defeated Harald Hardrada
Battle of Hastings	Battle on 14th October 1066 where the Normans conquered England, fought between William of Normandy and Harold Godwinson This battle is shown in the Bayeux Tapestry which you can see in Reading Museum
Monarchy	Form of government led by a monarch, such as a king or queen
Heir to the throne	The person who will inherit the throne (the next in line when the king or queen dies)
Feudal system	A way of sorting the population of England in order of importance during the Middle Ages
Motte and bailey castles	Medieval castle featuring a large, raised earth mound (the <i>motte</i>) topped with a wooden or stone tower (the <i>keep</i>), positioned next to an enclosed courtyard (the <i>bailey</i>) where people, soldiers, and livestock lived
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
Domesday Book	A detailed survey and valuation of landed property in England in 1086, ordered by William I
Harrying of the North	The brutal slaughter and pillaging of Northumbria in 1069-1070 by the army of William the Conqueror
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
The Anarchy	A civil war over the English throne between Matilda and Stephen 1135-1153
Catholic Church	The only Christian Church in the medieval period
The Pope	Head of the Catholic Church
Archbishop of Canterbury	The most important position in the Catholic Church in England. Thomas Beckett was murdered in Canterbury Cathedral after Henry II gave him this job and they fell out
Excommunication	When someone is officially removed or suspended from being a member of the Church and therefore cannot go to Heaven

Historical skills terminology

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

Take it further

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

Battle of Hastings 1066 Domesday Book 1086	William I 1066-1087
	William II 1087-1100
Matilda's dad!	Henry I 1100-1135
The Anarchy 1135-1153	Stephen 1135-1154
Murder of Thomas Becket 1170	Henry II 1154-1189
	Richard I 1189-1199
Magna Carta 1215	John 1199-1216
	Henry III 1216-1272
	Edward I 1272-1307
	Edward II 1307-1327
	Edward III 1327-1377
Peasants' Revolt 1381	Richard II 1377-1399
	Henry IV 1399-1413
	Henry V 1413-1422
Start of the Wars of the Roses 1455-1487	Henry VI 1422-1461
	Edward IV 1461-1483
	Edward V 1483
The Princes in the Tower 1483	Richard III 1483-1485



HISTORY

Henry VII 1485-1509	
Henry VIII 1509-1547	The Break with Rome 1534
Edward VI 1547-1553	
Mary I 1553-1558	
Elizabeth I 1558-1603	The Religious Settlement 1559
James I 1603-1625	The Gunpowder Plot 1605
Charles I 1625-1649	English Civil War 1642-1649
Interregnum 1649-1660	Oliver Cromwell 1653-1658
Charles II 1660-1685	The Restoration 1660 Declaration of Breda 1660
James II 1685-1688	The Glorious Revolution 1688
William & Mary 1689-1702	The Bill of Rights 1689
Anne 1702-1714	Act of Settlement 1701
George I 1714-1727	First Prime Minister Robert Walpole appointed 1725
George II 1727-1760	Start of the Industrial Revolution c.1750
George III 1760-1820	Peterloo Massacre 1819
George IV 1820-1830	
William IV 1830-1837	Great Reform Act 1832
Victoria 1837-1901	Chartist movement 1838-184
Edward VII 1901-1910	
George V 1910-1936	Russian Revolution 1917 Some women get the vote in Britain 1918

Terms 3-4: How did the monarchs lose control?

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
Puritan	Extreme Protestants who wanted to "purify," or simplify, the Church of England
Religious settlement	Elizabeth I's compromise on religion passed in 1559
Parliament	Assembly of people responsible for passing laws
Divine right	The belief that monarchs were chosen by God and answerable only to God
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
Lord Protector	A ruler who acts as the head of state but is not a monarch, such as Cromwell
Declaration of Breda	Agreement signed by Charles II in 1660 to ensure his peaceful return to the throne
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: Where did power lie in the 19th and 20th centuries?

Key term	Definition
Revolution	A sudden, often violent overthrow of an existing government or ruler by the people
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
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
Tsar	The Russian Emperor before the Russian Revolution of 1917
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

We are not makers of history. We are made by history.

Martin Luther King Jr.

**Binary (BASE 2)**

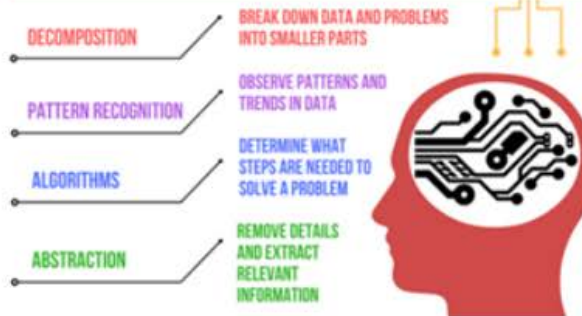
This is the only thing computers can understand, all information and data (no matter how complex can be reduced to ones and zeroes.

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.

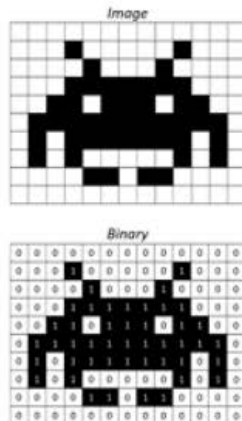
Functions are calculations which are built into the spreadsheet, these include MIN, MAX, AVERAGE, SUM and COUNT.

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

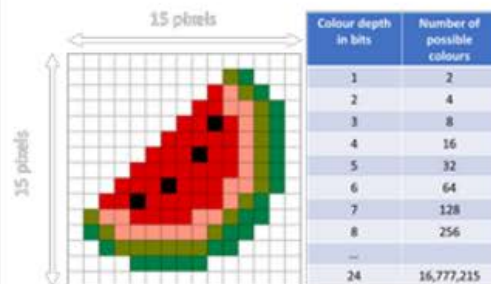


Bitmaps

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.

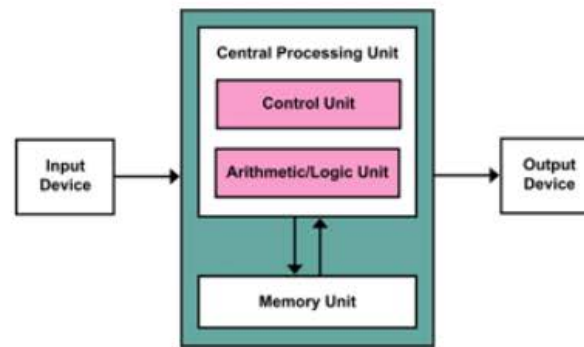


The resolution of an image is the number of pixels high multiplied by the number of pixels wide... or $h * w$.

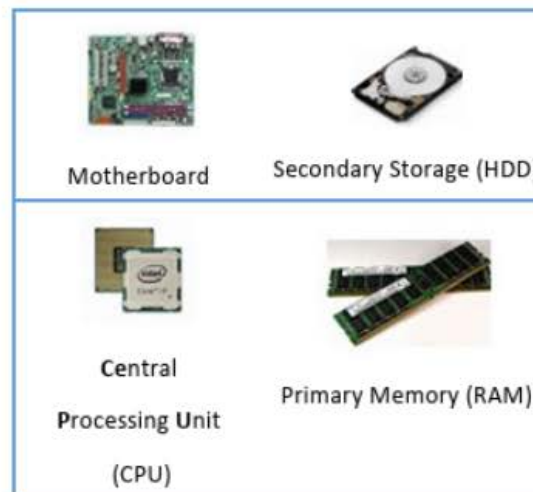
What is a Computer?

