



**PENISTONE
GRAMMAR SCHOOL**

Achieving Excellence through a Values Driven Education

ESSENTIAL KNOWLEDGE SHEETS CURRICULUM BOOK

YEAR 7 BOOK 1

Aim High

Be Determined

Be Brave

Be Supportive

Be Proud

02 Welcome to your Essential Knowledge Book

03 Art

04 Computing

06 Design & Technology

Graphic Products
Resistant Materials
Textiles

11 Drama

13 English

A Christmas Carol
Dracula

16 Food

17 Geography

Extreme Weather
Map Skills
Tourism

20 History

Migration

22 Maths

Number Skills

24 Music

Rhythm & Pitch

25 PE

Hockey
Rugby League
Netball
Football
Outdoor Fitness
Badminton

31 RCS

World Religions
My Body and Me

35 Science

Biology
Chemistry
Physics

38 Spanish

Mi Vida
Mi Tiempo Libre
Mi Insti

44 Notes

To make the most of your essential knowledge book, you must:

1. Bring it to school every day and have it available on your desk in every lesson.
2. Keep all your essential knowledge sheet books as they provide you with the essential knowledge for each topic and subject you learn.
3. Take pride in your book, keeping it in excellent condition.
4. Write your name on the front of the book.
5. Be aware that if you lose or damage your book it is your responsibility to replace it at a cost of £4.

What is an Essential Knowledge Book?

An effective learning tool to help you retain, revise and retrieve the essential knowledge of a topic within your subjects. The Essential Knowledge Sheet for each topic is usually no more than two sides of information that includes core facts, concepts, diagrams, vocabulary and quotations that you need to know and understand to master a topic.

Why Essential Knowledge Sheets?

They provide you, your teachers and parents/carers with an overview of a topic by having the core knowledge, diagrams, explanations and key terms in one place. They allow you to routinely refer to and 'check off' what you know and understand as you are taught a topic.

Research evidence shows that the regular retrieval of knowledge helps us to know more, remember more and do more. This then allows you to store knowledge in, and recall it from your long-term memory, freeing up space in your working memory to take in new knowledge and information. The better you know the essential knowledge of a subject, the better you will be able to apply it to problems, questions, assessments, home learning, and further increase your independence within lessons and at home.

How to use your Essential Knowledge Sheets

The most powerful use of an Essential Knowledge Sheet is as a self-quizzing tool. For example:

1. READ → COVER → WRITE → CHECK → QUIZ

Read a chunk of information from your essential knowledge sheet (more than once is most effective), Cover it up, Write what you remember, Check to see if you have remembered the information correctly. If you haven't remembered it all correctly then re-do the process. When you are confident in your retention of the knowledge, quiz yourself (or ask a friend or family member) to see if you can apply the knowledge learned to questions, problems and practice tasks.

2. Mind Maps

Mind mapping is a diagram to visually represent information. It is a graphic technique you can use to translate what you know of a topic/concept into a visual picture. Use knowledge learned from your Essential Knowledge Sheet to create mind maps. Make sure to use colours and images and keep writing to a minimum. This technique embeds essential knowledge into your long-term memory.

3. Flash Cards

Use your Essential Knowledge Sheets to create flash cards. Write the question/key term on one side and the answer/definition on the other. Most importantly you need to quiz yourself on each question/key term until you can remember them all correctly.

4. Revision Clock

Start by drawing a basic clock face. Break your Essential Knowledge Sheet into 12 sub-categories. Make notes from your Essential Knowledge Sheet in each section of the revision clock. Your brain will retain more information if you include images as well as key words and definitions. Read and Revise each section for 5 minutes, turn the clock over and then try to write out as much information as you can from one of the 12 sections on the revision clock. Repeat the process until you are confident in your learning of the essential knowledge on the revision clock.

Key Words

Definition

Composition

Composition is the way in which objects are put together or arranged. For example, you might paint a picture of a basket of apples and position the basket slightly off-centre on the canvas. That is a compositional choice. Perhaps you are painting a still life of objects on a table. The way you choose to arrange those objects in your final piece is the composition.

Layout

Layout refers to the arrangement of elements on a page - the specific position of the different elements. Good layout enhances the look of the particular object and the objects as a whole piece of design in order to create a strong composition.

Proportion

Proportion refers to the relationships between height, width and depth. How proportion is used will affect how realistic or stylised something seems. Proportion is how the sizes of different parts of a piece of Art or Design relate to each other.

Line

A line is an identifiable path created by a point moving in space. It is one-dimensional and can vary in width, direction and length. Line defines the edges of a form, these lines can be horizontal, vertical, diagonal, straight or curved thick or thin.

Tone

Tone refers to the lightness or darkness of the colours used. Artists use light and dark colours to create a mood or emotion. Tone can also be used to make something look three-dimensional, for example, on the face, darker tones around the chin, nose and eyes; lighter tones on forehead, nose and cheeks will help create depth.

Shading

Shading refers to the lines and marks used in drawings and paintings to show the different degrees of light and dark. By pressing on harder or lighter it is possible to create a range of tones.

Cross-Hatching

Cross-Hatching is a method of line drawing that shows light and shadows by drawing two or more sets of lines that cross one another.

Shape

Shape is an outline of an object created through lines, texture and colour. Shapes can play an important role in art. They help to create complex drawings and paintings, affect composition, and contribute to the balance within a work. Shape is a two-dimensional area.

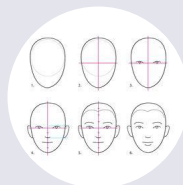
Examples



Composition



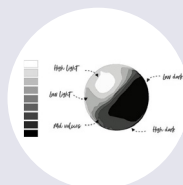
Layout



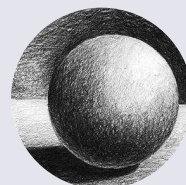
Proportion



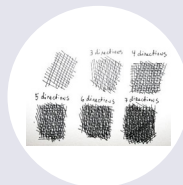
Line



Tone



Shading



Cross-Hatching



Shape

During the project you will be introduced to new terminology you may not understand straight away.

The purpose of the Essential Knowledge Sheet is to allow you to clarify any terminology throughout the project.

	Keyword	Definition	Support Question
3A	User Guide	A user guide is a set of instructions which are followed to achieve an end goal.	Can you give 3 examples of items that would require a user guide? 1. Phone 2. Washing Machine 3. TV
6B	Operators	Operators are the symbols used in online equations in MS Excel. These include + - / *.	Write a formula to divide D2 by A1 =D2/A1
6B	House Style	House style means the way a product is presented, thinking about colours and styles.	What aspects of design come under the term house style? Background colour Colours of text Style of text Font of text
7A	Keyword Operators	These are used in MS Excel to write an equation to find the maximum, minimum, average and sum of cells.	Write a formula to add up cells B2 to C14 =sum(B2:C14)
7B	Boolean Search	This allows you to narrow an internet search down by using keywords AND, NOT and OR. Search words must be placed in "speech marks".	What keywords are used in a Boolean Search? AND NOT OR
9A	Date	This is to indicate the day, month and year in a letter.	Where should the date be placed in a letter? This is placed on the left side of the page above the person the letter is addressed too.
10B	Email Subject	This gives the receiver of the email information what the email content will be about.	Why is an email subject important? Gives information about the email content without opening the email.

What do I do in Microsoft Excel?



Merges cells



Add borders around cells



Changes the number in the cell to a currency



Creates a graph



Changes the cells colour

What do I do in Microsoft Word?



Adds an up to date and time



Changes the colour of the text



Centres the text



Changes the case (upper and lower case)



Adds a table

12B - Research Activity

Using your independent research skills, you are to complete the table below finding definitions for the types of cyberbullying. The first one has been done for you as an example.

Type	Definition
Flaming	Online fights involving angry and rude comments that take place through emails, instant messaging or chat rooms.
Denigration	Putting mean online messages through email, instant messaging, chat rooms, or websites set up to make fun of someone.
Exclusion	Intentionally leaving someone out of a group such as instant messaging, friend sites, or other online group activities.
Outing	Sharing secrets about someone online including private information, pictures, and videos.
Trickery	Tricking someone into revealing personal information then sharing it with others.
Impersonation	Pretending to be someone else when sending or posting mean or false messages online.
Harassment	Repeatedly sending malicious messages to someone online.
Cyberstalking	Electronically "following" someone and sending them targeted messages with the intention of scaring, harming or intimidating them.

Consequences of Cyberbullying

Low confidence

Punishment at home and school

Damaging a persons reputation

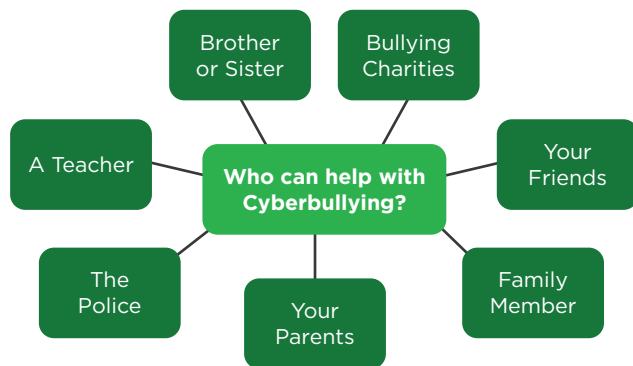
Suicide

Staying away from school

Drop in school progress

Feel vulnerable and powerless

Prison



Tools and Equipment

Cutting Mat	Self healing, Non-slip cutting surface. Used to prevent work surfaces getting damaged and scalpel blades becoming blunt.
Scalpel	A hardened steel blade used for cutting papers and boards. It can cut internal corners unlike scissors, however takes more skill.
Safety Ruler	This ruler has a raised edge for cutting along. This is for safety as it helps to prevent a sharp blade slipping and cutting the user.
Scissors	A cost effective and widely available cutting method. Products and prototypes can be quickly cut and tested.
Pencil	The pencil is probably the most commonly used drawing tool. The B range indicates blackness, the H range indicates hardness.