(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:



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.



Decimal Number Systems

Key Terms	Integer	A whole number that can be positive, negative, or zero
	Infinite	Something that goes on forever and never ends
	Digit	A single symbol from 0 to 9 used to write numbers
	Decimal	A number that includes a fractional part separated by a dot
	Decimal places	The number of digits that appear to the right of a decimal point
	Operations	The four basic mathematical actions addition, subtraction, multiplication, and division

Skills	Comparing and ordering decimals
	Add, Subtract, Multiply and Divide decimals
	Solving problems with base 10 and other number systems

Properties of Arithmetic

Key terms	Expression	An algebraic or numerical phrase containing numbers, variables, and operators without an equals sign
	Inverse operations	Actions that undo each other, such as addition and subtraction
	Fact families	A group of related maths facts using the same set of numbers
	Commutative	An operation where changing the order of the numbers does not change the result
	Decomposition	The process of breaking a number down into smaller parts, like splitting a tens column during subtraction
	Associative	An operation where grouping numbers differently gives the same result
	Distributivity	The rule where multiplying a number by a group of numbers added together is the same as multiplying them individually.
	$A < B$	A is less than B
	$A > B$	A is greater than B
	$A \leq B$	A is less than or equal to B
	$A \geq B$	A is greater than or equal to B
	$A \neq B$	A is NOT equal to B

Skills	Use distributivity to make multiplication easier
	Connect multiplication with grids and arrays
	Use decomposition for addition and multiplication
	Solve problems using the above



Factors and Multiples

Key terms	Multiple	The result of multiplying a number by an integer
	Product	The result of multiplying two or more numbers together
	Common multiple	A number that is a multiple of two or more numbers
	Venn diagram	A diagram that uses circles to show the relationships between different sets of things
	Intersection	The area where two or more circles in a Venn diagram overlap
	Divisible	Able to be divided by a number without a remainder
	Remainder	The number left over after dividing one number by another
	Divisibility	The ability of a number to be divided by another without a remainder
	Digit sum	The sum of all the digits in a number
	Factor	A number that divides another number exactly
	Common factor	A number that is a factor of two or more numbers
	Square number	A number that is the product of an integer multiplied by itself
	Squared	The result of multiplying a number by itself
	Square root	A value that, when multiplied by itself, gives the original number
	Prime number	A whole number greater than 1 that has exactly two factors: 1 and itself
	Composite integer	A whole number that is the product of 2 or more prime numbers
	Prime factor	A factor of a number that is also a prime number
	Prime factor decomposition	The process of writing a number as a product of its prime factors
	Highest common factor (HCF)	The largest factor that is common to two or more numbers
	Lowest common multiple (LCM)	The smallest multiple that is common to two or more numbers

Facts	1	is not a prime number
	2	is the only even prime number
	Square numbers	have an odd number of factors

Skills	Find multiples and factors
	Find common multiples and factors of 2 or more numbers
	Use divisibility rules
	Use factors to simplify division problems
	Decompose a number into its prime factors
	Represent prime factor decomposition in a Venn Diagram
	Find HCF and LCM

Order of Operations

Key terms	Equal Priority	Operations that have the same level of importance and are solved from left to right
	Higher Priority	Operations that must be completed before lower priority ones, like multiplication before addition
	Index/Indices	The power that tells you how many times to multiply a number by itself

Facts	$\times$ and $\div$	Are equal priority to one another and higher priority than $+$ and $-$
	$+$ and $-$	Are equal priority to one another
	Brackets	Are highest priority
	Indices	Are higher priority to $\times$ and $\div$ and $+$ and $-$

Skills	Apply the order of operations to complex calculations
	Use a calculator effectively
	Use brackets in calculations effectively



Negative Numbers

Key terms	Magnitude	The size of a number ignoring whether it is positive or negative
	Positive	A number greater than 0
	Negative	A number less than 0
	Base	A number that is raised to a power
	Zero Pair	A pair of numbers with equal magnitude but opposite signs that add to 0
	Minus	The operation of subtracting

Facts	Negative x negative	positive
	Positive x negative	negative
	Negative x positive	negative

Skills	Understand negative numbers as a directed number	
	Order and compare directed numbers	
	Add and subtract negative numbers	
	Multiply and divide negative numbers	
	Use the words negative and minus appropriately	
	Solve problems involving directed numbers	

Equations

Key Terms	Equation	A mathematical statement showing that two expressions are equal by using an equals sign
	Balance	The idea that both sides of an equation must always have the same value (eg if you add 3 to the left hand side you must also add 3 to the right hand side)
	Function Machine	A diagram that shows how an input number is changed by a rule or rules to make an output number

Skills	Solve one step equations	
	Solve two step equations	
	Solve equations involving brackets	
	Solve problems using equations	

Expressions

Key Terms	Variable	A letter or symbol that stands for a unknown number or one that can change
	Expression	An algebraic or numerical phrase containing numbers, variables, and operators without an equals sign
	Conventions	The agreed rules or standard ways of writing mathematical symbols and terms
	Coefficient	The number written in front of a variable that multiplies it
	Simplest form	An expression written in its most basic way with no like terms left to combine
	Simplify	To make an expression shorter and easier to understand by combining like terms
	Substitution	Replacing a variable or letter with a specific number
	Evaluate	To calculate the final numerical answer of an expression or equation
	Term	A single number, variable, or numbers and variables multiplied together separated by plus or minus signs
	Like terms	Terms that have the exact same variables and powers
	Constants	Numbers that stay the same because they do not have a variable attached to them
	Expand	To remove brackets from an expression by multiplying everything inside by the term outside
	Factorising	The process of putting brackets back into an expression by finding common factors
	Fully factorising	Finding and removing every single common factor from an expression to put it into brackets

Skills	Simplify by collecting like terms	
	Substitute into expressions	
	Expand single brackets	
	Factorise expressions into a single bracket	



Coordinates

Key terms	Coordinate	A pair of numbers that shows the exact position of a point on a grid
	Line segment	A straight path connecting two specific points that has a fixed length
	Endpoint	A point marking the start or finish of a line segment
	Midpoint	The exact centre point of a line segment that sits perfectly halfway between both endpoints
	Horizontal	A line running straight across from left to right
	Vertical	A straight line running directly up and down
	Gradient	A measure of how steep a line is
	Parallel	Two or more lines that stay the exact same distance apart and never meet
	Intersect	To cross over or meet at a single shared point

Facts	Gradient	Change in y / change in x
	Positive gradient	Rises from left to right
	Negative gradient	Goes down from left to right
	Parallel lines	Have the same gradient

Skills	Find midpoints of line segments
	Find equations of and plot horizontal and vertical lines
	Recognise and plot the lines $y=x$ and $y=-x$
	Recognise and plot coordinates

Angles

Key terms	Angle	The amount of turn between two lines that meet at a shared point
	Arc	A curved part of the outside edge of a circle
	Vertex	The corner point where two or more straight lines or edges meet
	Degrees	The units used to measure the size of an angle or turn
	Acute	An angle that is greater than 0 degrees but less than 90 degrees
	Obtuse	An angle that is greater than 90 degrees but less than 180 degrees
	Reflex	An angle that is greater than 180 degrees but less than 360 degrees
	Perpendicular	Two lines that meet or cross at an exact 90-degree right angle
	Transversal	A straight line that cuts straight across two or more other lines