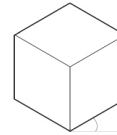
Isometric Drawing

Isometric projections are commonly used by engineers in technical drawings and illustrations and sometimes by architects. Early video games such as SimCity used isometric projection.

Line Weighting Enhances a drawing to make it appear more realistic.

Line Weighting An edge that is connected to two visible faces stays thin.

Line Weighting An edge that is connected to only one visible face becomes thick.



Angles are projected at 30°

30°

Name	Properties	Description	Applications	Advantages	Disadvantages
Copier Paper	<ul style="list-style-type: none"> 80 GSM. Thin. Lightweight. Inexpensive. 	<ul style="list-style-type: none"> Bright white paper. Smooth bleached uncoated surface. 	<ul style="list-style-type: none"> Writing. Sketching and drawing. Office and admin work. Photocopying. 	<ul style="list-style-type: none"> Takes colour well (highly printable). Good surface for pencils, pens and markers. Available in a range of colours. 	<ul style="list-style-type: none"> Can be prone to jamming printers.
Cartridge Paper	<ul style="list-style-type: none"> 120-150 GSM. Creamy white. Smooth but has a slightly textured surface. 	<ul style="list-style-type: none"> Completely opaque (no light passes through). Accepts most drawing media - paints, as well as pens and pencil. 	<ul style="list-style-type: none"> Painting. Mixed-media design and art work. 	<ul style="list-style-type: none"> Can be used with water colours without buckling (waviness caused by water). 	<ul style="list-style-type: none"> More expensive than copier paper.
Tracing Paper	<ul style="list-style-type: none"> 60-90 GSM. Strong. Translucent. 	<ul style="list-style-type: none"> Smooth surface texture. 	<ul style="list-style-type: none"> Making copies. Overlays. 	<ul style="list-style-type: none"> Translucency allows underneath image to be seen for copying. 	<ul style="list-style-type: none"> Has low absorbency (this means ink can smudge easily). More expensive than copier paper.
Solid White Board	<ul style="list-style-type: none"> Rigid board. Excellent printing surface. Smooth texture. 	<ul style="list-style-type: none"> Made from pure, bleached wood pulp. Bright white colour conveys quality. 	<ul style="list-style-type: none"> Book covers. Food packaging. 	<ul style="list-style-type: none"> Strong. Rigid. Accepts ink well. 	<ul style="list-style-type: none"> Can be expensive compared to other boards.

Adhesives

Glue Stick A quick method of bonding papers and boards. They are easy to apply, however they are not as strong as other glues, meaning edges can lift over time. Longer setting time means that materials can be moved before they are dry.

Double Sided Tape

Tapes keep the surface of the materials dry, this prevents any warping. Instant adhesion speeds up the time taken to assemble a model or product. No setting time means that care and attention is needed when assembling. There is also no risk of spilling the adhesive tape.

Properties of Papers and Boards

Flexibility The amount a material bends when a force is applied. If a paper doesn't flex it will jam printer mechanisms.

Printability The ability to accept ink onto its surface. If a paper is too absorbent, the printed image will not appear crisp, it will look blurred and blotchy.

Biodegradability The ability to accept ink onto its surface. If a paper is too absorbent, the printed image will not appear crisp, it will look blurred and blotchy.

Health & Safety

Design & Technology involves a lot of practical work, some of which involves significant risks. Therefore, it is vital to implement safe working practices to ensure a positive health and safety culture.

Safety in the Workshop

Rooms must be clean, tidy and in a safe condition. Workstations should be clean and clear of excess materials and tools. After use, tools and materials should be stored correctly, with blades and sharp edges protected. Floors should be clear of obstructions and trip hazards, such as bags and scrap off-cuts.

Clothing and Protective Equipment

Ensure you have no loose clothing; tie back long hair, remove loose jewellery; and tuck in ties and apron strings.

Hazardous materials: Wear an apron or overalls, goggles and the correct gloves.

Hot materials: Wear an apron and the correct gloves; a face shield is required for some jobs.

Dust: Wear a face mask and safety goggles. Ensure there is adequate extraction.

Machine Tools

Do not use machine tools with permission or training. **It is important to understand:**

- The design of the machine and the names of the main parts.
- How to set up the machine and use guards, running speeds and cutter settings.
- How to use the machine safely (learn where the emergency stop button is located).
- Keep machines and guards clean and in good condition, and never touch moving parts. If a machine has a dust extractor, ensure it is running when in use.

Hand Tools

Perform practical work standing up and ensure materials are held securely in place using the appropriate holding device, usually a vice or a clamp. Use the correct tools and technique for the job and materials used. Carry tools with their cutting edges pointing down, and return them to their racks when not in use.

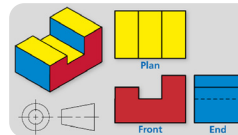
Properties

Timbers Different types of wood have varying properties (e.g. strength, hardness, durability) that make them suited for different purposes and commercial products. In addition to considering the properties of wood, designers must also consider how easy the materials are to manufacture.

Metals Metals have varying properties (e.g. strength, hardness, toughness, malleability) that make them suited for different purposes and commercial products. However, as well as considering the properties of the product it is also important to consider cost, availability and the environment.

Working Drawings (Orthographic Projection)

Orthographic projection is used to depict 3D objects as a set of 2D drawings. It shows the front view, plan view and end view drawn to scale, and measurements are given in millimetres. A third angle orthographic projection is shown below:

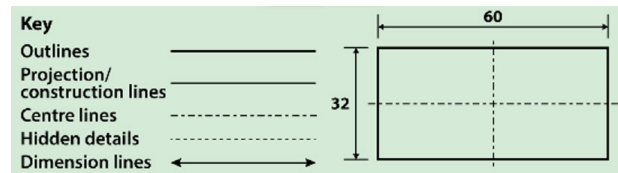


The plan view is drawn at the top, the front view is directly below this and the end view is positioned next to the front view.

Orthographic drawings are often used in manufacturing because they provide detailed information about the design.

Orthographic Drawing Conventions

For clarity, lines and dimensions must conform to British Standards.



Timbers, Metals & Polymers: Shaping & Forming

Wood, metals and polymers can be shaped and formed through cutting, abrasion and addition using a variety of tools, equipment and processes.

Cutting - Wood, metals and polymers can be cut to size with a variety of tools.



Rip Saw/Cross-Cut Saw

Rip saws are used to cut parallel to the grain, whereas cross-cut saws are used to cut against the grain. **Used to cut wood.**



Tenon Saw

Cuts accurate straight lines in small pieces of wood and provides a smooth cut. **Used to cut wood.**



Hacksaw

Has a hard, high-carbon steel blade so it can cut through metal; also available in a junior size for smaller cuts. **Used to cut metal and plastic.**



Coping Saw

Can cut intricate curves in thin materials but is difficult to control; has a blade that can snap easily. **Used to cut wood and plastic.**

When cutting materials, follow the steps outlined below.

- 1: Secure the material with a clamp, or by placing it in a vice to prevent it from moving while the material is being cut.
- 2: Make a mark in the material you want to cut by dragging the saw backwards a few times; this will provide you with a guide to start sawing.
- 3: Use the full length of the blade when sawing, and don't press down too hard. Let the blade do the work!
- 4: When coming to the end of the cut, support the end piece to stop it from falling off and spoiling the cut.



Chiselling

Chisels are used to cut or shape wood (special types are also used to cut or shape stone and metal). They are long-bladed, bevel-edged hand tools that are struck with a hammer or mallet to remove material. Chiselling involves forcing the blade into the target material to carve or cut it.

Safety tip: When chiselling, ensure that the blade is sharp and that the wood is securely held in place.

Planing, Sanding & Filing

Materials can be shaped through planing, filing and sanding.



Planing

Planing is used to shape and smooth material (usually wood). It involves shaving off thin layers of the material until the desired shape and feel are achieved.

Manual hand planers and electric planers are available. Electric planers are quick and require much less effort than manual hand planers, but they are not as accurate.



Sanding

Sanding involves rubbing an abrasive paper against the surface of the material to shape and smooth it. It can be performed by hand or using machines.

Sandpaper is available in different grades. Coarse paper is ideal for heavy sanding and stripping. Conversely, extremely fine sandpaper is used for smoothing a surface and removing small imperfections.

Different versions, such as wet and dry paper, are also available for different materials. This type of sandpaper is ideal for removing paint from painted metal and wood.



Belt Sander

This is a powerful machine used to smooth wood, metals and plastics more quickly and effectively than hand sanding. It contains a motor that drives a pair of drums on which a belt of abrasive paper is held.



Disc Sander

This is a machine that has a powered disc of abrasive paper that is spun at high speed. It smooths surfaces and removes old finishes (e.g. paint) when wood, metals or plastics are pressed up against it.

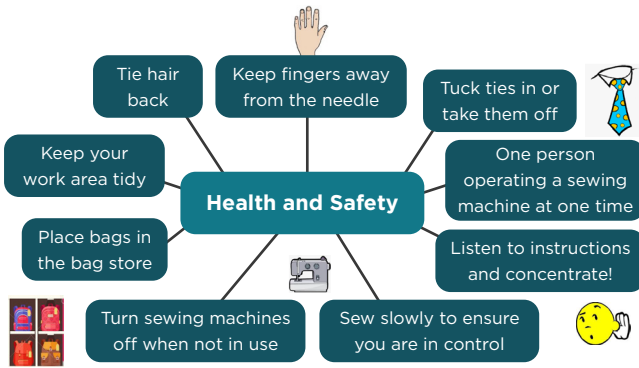
Safety tip: Sanders create a lot of dust, so dust extractors must be switched on to reduce the risk of fire and inhalation. Goggles must also be worn to protect the eyes, and fingers should be kept away from abrasive materials on power sanders.



Filing

Files have a serrated (toothed) surface so when they are rubbed over a material, some of the target material is removed. They can be used on a variety of materials and are available in different forms.

Files with larger teeth remove more material than those with smaller teeth, which are better suited for smoothing.



The Design & Manufacturing Specifications

The main purpose of developing a new product is to solve a problem, thus satisfying a want or need. To ensure a new product is capable of this, it must go through a series of stages.