Facts	Corresponding angles	Are equal
	Alternate angles	Are equal
	Co-interior angles	Sum to 180°
	Vertically opposite angles	Are equal
	Angles on a straight line	Sum to 180°
	Angles around a point	Sum to 360°

Skills	Use a protractor to measure and draw angles
	Solve problems involving corresponding, alternate, co-interior and vertically opposite angles
	Use mathematical notation to describe line segments
	Explain reasoning using mathematical notation



Fractions

Key terms	Fraction	A part of a whole number, written as one integer on top of another separated by a line
	Denominator	The bottom number in a fraction that shows how many equal parts the whole has been divided into
	Numerator	The top number in a fraction that shows how many of the equal parts are being counted
	Unit fraction	A fraction where the numerator is exactly 1
	Proper fraction	A fraction where the numerator is smaller than the denominator, making its value less than 1
	Improper fraction	A fraction where the numerator is larger than or equal to the denominator, making its value 1 or more
	Mixed number	A value made up of a whole number and a proper fraction combined
	Equivalent	Having the exact same value or size, even if written in a different way
	Equivalent fraction	Fractions that have different numerators and denominators but represent the same value
	Common denominator	A shared multiple used as the denominator for two or more different fractions
	Simplify	To divide the numerator and denominator by the same factor
	Simplest form	A fraction written using the smallest possible integers so that the numerator and denominator share no common factors
	Recurring	A decimal where one or more digits repeat forever in a regular pattern
	Reciprocal	The result of flipping a fraction upside down, or dividing 1 by the number

Facts	Dividing by a fraction	Is the same as multiplying by its reciprocal
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Key Skills	Find equivalent fractions
	Compare and order fractions
	Convert between improper fractions and mixed numbers
	Convert between fractions and decimals
	Simplify fractions
	Add and subtract fractions
	Multiply and divide with fractions
	Find fractions of amounts
	Understand the connection between fractions and division



Ratio and Proportion

Key terms	Ratio	A way to compare the sizes of two or more quantities showing how many times larger one value is than another
	Proportionality	The relationship between two variables where they change at a constant rate relative to each other
	Equivalent ratio	Ratios that look different but express the exact same relationship between the quantities
	Unit ratio	A ratio written in the form 1 to n or n to 1 where one of the values is exactly 1
	Prefix(es)	A letter or group of letters added to the front of a unit to change its size like kilo or milli
	Scale diagram	A drawing that represents a real object with all its measurements reduced or enlarged by a constant scale factor

Key Skills

Understand and use ratio notation
Convert between ratios and fractions
Simplify ratios
Find equivalent ratios
Write a ratio as a unit ratio
Solve best buy problems
Convert between standard metric measures
Use ratio tables to solve problems
Understand and use scale diagrams and maps
Share amounts in a ratio
Solve problems involving ratios

Representing data

Key terms	Data	A collection of facts, numbers, or information
	Qualitative	Information that describes qualities or characteristics using words rather than numbers
	Quantitative	Information that can be measured or counted and is written down using numbers
	Tally chart	A quick table that uses vertical marks in groups of five to record how often something happens
	Frequency	The total number of times a particular value or event occurs in a data set
	Frequency table	A table that displays a list of items alongside the exact count of how often each one appears
	Interpret	To look closely at information to explain what it means or to find a story within it
	Grouped frequency table	A table where individual numbers are gathered into groups or ranges to make data easier to read
	Classes	The separate groups or intervals used to sort data in a grouped table
	Class width	The distance between the start and the end of a single class
	Bar chart	A diagram with rectangular blocks where the height of each block shows the frequency
	Dual bar chart	A graph that places pairs of bars side by side to compare two different groups easily
	Pictogram	A chart that uses small pictures or symbols to represent frequency
	Pie chart	A circular graph split into slices to show how different parts make up a whole amount

Key Skills

Create the charts listed above from a set of data
Read values from the charts listed above
Compare sets of data represented in charts
Read and calculate from timetables



FRENCH


 Bonjour
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

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

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

**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

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



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

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.

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

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

NI
HAO!

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

颜色 = colours:

红色 = red
 蓝色 = blue
 黄色 = yellow
 白色 = white
 黑色 = black
 绿色 = green

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

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

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

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

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)

Connectives and intensifiers:

y = and
 pero = but
 sin embargo = however
 muy = very
 bastante = quite
 un poco = a little bit
 con = with
 porque = because

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

Near future tense

Voy a
 Va a + infinitive verb
 Vamos a
 Van a

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

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
fácil = 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

negro = black

gris = grey

rojo = red

naranja = orange

verde = green

amarillo = yellow

rosa = pink

blanco = white

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

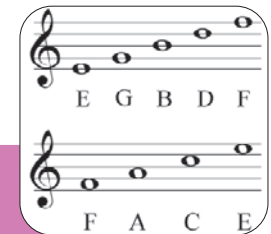
Staff notation: music written on a staff (5 lines and spaces).
Graphic scores are a way of reading and writing music. Instead of using music notes, graphic scores use images, signs and symbols.

Interval: the space between two notes

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

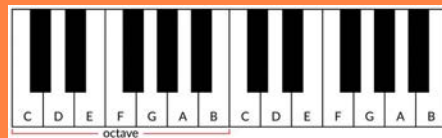
= sharp = rises the note by one semitone e.g. C#

b = flat = lowers the note by one semitone e.g. 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

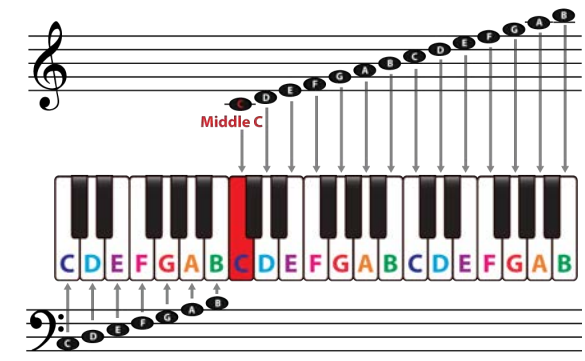
Left hand - for accompaniment/backing

Right hand - for melody



Variation = a theme that is repeated but altered each time

Theme & Variation structure = a structural form where there are a minimum of three sections, starting with the theme in its original form, then further variations altering the original each time.





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 i.e. 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

WORLD DRUMS

African drums – Djembe, talking drum, dundun, agogo bell

Samba drums - Surdo, apito, repenique, agogo bells



TONALITY – MAJOR & MINOR

Scale - an organised sequence of notes. Scales can ascend (go up) or descend (go down)

Major - 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

NOTE VALUES

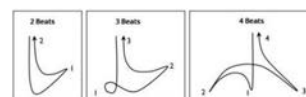
Note Name	Note Symbol	Note Value
Semibreve		4 beats
Minim		2 beats
Crotchet		1 beat
Quaver		½ of a beat
Pair of Quavers		2 x ½ beats = 1
Semiquaver		¼ of a beat
Demisemiquaver		⅛ of a beat

A large ensemble (group of musicians) on various musical instruments who play music together

LAYOUT



CONDUCTING



ORCHESTRA

Sections

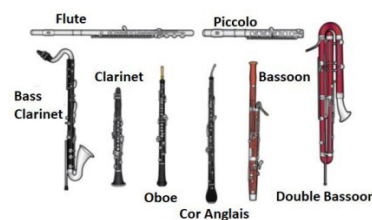
Strings



Brass



Woodwind



Percussion





Term 1 & 2 Outdoor Sports

T1 Rugby

Skills

Passing

- Hold the ball with two hands.
- Be in front of the person when passing
- Pass the ball across the body