Design Brief

Once a problem or an idea has been identified, a design brief needs to be put together. This is a statement of intent that addresses how the product will solve the problem and satisfy a want or need. It also acts as a point of reference for the client and designer.

The design brief will usually contain a description of:

- Budget.
- What the product should do (function).
- Target market.
- How the product should look (aesthetics).
- Timescale.
- Why the product is needed.

The design brief can be as simple or as complex as the client wishes. However, the best design briefs have plenty of detail to inform and guide the design process. At this stage, the important thing is to outline what is needed rather than how the item will be produced.

Design Specification

The design specification is shaped through research and product analysis. It expands upon the design brief with specific details and ensures that the product meets its requirements.

The specification document should answer the following questions:

- How will the product work?
- What materials will be used?
- How will the design be produced?
- How much will it cost to produce?
- What are the safety requirements?

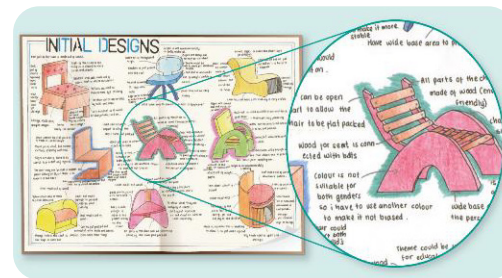
Having measurable specifications, such as weight and size dimensions, allows the product to be tested against the outlined requirements throughout the design process.

Annotated Drawings

Annotations are used to describe, explain or specify certain aspects of a design. For example, labels can be added to show sizes, materials, processes, weights and tolerances.




Annotations show good use of planning, decision-making and development in the design process.

Annotations can communicate in simple terms the designer's view about a certain aspect of the design. They can also be used to note how the design fulfils criteria within the specification.



Natural Fibres

Natural fibres come from biological sources (plants and animals). They are renewable and biodegradable.

Name	Image	Properties	Uses
Cotton Sourced from the cotton plant.		Strong, highly absorbent and cool to wear in hot weather. It is also easy to dye and wash. However, it creases easily, can shrink and is flammable.	Clothing, upholstery and towels.
Wool Sourced from animal fleece (mainly sheep).		Soft, warm and absorbent. It is also crease-resistant and has low flammability. However, it can shrink and takes a long time to dry.	Jumpers, rugs, blankets, coats, carpets.
Silk Sourced from silkworm cocoons.		Lightweight, smooth and soft. It has a lustre due to its fibre's triangular structure. However, it is expensive, weak when wet and creases easily.	Dresses, ties, soft furnishings and upholstery.

Synthetic Fibres

Synthetic fibres are polymers manufactured from chemical sources or fossil fuels. Therefore, most synthetic fibres are not sustainable or biodegradable.

Name	Image	Properties	Uses
Polyester		Strong and durable with low flammability. It is also non-absorbent and resistant to creases and biological damage. However, it is not very warm.	Sportswear, raincoats, bedsheets, rope, bedding.
Polyamide (nylon)		Lightweight but strong and hard-wearing. It is also crease-resistant, warm and non-absorbent. However, it is easily damaged by sunlight.	Ropes, sportswear, tights, swimwear.
Elastane (Lycra®)		Smooth, strong and very stretchy (elastic). It keeps its shape well and is crease resistant. However, it is highly flammable.	Sportswear, swimwear, leggings, underwear.

Cutting and Shearing

There are a range of tools available for cutting and shearing fabrics.



Fabric Shears

Also known as dressmaking scissors, these have long, sharp blades to cut fabric quickly and neatly.



Pinking Shears

These have serrated blades that are used to cut a zigzag edge into certain fabrics to stop them from fraying.



Embroidery Scissors

These have short, sharp blades that are suited to delicate work such as cutting threads. The blades are slightly curved to prevent them from piercing the fabric.



Seam Rippers

These have a small, forked blade that is used to unpick seams. The prongs help to grip tight threads so that the blade can cut them.

Teamwork means enjoying working together

What makes an excellent freeze frame?
(levels, stillness, focus, expression, contact, dynamics, shapes)

Techniques
Angel Devil
Pause Play
Pause
Multi Role
Choral Speech

Being Creative

What kind of character is Big Bad Bun?

Games, trust and team building activities

Techniques
Shared narration
Devising
Line learning

Playing a character
Moving/thinking in character.
Reactions.
Relationships

Line learning

Big Bad Bun Essential Vocabulary

Actor	Person on stage performing.
Character	The person in the story the actor pretends to be – e.g. Hermione is a heroic character in Harry Potter.
Characterisation	To pretend to be another personality, person using acting skill, insight, and creativity. Modern actors often play several characters in the same play.
Creative Skills	A complex and brilliant set of skills mixing intelligence and imagination with other people and tasks.
Devising	Making up a scene or story with others.
Expressing emotions	How actors show specific emotions using body, face and movement. Everyone expresses a huge range of emotions.
Freeze Frames	A still image of a point in the story, a character or location made of the performers in interesting shapes.
Multi-role	The actor plays more than one character, or narrator. Actors can also play elements of a picture or objects/ moods.
Rehearsal Skills	Where actors use time to develop, explore and improve their scene. They might practice, try things, add detail, change parts, memorise work, and improve their vocal and movement skills.
Actions and Reactions	Action – what one character does. Reaction – how another responds.
Story Theatre	Non-naturalistic, very physical theatre using the whole team, choral speech, actions, comedy and movement to tell a story.