Running with the Ball

- Hold the ball in two hands for control
- Head up to see space and defenders
- Run forward into open space

Touch Tackle (Defending)

- Stay low and balanced when tackling
- Reach for the hips, two handed touches only
- Defending team creates a tackle triangle once a touch tackle has been made

Evasion (Attacking Movement)

- Change direction to avoid defenders
- Use speed to move into space
- Keep body between defender and ball

Rules

- **Backward Passing Rule:** The ball must always be passed backwards
- **Touch Rule:** When a touch has been made, the player must stop and the defending team create a tackle triangle.
- **5-Touch Rule:** A team has 5 touches before possession changes
- **Try Scoring:** A try is scored by placing the ball over the try line

Key Vocabulary

- **Pass:** Moving the ball to a teammate
- **Touch Tackle:** Two handed touches to stop the player then create a triangle
- **Try:** Scoring by placing the ball over the line
- **Space:** Area away from defenders
- **Evasion:** Avoiding defenders using movement



Netball

Skills

Passing

- Hold ball with fingers spread in a "W" behind the ball for control
- Step towards target when passing
- Use chest or bounce pass for accuracy

Footwork (Landing)

- Land on one foot then the other (or both together)
- Keep balance after landing
- Do not move landing foot once grounded

Shooting

- Face the post with balanced stance
- Hold ball above head with two hands
- Push ball upwards using arms and wrists

Defending

- Stay between player and goal to intercept
- Jump feet back (1m), then Arms Up when defending a pass
- Keep arms by your side until you reach for the ball when marking a player
- Keep body between defender and ball

Rules

- **Footwork Rule:** Players cannot replace their landing foot once they catch the ball
- **Contact Rule:** No physical contact that impacts another player .
- **3-Second Rule:** Player must pass or shoot within 3 seconds
- **Shooting Area:** Only GS and GA can shoot inside the shooting circle

Key Vocabulary

- **Pass:** Moving the ball to a teammate
- **Pivot:** Rotating on one foot without moving it
- **Marking:** Staying close to an opponent
- **Shoot:** Attempting to score a goal
- **Space:** An area free from defenders





Term 1 & 2 Indoor Sports

Health Related Fitness

Skills

Cardiovascular Endurance

- Measured via the 12-minute Cooper Run
- Needed by endurance athletes

Muscular Strength

- Measured using a hand grip dynamometer
- Needed for lifting heavy items

Muscular Endurance

- Measured using the 1min press-up or 1 min sit-up Test
- Used to repeat movements over time

Flexibility

- Measured using the Sit & Reach Test
- Needed to move joints over a large range

Speed

- Measured using the 30m Sprint Test
- Used to get from A to B as fast as possible

Agility

- Measured using the Illinois Agility Test
- Used to change direction at speed

Power

- Measured using the Sargent Jump
- Used for explosive movements

Rules

- **Safe Technique:** Any Fitness Tests must be performed with correct technique to prevent injury

Key Vocabulary

- **Cardiovascular Endurance:** Ability to keep going over a period of time
- **Muscular Strength:** Ability of muscles to exert force
- **Muscular Endurance:** Repetitive movements over time
- **Flexibility:** Range of movement at a joint
- **Speed:** How fast you can move
- **Agility:** Ability to change direction quickly
- **Power:** Speed and strength combined



Skills

Body Positions (Shapes)

- Hold tight, controlled shapes (tuck, straddle, pike)
- Keep body tensed to maintain balance
- Point toes and extend arms for good presentation

Rolls (Forward & Backward)

- Keep chin tucked to protect the head/neck
- Push from legs and curl body tightly
- Roll smoothly in a straight line

Balances

- Hold balance for at least 3 seconds
- Keep body aligned and stable
- Use arms to support and control position

Linking Movements (Sequences)

- Move smoothly between skills with control and creativity
- Maintain flow without stopping
- Use different levels in movement

Rules

- **Safety First:** Always perform on mats
- **Control Rule:** Skills must be performed with control, not speed only
- **Aesthetics:** awarded points for neatness, alignment and control
- **Start & Finish Positions:** All routines must have a clear beginning and end

Gymnastics

Key Vocabulary

- **Body Tension:** Tightening muscles to hold shape
- **Balance:** Holding a stable position
- **Roll:** A controlled movement over the body
- **Sequence:** A series of linked movements
- **Extension:** Stretching body parts fully





Term 3 & 4 Outdoor Sports

Football

Skills

Ball mastery (toe taps, V-cuts)

- Stay on your toes (light feet)
- Keep the ball within 1 metre
- Try to use both feet equally

Dribbling with close control

- Push the ball slightly ahead
- Accelerate into space when possible
- Keep body balanced and low for control

Basic turns (drag back, inside cut)

- Turn away from pressure
- Keep the ball close during the turn
- Explode away after turning

1v1 attacking (step-over, scissors)

- Perform skill close to defender
- Use body to sell the fake (disguise)
- Accelerate quickly after the move

Key Vocabulary

- **Dribbling:** Moving with the ball under control
- **Ball mastery:** Close control using different parts of the foot
- **Change of direction:** Turning away from defender
- **Support:** Offering a passing option
- **Transition:** Change from attack to defence (or vice versa)



Rules

- **No Hands Rule:** Outfield players cannot use their hands; only the goalkeeper can in their area
- **Scoring:** A goal is scored when the whole ball crosses the goal line
- **Fouls:** No pushing, tripping, or kicking opponents
- **Out of Play:** Ball is out when it crosses the sideline or goal line

Hockey

Skills

Passing

- Hold stick with left hand at top, right hand lower down
- Keep ball on flat side of the stick
- Push the ball towards target with controlled follow-through

Dribbling

- Keep the ball close to the stick
- Use small touches to control the ball
- Keep head up to avoid players and find space

Shooting

- Position body side-on to goal
- Strike ball using flat side of stick
- Aim towards goal with a controlled hit or push

Defending

- Stay goal side of the attacker
- Keep stick low and ready
- Watch the ball and block passes

Key Vocabulary

- **Dribble:** Moving with the ball using the stick
- **Pass:** Sending the ball to a team-mate
- **Shoot:** Attempting to score a goal
- **Tackle:** Attempt to win the ball from an opponent
- **Space:** Area to move into away from defenders



Rules

- **Stick Rule:** Ball must only be played with the flat side of the stick
- **Feet Rule:** Players cannot use their feet to control the ball
- **Scoring Rule:** A goal counts when scored from inside the shooting area
- **Safety Area:** No high sticks or dangerous play



Term 3 & 4 Indoor Sports

Swimming

Skills

Swimming introduction

- Tell the teacher if you are a non swimmer and stay in the shallow end
- Entry/exit- sitting, pivot and lower into pool. Push up with arms to sitting on side.
- Follow all water safety instructions including 3 whistle to exit the water and sit against the wall

Front Crawl

- Keep body flat and streamlined
- Alternating arm action reaching forward
- Kick legs continuously with small + fast movements

Backstroke

- Body straight and hips high
- Arms in a continuous circular motion
- Keep head still and face upwards

Breaststroke

- Perform kick: heels up, push out, snap together
- Arms: Slice, Cut, Eat
- Lifting head out to breath on cut