Teamwork Skills	Working as a company with communication, creative and fantastic group skills awareness as a team.
Shared Narration and Choral Speech	Speaking in unison with accuracy and expression.
Unison	Moving or talking together in a synchronised way.
Non-Verbal Communication	Everything we convey through movement, stillness, gesture and expression.
Transitions	The sections linking freezes. Ideally these are in unison, quick and creative.
Angel Devil	A technique to show a character's internal conflict.
Pause-Play-Pause	A technique to bring a moment to life between freeze frames.



Actors and characters

Shakespearean rom-com: Midsummer Night's Dream

- Love
- Mischief
- Magic

The Tragedy of Macbeth

- Greed
- Ambition
- Betrayal
- Love

How can actors convey complex emotions?

Rehearsal Skills
Physical theatre
Actions
Interpretation

Audience understanding

Non verbal communication

Transitions between ensemble images

Performance skills

- Line security
- Literacy
- Emotions
- Characters
- Relationships

Midsummer Night's Dream Essential Vocabulary

Line Learning	A collection of strategies we use to actively learn lines with repetition, social learning and home learning.
Themes	The central idea or message explored by a play e.g. Big Bad Bun explores choices and consequences.
Romantic Comedy	A rom-com explores the search for love as a series of comic problems that need to be solved (MND/Love, Actually).
Interpretation	How individuals see a character or story. For example, how David Walliams plays Bottom is different to how Pearce Quigley does!
Relationships	How a character interacts with other characters, and the audience.
Physical Theatre	Theatre where movement is key at creating meaning.
Performance Skills	These skills include how actors use their voice, their bodies, their faces, their understanding and their energy and effort.
Literacy	How well an actor can 'read' scripts, stories and emotions.
Dialogue	Speech between two or more characters in a play.
Imagery	This is how actors create the images of love, fun and magic in the woods in Midsummer Night's Dream.

Macbeth Essential Vocabulary

Tragedy	A serious work with an unhappy ending.
Protagonist	Main character.
Antagonist	Adversary of the main character.
Anti-Hero	Main character who lacks convention heroic qualities.
Chorus	A chorus comments on the action. They narrate, argue, warn, agree, encourage, and talk to the audience. They can represent lots of points of view.
Inner Conflict	Struggle in the mind of a protagonist.
Exploring Character	Exercises that help us understand character better.
Supernatural	Forces beyond rational understanding – ghosts, witches, vampires.
Power	Ability to control events or people, status or leadership.
Audience	The people who watch the show.
Staging	How the stage is set out and what is on it.
Ensemble	The team of actors working closely together.
Symbols and Representation	Images that have deeper meanings in art and drama e.g. red represents blood and danger, a dove is a symbol of peace.

Plot Summary

1. Ebenezer Scrooge is at work in his counting house. Despite the Christmas Eve cold, he refuses to spend money on coals for the fire. Scrooge turns down his nephew's (Fred) invitation to his Christmas party and the request of two men who want money for charity.
2. Scrooge is visited by the ghost of his dead partner, Jacob Marley. He tells Scrooge that he is having to wander the earth in heavy chains because he has been greedy in life. He warns Scrooge that he will have to do the same if he doesn't change his ways. He tells Scrooge that three spirits will visit him during the next three nights. Scrooge falls asleep.
3. He wakes, and the Ghost of Christmas Past takes Scrooge into the past. Invisible to those he watches, Scrooge revisits his childhood school days, his apprenticeship with a jolly merchant named Fezziwig, and his engagement to Belle. She leaves Scrooge as he loves money too much to love another human being. Scrooge sheds tears of regret before being returned to his bed.
4. The Ghost of Christmas Present shows Scrooge Christmas as it will happen that year. Scrooge watches the Cratchit family eat a tiny meal in their little home. He sees Bob Cratchit's crippled son, Tiny Tim, whose kindness and humility warm Scrooge's heart. The spectre shows Scrooge his nephew's Christmas party. Scrooge asks the spirit to stay until the very end. As the end of the day approaches, the ghost shows Scrooge two starved children, Ignorance and Want. He vanishes as Scrooge notices a dark, hooded figure coming.
5. The Ghost of Christmas Yet to Come takes Scrooge through a sequence of scenes linked to an unnamed man's death. Scrooge is keen to learn the lesson. He begs to know the name of the dead man. He finds himself in a churchyard with the spirit pointing to a grave. Scrooge looks at the headstone and is shocked to read his own name. He is desperate to change his fate and promises to change his ways. He suddenly finds himself safely tucked in his bed.
6. Scrooge rushes out onto the street hoping to share his new-found Christmas spirit. He sends a turkey to the Cratchit house and goes to Fred's party. As the years go by, he continues to celebrate Christmas with all his heart. He treats Tiny Tim as if he were his own child, gives gifts for the poor and is kind, generous and warm.