Rules

- **Entry/Exit:** Enter and exit the pool safely when instructed and no diving
- **Emergency Exit from Pool:** 3 blasts on the whistle means exit the pool at the nearest point and sit with your back against the wall
- **Stroke Basics:** Use correct stroke for each activity
- **Pool Behaviour:** No running or unsafe behaviour on poolside

Key Vocabulary

- **Cardiovascular Endurance:** Ability to keep going over a period of time
- **Muscular Strength:** Ability of muscles to exert force
- **Muscular Endurance:** Repetitive movements over time
- **Flexibility:** Range of movement at a joint
- **Speed:** How fast you can move
- **Agility:** Ability to change direction quickly
- **Power:** Speed and strength combined



Dance

Skills

Body Control & Movement

- Movements controlled and balanced
- Use different body parts clearly and precisely
- Maintain good posture

Rhythm & Timing

- Move in time with the music beat
- Unison dancing as one
- Canon one after the other

Travelling & Levels

- Use space by moving in different directions
- Perform movements at low, medium, and high levels
- Transition smoothly between movements

Creating & Performing Sequences

- Link movements into a short routine
- Repeat and practise to improve
- Clear start and finish

Rules

- **Space Awareness Rule:** Keep a safe distance from others when performing
- **Respect Rule:** Be supportive of others
- **Control Rule:** Perform safely with control
- **Start & Finish Rule:** Must have a clear beginning and end

Key Vocabulary

- **Rhythm:** The pattern of movement in time with music
- **Sequence:** A series of movements linked together
- **Level:** The height at which a movement is performed (low, medium, high)
- **Timing:** Performing movements at the correct moment
- **Control:** Ability to perform movements smoothly and accurately





Term 5 & 6 Outdoor Sports

Athletics

Skills

Sprinting (100m)

- Drive arms forwards and backwards
- Stay on toes with quick, short steps
- Keep body slightly leaning forward

Middle Distance (800m)

- Maintain a steady pace throughout
- Breathe in a rhythm (in/out pattern)
- Run with relaxed upper body

Long Jump

- Fast, controlled run-up
- Take off from one-foot, high arms and head up
- Land with two feet together/forward

Throwing (Shot & Javelin)

- Stand side-on to throwing area
- Hold implement correctly and safely
- Transfer weight from low to high

Key Vocabulary

- **Sprint:** Running at maximum speed over a short distance
- **Endurance:** Ability to keep going over a longer time
- **Take-off:** The point where a jumper leaves the ground
- **Throw:** Propelling an object through the air
- **Relay:** A team race involving passing a baton



Rules

- **Stay in Lane (Track):** In sprint races, runners must stay in their lane
- **Valid Jump:** A goal is scored when the whole ball crosses the goal line
- **Safe Throwing:** Throws must only happen when safe and instructed
- **Relay Basics:** Baton must be passed between teammates

Striking and Fielding

Skills

Striking (Batting)

- Keep eyes focused on the ball
- Swing through the ball with a controlled action
- Transfer weight to get more power

Throwing

- Step forward with opposite foot to throwing arm
- Overarm- long, underarm- short
- Follow through towards the target

Catching

- Watch the ball into the hands
- Use two hands to secure the catch
- Pull into chest to cushion the ball
- Stay low and ready

Fielding (Retrieving Ball)

- Move quickly towards the ball
- Pick up the ball safely using two hands

Key Vocabulary

- **Batting:** Hitting the ball to score runs
- **Fielding:** Stopping or retrieving the ball
- **Catch:** Taking the ball before it hits the ground
- **Run:** Scoring points by travelling between or around bases
- **Out:** When a batter is dismissed



Rules

- **Scoring Runs:** Players score by running between bases or posts
- **Out Rule:** Batter can be out if caught or stump/base is hit
- **Fair Play Area:** Ball must be hit into the correct playing area
- **Turn Taking:** Teams alternate between batting and fielding, keeping score

Term 5 & 6 Indoor Sports

Outdoor Adventurous Activities

Skills

Teamwork

- Communicate clearly using simple instructions and ideas
- Listen to others and share decisions
- Work together- cooperatively

Problem Solving (Challenges)

- Work together to plan a solution
- Try different ideas
- Encourage others and stay positive

Orienteering (Map Reading)

- Hold map the correct way and match it to surroundings
- Identify key features (paths, buildings)
- Follow simple routes

Navigating & Moving

- Move safely around the environment
- Landmarks to check location regularly
- Aware of surroundings and follow planned route

Key Vocabulary

- **Orienteering:** Finding your way using a map and/or markers
- **Teamwork:** Working together to achieve a goal
- **Map:** A visual representation of an area
- **Route:** The path taken to reach a destination
- **Landmark:** Used to help identify location



Rules

- **Stay Together Rule:** Always remain with your group unless instructed otherwise
- **Boundary Rule:** Stay within the designated activity area
- **Respect Environment Rule:** Look after equipment and natural surroundings
- **Listen to Instructions:** Always follow teacher guidance for safety

Tennis

Skills

Forehand

- Hold racket with correct grip (shake hands grip)
- Swing across your body
- Make contact in front of the body
- Follow through towards the target

Backhand

- Use two hands for control and power
- Turn shoulders towards the ball
- Follow through towards target

Serving

- Stand sideways with feet shoulder-width apart
- Hold ball in non-dominant hand
- Drop ball in front of you or hit out of hand
- Lift ball over the net with control, aiming for the service box

Ready Position & Movement

- Stand with knees bent and racket up
- Stay on toes ready to move
- Move quickly to get behind the ball
- Recover to ready position after every shot

Rules

- **Scoring:** Points increase from 0 → 15 → 30 → 40
- **Serving Rule:** Serve must go over the net diagonally into the correct service box
- **Bounce Rule:** Ball can bounce once before returning
- **In/Out:** Ball must land within the court lines to be in. (Narrow for singles)

Key Vocabulary

- **Forehand:** Shot played on dominant side
- **Backhand:** Shot played across the body
- **Serve:** Starting shot to begin a point
- **Rally:** Continuous hitting between players
- **Court:** Playing area marked with lines

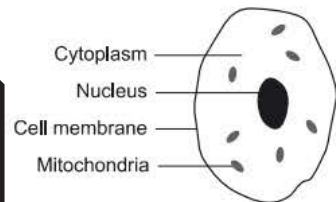




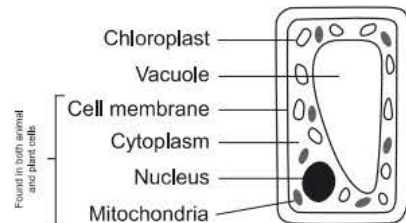
Year 7 Science Knowledge Organisers

Topic B1.1 Cells

1. Living things are called organisms
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

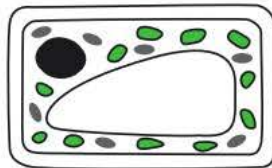
12. Specialised cells have different structures that let them carry out their function
13. **Sperm cells:** Their function is to swim to the egg cell for fertilisation. The structure that helps them to do this is a tail for swimming



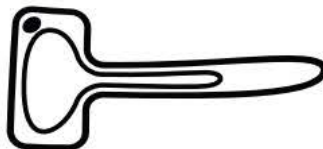
14. **Neurons** (nerve cells): Their function is to send messages to control the body. The structure that helps them to do this is a long axon and connections at the ends



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

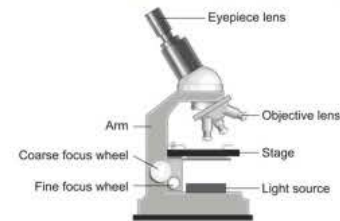


16. **Root hair cells:** Their function is to take in lots of water. To help them to do this, their structure consists of a large surface area to take water in



Microscopes

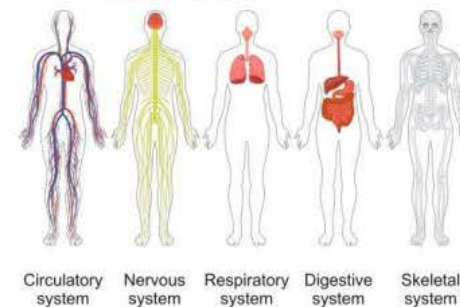
17. A microscope is used to make something small appear much larger
18. The parts of a microscope are: eye piece lens, stage, objective lenses, handle/arm, light/mirror, coarse focusing wheel, fine focusing wheel



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

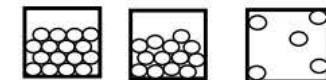
Cell Organisation

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



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.