Key Themes

- Greed
- Poverty & Suffering
- Class
- Isolation
- Family
- Guilt
- Redemption
- Social Responsibility
- The supernatural

Key Quotes

"Oh! But he was a tight-fisted hand at the grindstone, Scrooge...a squeezing, wrenching, grasping, scraping, clutching, covetous old sinner! Hard and sharp as flint, from which no steel had ever struck out generous fire; secret, and self-contained, and solitary as an oyster."

"He carried his own low temperature always about with him; he iced his office in the dog-days; and didn't thaw it one degree at Christmas."

"Humbug"

"Darkness is cheap, and Scrooge liked it."

"I am as giddy as a drunken man. A merry Christmas to everybody!"

Key Characters

Ebenezer Scrooge – A selfish businessman who transforms into a charitable philanthropist.

Fred – Scrooge's nephew whose party invitation he declines.

Jacob Marley – Scrooge's dead partner who returns as a ghost to warn Scrooge to change his ways.

Bob Cratchit – Scrooge's clerk who doesn't have much money. He loves his family and is shown to be happy and morally upright.

Tiny Tim – Bob's ill son whose story plays a part in inspiring Scrooge's transformation.

Mrs. Cratchit – Bob's wife.

The Ghost of Christmas Past – A strange combination of young and old, wearing white robes and looking like a candle.

The Ghost of Christmas Present – A portly, jovial gentleman surrounded by a warm glow. He brings joy to the neediest townsfolk.

The Ghost of Christmas Yet to Come – A robed and hooded spirit who confronts Scrooge with his own tombstone.

Fezziwig – The man Scrooge apprenticed under and who is the antithesis to Scrooge.

Belle – A woman who Scrooge was in love with who left him due to his greed.

Fan – Scrooge's sister.

Analytical Language

Dickens presents Scrooge as...

The use of [insert technique] suggests/implies...

This is effective because...

This creates the effect of...

This creates a sense of...

During the 19th century, life was...

Perhaps Dickens was trying to convey the message that...

This links to the theme of [insert theme] because...

The theme of [insert theme] is explored through...

Historical Context

In the 19th century there was a **huge increase in population**; 3 times more people lived in Great Britain at the end of the century than at the beginning.

Lack of employment led to exploitation of the workers - low wages, seasonal work, and long hours, etc.

Child labour - children were forced to work so they could contribute to the family income. Work was dangerous - long hours & unsafe working conditions. Jobs included: chimney sweeps, errand boys, working down the coal mines, selling matches or flowers, retrieving equipment from underneath dangerous machinery in factories, to name a few.

Slum housing and overcrowding - meant unsanitary living conditions so disease was rife.

Street children - children were either thrown out of their homes or they ran away due to cruel treatment and therefore ended up living on the streets. In 1848, a report suggested that over 30,000 children were homeless in London.

Lack of healthcare and welfare - mortality rates were high due to lack of medical care for the poorer members of society. Often people starved to death because there was no financial support if they couldn't work.

Workhouses - the Poor Law Amendment Act of 1834, ensured that no able-bodied person could get poor relief unless they went to live in special workhouses. The idea was that the poor were helped to support themselves. They had to work for their food and accommodation.

Christmas - a Christian celebration of the birth of Christ, though it also encompasses Greek, Roman and pagan traditions of giving gifts and feasting around the Winter Solstice. It is a time when families and friends come together to share food and exchange gifts.

Techniques

- Allegory
- The sublime
- Gothic features
- Motifs
- Analepsis
- Omniscient
- Morality tale
- Ambiguity
- Malthusian

Vocabulary

Gothic – Stoker uses conventions of Gothic fiction.

Pathetic fallacy – Stoker uses pathetic fallacy (in the forms of weather and setting) to reflect the emotion of the characters and text. It often creates a sense of foreboding.

Supernatural – The use of vampires and other forms of the supernatural in the text challenges and disturbs the audience.

Motif – The repeated motifs and symbols in the play represent key ideas.

Asylum – Dr Seward works at the local asylum.

Barbarism – Dracula's acts have been described as barbaric.

Gallant – Jonathan is gallant at the end of the play.

Patriarchal – Readers argue that the play highlights a patriarchal society.

Ferocious – Dracula is a ferocious beast.

Sublime – The landscapes in the play are sublime.

Genre – Dracula is written in the Gothic genre.

Settings:

- Transylvania
- England
- The Westenra house
- Whitby
- The shipwreck
- Castle Dracula
- Budapest

Form: A Play

All the **characters** names are in capital letters, to make them clear.

All **stage directions** are in brackets and italics, these tell us how the characters move, act or behave.

When an **ellipsis** is used (...) you must allow that break in the speech.

Use **punctuation** correctly when reading. If there is a question mark (?), read it in a questioning tone.

Symbolism: The use of signs or objects to represent something else.

Dialogue: Speech or conversation between characters.