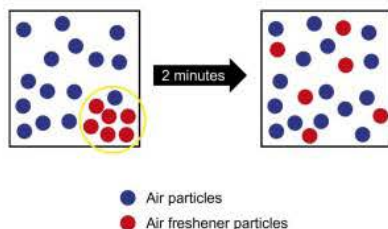
20. When boiling occurs, Bubbles **of the substance** rise up to the surface and escape into the air.



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

$$\rho = \frac{m}{V}$$

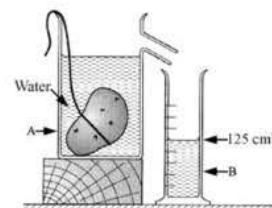
Density measured in (g/cm³) Mass measured in (g) Volume measured in (cm³)

$$\text{volume} = \text{length} \times \text{width} \times \text{height}$$

(cm³) (cm) (cm) (cm)

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 P1.1 Forces

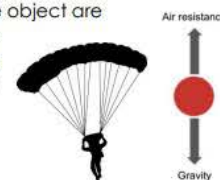
1. A force is an interaction (e.g. a push, pull or twist) between 2 objects.
2. A force can change an object's shape, speed or direction.
3. Forces are either contact or non-contact
4. **Contact forces** need the objects to be touching. Eg: drag forces, friction, air resistance, tension and normal contact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



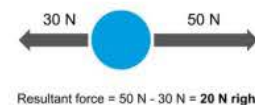
10. The unit of force is **Newton (N)**.

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.



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



Interaction Pairs

14. Forces **always** act in interaction pairs.

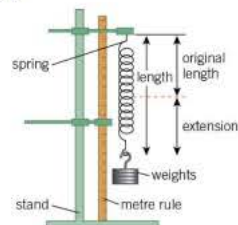
15. Interaction pairs act on 2 different objects.

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**

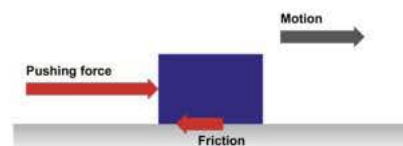
17. Changing the shape of an object can be called deformation.
18. The **extension** of a spring is an example of deformation.
19. The extension of spring can be measured when different weights are added.
20. The extension is larger when more weight is added.



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

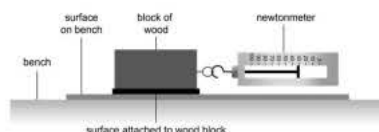
Drag Forces and friction

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 B1.2 Reproduction

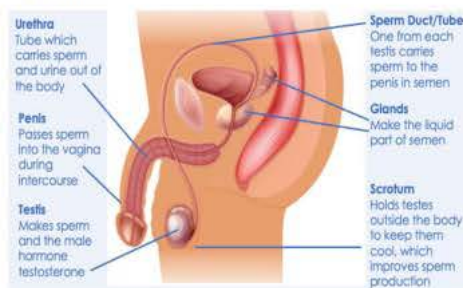
1. Reproduction can be sexual or asexual.
2. **Asexual reproduction** is when an organism makes an exact copy of itself to make a new individual. Eg: unicellular organisms, bacteria, fungi and plants.
3. **Sexual reproduction** is when sex cells (**gametes**) from two individuals fuse to form a new individual.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

Puberty

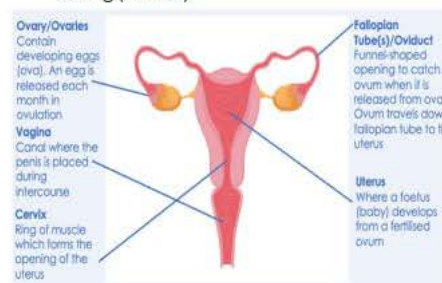
4. The body goes through changes during **puberty** or adolescence (e.g. body and pubic hair grow). This prepares the body for sexual maturity and the production of gametes.
5. These changes are controlled by sex **hormones**.

Male Reproductive System

6. The male reproductive system develops during puberty.

**Female Reproductive System**

7. The female reproductive system develops during puberty

**Menstrual Cycle**

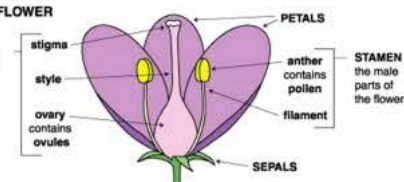
8. The female reproductive cycle is called the **menstrual cycle**, which prepares a woman's body for pregnancy.
9. On average, one menstrual cycle lasts 28 days.
10. **Ovulation** is when the egg is released. This happens on day 14.
11. The uterus lining builds up to allow the embryo to develop.
12. 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**

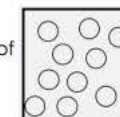
18. The male gamete is the **pollen** grain.
19. Pollen is produced by the **anther**.
20. The female gamete is the **egg** found in the **ovule**. The ovule is in the ovary.

INSIDE A FLOWER**CARPEL**

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. Seeds are dispersed by: Animals (stuck to fur or when they are eaten), Wind, Water and explosion

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





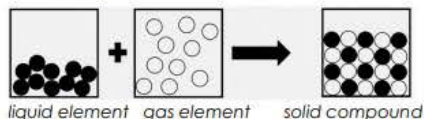
6. **Physical properties** = state, appearance, smell, magnetic, etc.
7. **Chemical properties** = what it reacts with and how reactive it is

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 into 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 name 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 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 B1.3 Ecosystems

1. An **ecosystem** is the interaction of a community of organisms with the non-living parts (abiotic factors) 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

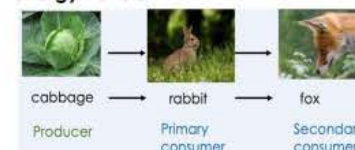
Sampling

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**

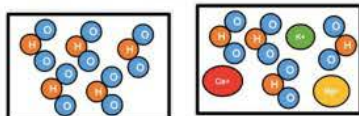
13. **Biotic factors** are **living** things that can affect a community
Eg: food, disease and predators
14. **Abiotic factors** are **non-living** things that can affect a community
Eg: temperature, light, wind, amount of water

Competition

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

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.
10. A solute **dissolves** when the solute particles fill in the spaces between the solvent particles.

Melting and Boiling Points

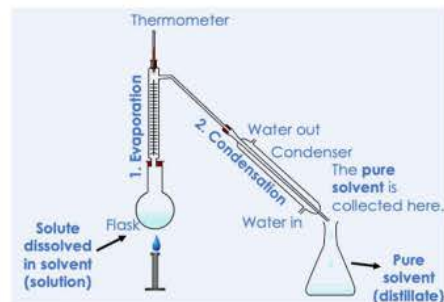
11. **Pure** substances melt and boil at specific temperatures
12. Melting points and boiling points can be used to identify pure substances or mixtures

Separating Mixtures

13. Mixtures can be separated by physical processes such as filtration, crystallisation and chromatography
14. These physical processes do not involve chemical reactions and no new substances are made.
15. In **distillation**, a solution can be separated by evaporating the solvent.
16. In **crystallisation**, the liquid is evaporated to leave behind solid crystals



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



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

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



20. R_f = distance moved by substance / distance moved by solvent
21. R_f values are used to identify a substance in a particular solvent

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**, 1 MJ = 1000 kJ = 1,000,000 J (one million joules)

Energy Stores

4. Energy can be stored in different ways, including:
 - o Moving things have a **kinetic** energy store
 - o High up things have a **gravitational potential** energy store
 - o Stretched, twisted or bent things have an **elastic potential** energy store
 - o Hot things have a **thermal** energy store
 - o 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.

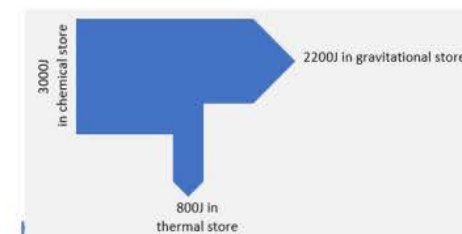
9. Food energy content is often measured in **calories** instead of joules
10. 1 food calorie is approximately 4 200 J.
11. Different foods contain different amounts of energy – **food labels** can tell us how much.

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**.



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.

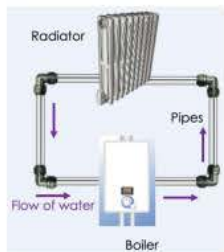
Conductors and insulators

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.

Topic P1.4 Electricity

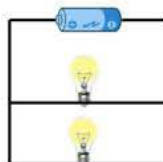
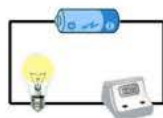
Models of Electricity

- Electric circuits can be described using **models**, like a heating system.
- No model is perfect because they are not exactly the same as the real thing.



Series and Parallel Circuits

- A complete circuit has no gaps, so the electricity can flow all around in a loop.
- If the circuit is **incomplete**, the electricity cannot flow.
- If all of the components are connected into one main loop, it is a **series circuit**.
- If there's more than one loop with junctions, it's a **parallel circuit**.



Circuit Symbol	Component Name	Function
1.	Cell	Push charges around the circuit.
2.	Battery	Supplies electrical energy
3.	Bulb/Lamp	Lights up
4.	Ammeter	Measures current
5.	Voltmeter	Measures voltage
6.	Motor	Spins around or moves
7.	Switch	Completes the circuit
8.	Buzzer	Makes a sound

Current

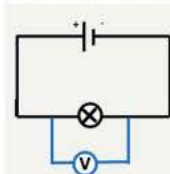
- Current is the rate of flow of charge and is measured in Amperes/**Amps (A)** by an **Ammeter**.
- Ammeters are placed **in series**.
- Current transfers **energy** from one place to another.
- Current can be calculated using the equation:

$$\text{Current} = \frac{\text{Charge}}{\text{Time}}$$

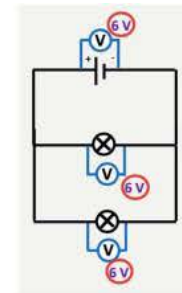
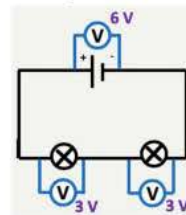
- Charge is measured in Coulombs (C) and time is measured in seconds (s).
- The brightness of a bulb is increased by adding cells/ batteries and decreased by adding more bulbs (components).
- Current is the **same everywhere** in a **series circuit**.
- Current **splits** at the **junctions** in a **parallel circuit**.

Voltage

- Voltage is measured in **Volts (V)** by a **Voltmeter**.
- Voltmeters are connected **in parallel**.



- Voltage** is the amount of energy shifted from the power source to the moving charges, or from the charges to the circuit component.
- Adding voltage (adding batteries) **increases the current** and increases the **brightness** of bulbs.
- The voltage in a series circuit is shared between components.



- The voltage across the cell is equal to the voltage on each pathway of a parallel circuit.



SCIENCE SKILLS

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

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

Continuous – values that are numbers
e.g. temperature

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.

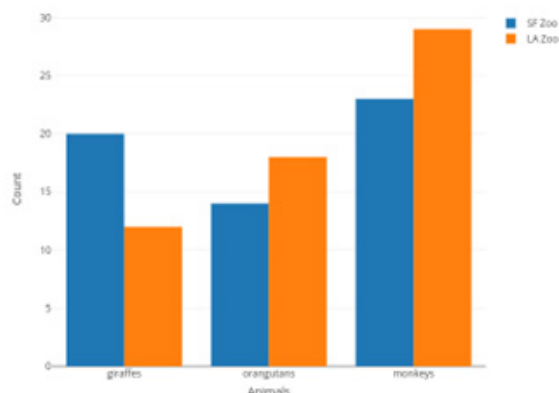
Tables

Units **only** go in headings

Time (s)	Vol. gas (cm ³)

Bar Chart

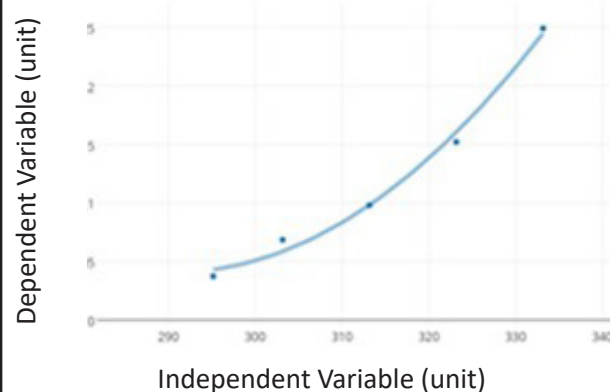
Type of graph plotted for one piece of **categorical** data and one piece of **continuous** data



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.

Why not use the checkboxes over the year to check off the progress you are making?

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

- STEP 0** I complete tasks by following instructions
- STEP 1** I complete tasks by finding someone to help if I need them
- STEP 2** I complete tasks by explaining problems to someone for advice if I need to
- STEP 3** I complete tasks by finding information I need myself
- STEP 4** I explore problems by creating different possible solutions
- STEP 5** I explore problems by thinking about the pros and cons of possible solutions
- STEP 6** I explore complex problems by identifying when there are no simple technical solutions
- STEP 7** I explore complex problems by building my understanding through research
- STEP 8** I explore complex problems by analysing the causes and effects
- STEP 9** I create solutions for complex problems by generating a range of options
- STEP 10** I create solutions for complex problems by evaluating the positive and negative effects of a range of options

STEAM Skills: Teamwork

- STEP 0** I work with others in a positive way
- STEP 1** I work well with others by behaving appropriately
- STEP 2** I work well with others by being on time and reliable
- STEP 3** I work well with others by taking responsibility for completing my tasks
- STEP 4** I work well with others by supporting them if I can do so
- STEP 5** I work well with others by understanding + respecting diversity of others' cultures, beliefs and backgrounds
- STEP 6** I contribute to group decision making
- STEP 7** I contribute to group decision making, whilst recognising the value of others' ideas
- STEP 8** I contribute to group decision making, encouraging others to contribute
- STEP 9** I improve the team by not creating unhelpful conflicts
- STEP 10** I improve the team by resolving unhelpful conflicts

STEAM Skills: Staying Positive

- STEP 0** I can tell when I feel positive or negative
- STEP 1** I can tell when others feel positive or negative
- STEP 2** I keep trying when something goes wrong
- STEP 3** I keep trying and stay calm when something goes wrong
- STEP 4** I keep trying when something goes wrong, and think about what happened
- STEP 5** I keep trying when something goes wrong and help cheer others up
- STEP 6** I keep trying when something goes wrong and encourage others to keep trying too
- STEP 7** I look for opportunities in difficult situations
- STEP 8** I look for opportunities in difficult situations, and share these with others
- STEP 9** I look for opportunities in difficult situations, and adapt plans to use these opportunities
- STEP 10** I look for opportunities in difficult situations, and create new plans to use these opportunities

STEAM Skills: Creativity

- STEP 0** I imagine different situations
- STEP 1** I imagine different situations and can say what I imagine
- STEP 2** I imagine different situations and can bring them to life in different ways
- STEP 3** I generate ideas when I've been given a clear brief
- STEP 4** I generate ideas to improve something
- STEP 5** I generate ideas by combining different concepts
- STEP 6** I use creativity in the context of work
- STEP 7** I use creativity in the context of my wider life
- STEP 8** I develop ideas by using mind mapping
- STEP 9** I develop ideas by asking myself questions
- STEP 10** I develop ideas by considering different perspectives

At Highdown we CARE

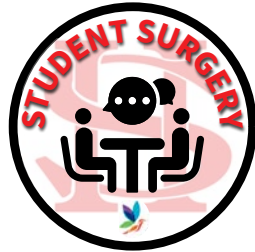
The CARE programme is designed to celebrate your engagement with co-curricular opportunities at Highdown. Across the academic year we are challenging you to complete as many of the activities from the following lists as possible. Once you have completed 20 challenges you will be awarded with a physical bronze badge. You will receive a silver badge for 30 challenges and a gold badge for 40.

Community	Aspiration	Respect	Excellence
Open Evening Badge – Support with school Open Evening	Contribution Badge – Receive 50 P1s for contribution in class	Friendly Badge – Request to sit next to someone you do not know well in mentor time	Reader Badge – Read out loud to your mentor group
Student Surgery Badge – Attend a student surgery to give feedback about the school	What is Geography Badge – Enter the Geography poster competition	Values Badge – Recite Highdowns CORE values to a member of SLT	Friday Three Badge – Receive 2 awards of Friday 3 from your teachers
Helper Level 1 Badge – Receive 5 P1s for being helpful	Aspiring Performer Badge – Audition for a school Performing Arts event	Mentor Star Badge – Receive a positive email home from your mentor	Project Badge – Receive 5 P2s for excellence in projects and extended pieces of work
Helper Level 2 Badge – Receive 2 P2s for significant community contribution	Sporting Colours Badge – Attend one sports club for a whole term (separate badges for each sport)	Supporter Badge – Receive 5 P1s for supporting other students	Book Report Badge – Write a book report and show it to your mentor
Helper Level 3 Badge – Receive a P3 for being a Community Star	Bebras Badge – Enter the Bebras competition	Ready For The Day Badge – Receive 'Ready for the Day' 30 times	Praise Points Bronze Badge – Achieve 200 P points
Student Leader Badge – Become a KS3 House ambassador or Y7 student leader	Cocurricular Engager Badge – Attend clubs 20 times	Mentor Helper Badge – Volunteer to be your mentor's helper for a week	Praise Points Silver Badge – Achieve 400 P points
Christmas Lunch Badge – Attend Y7 Christmas Lunch	Cocurricular Explorer Badge – Attend clubs 40 times	Lesson Star Badge – Receive 2 positive emails home from your teachers	Praise Points Gold Badge – Achieve 600 P points
Litter Picking Badge – Volunteer to complete a litter pick around the school site at break or lunch	Cocurricular Enthusiast Badge – Attend clubs 80 times	Respect Badge – Achieve all Ms and Es for Respect in a report	MCQ Badge – Get an average of 12 or more in the end of term knowledge checks in all your subjects
House Drama Badge – Take part in the House Drama competition	Aspiration Badge – Achieve all Ms and Es for Aspiration in a report	Progress Badge – Speak to one of your teachers about your progress and take notes	Excellence Badge – Achieve all Ms and Es for Excellence in a report
Buddy Badge – Be selected as a buddy	Maths Challenge Badge – Enter the Maths Challenge	Gratitude Badge – Write 3 thank you notes to members of staff	Personal Best Badge – Receive 2 P3 awards for achieving your personal best
Great Get Together Badge – Run an activity at the Great Get Together	House Participant Badge – Enter two house competitions	Pastoral Star Badge – Receive 3 P2s for Pastoral Star	HEP Badge – Achieve 3 targets on Highdown Excellence Plan across the school year
Welcoming Badge – Write a welcome letter to a future Y7 student	Sports Day Badge – Take part in Sports Day	House Star Badge – Receive a P3 for being a House Star	Headteacher's Award Badge – Achieve a P4 Headteacher's award

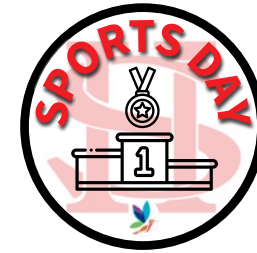
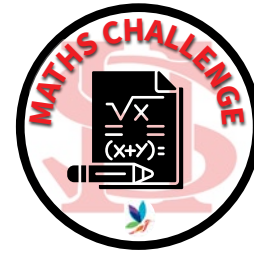
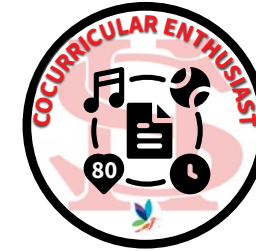
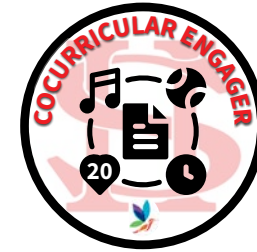
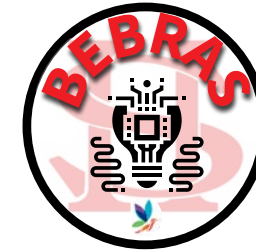
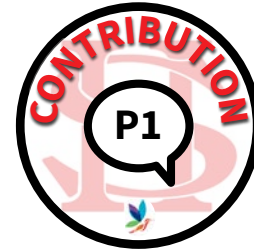


BADGES

COMMUNITY



ASPIRATION



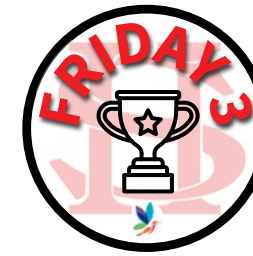


BADGES

RESPECT



EXCELLENCE



WEEK A

Period	Monday	Tuesday	Wednesday	Thursday	Friday
1					
2					
BREAK					
3					
4					
LUNCH					
5					

WEEK B

Period	Monday	Tuesday	Wednesday	Thursday	Friday
1					
2					
BREAK					
3					
4					
LUNCH					
5					

**Highdown School and Sixth Form Centre**

Year 7 Knowledge Organiser

2026-2027