Context:

Bram Stoker was born in Dublin, Ireland, in 1847. **Vampire legends** have been a part of popular folklore in many parts of the world since ancient times. Throughout the Middle Ages and even into the modern era, reports of **corpses** rising from the dead with supernatural powers achieved widespread credence. The Dracula family is based on a **real** fifteenth-century family. Its most famous member **Vlad the Impaler**, was a brilliant and notoriously savage general who impaled his enemies on long spikes. Stoker uses conventions of **Gothic** fiction, a genre that was extremely popular in the **early nineteenth century**. Gothic fiction traditionally includes elements such as **gloomy castles**, **sublime landscapes**, and **innocent maidens** threatened by **ineffable evil**. Stoker modernises this tradition in his novel, however, moving from the conventional setting of Dracula's **ruined castle** into the bustle of modern England.

Plot

The play tells the story of (vampire) Dracula's attempt to move from Transylvania to England so that he may find new blood.

Jonathan Harker, a young English lawyer, travels to **Castle Dracula** in the Eastern European country of **Transylvania** to conclude a real estate transaction with a nobleman named Count Dracula.

As Jonathan travels the local people warn him about his **Castle Dracula**, giving him charms against evil and uttering strange words that Harker later translates into "**vampire**". **Harker** finds that the elderly Dracula is a well educated and hospitable gentleman. After only a few days, however, Harker realises that he is effectively a **prisoner** in the castle .

Meanwhile, in **England**, Harker's fiancée, **Mina Murray**, writes to her friend Lucy Westenra. Lucy has received marriage proposals from three men—Dr. John Seward, Arthur Holmwood, and an American named Quincey Morris. **Lucy accepts Holmwood's proposal**. **Mina** visits Lucy in the town of **Whitby**. A ship is wrecked on the shore near the town with all its crew missing and its captain dead. The only sign of life aboard is a **large dog** that runs ashore and disappears into the countryside. We think the dog might be Dracula in **animal form**.

One night, Mina finds sees a dark figure with **red eyes** bending over Lucy. Lucy becomes pale and ill, and she has two red marks at her throat and suffers from a terrible fever. One night a wolf breaks into the Westenra house. The shock gives Lucy's mother a fatal heart attack and the wolf attacks Lucy, killing her. After Lucy's death, Van Helsing leads Holmwood, Seward, and Quincey to her tomb. Van Helsing convinces the men that Lucy belongs to the "Un-Dead"—she has been **transformed into a vampire like Dracula**. They see Lucy attacking a child. Holmwood plunges a **stake through her heart** to destroy her. Mina is **attacked by Dracula** and begins the slow change into a vampire. Eventually they catch up with Dracula, Jonathan and Quincey manage to **destroy** him.

Key Characters

Dracula – the antagonist and titular character. He is a vampire.

Jonathan Harker - a young lawyer who travels to meet Dracula in Transylvania

Dr. John Seward - A young doctor who works at the local asylum

Arthur Holmwood – one of the men who proposes to Lucy
Quincey Morris – An American who proposes to Lucy

Lucy Westenra – Mina's friend who is attacked by Dracula and turned into a vampire.

Mina Murray (later Harker) – The fiancé of Jonathan, she is attacked by Dracula.

Renfield - A patient from the asylum.

Van Helsing - A professor. Dr John Seward is his student.



Descriptive Techniques

Adjective	A describing word.
Adverb	A word that describes an action (verb).
Simile	Comparing something to something else using 'like' or 'as'.
Metaphor	Saying something IS something else.
Personification	Giving non-human objects human characteristics.
Imagery	Where the writer's words help to give the reader a picture in their head.
5 Senses	Describing what you can smell, see, hear, touch/feel, taste.
Alliteration	Words which begin with the same letter.

Usage

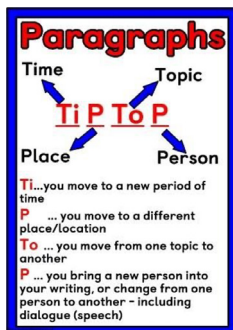
The eerie churchyard...
Silently , he moved...
He crept along the path like a shadow ...
We entered the upstairs room and the door slammed, leaving us trapped in the concrete coffin .
The tree branches grabbed us...
The gravestones stood out against the vibrant backdrop of delicate flowers ...
My fingers brushed the dusty ledge...
Ghastly groans grew in intensity...

Key Words Definition

Pallid	Pale in colour, typically related to an ill/dead person's colour.
Fearful	Feeling, or showing, fear. Showing you're scared.
Macabre	Something strange/disturbing - connected with death.
Ominous	Suggestion that something unpleasant will happen.
Trepidation	Feeling of fear that something bad will happen.
Shrouded	A body wrapped in a cloth for burial or hidden from view.
Eerily	Strange or frightening manner.
Ancient	Very old.



Aim to use a varied range of punctuation in your writing: full stop, question mark, comma, exclamation mark, apostrophe, ellipsis, speech marks, hyphen, brackets, colon, semi-colon.



First Person

I, we, me, us, my/mine, our/ours

Second Person

You, your/yours

Third Person

He/his/him, she/her/hers, it/it's

Use the right pronouns for your chosen narrative. Always choose 1st or 3rd person for descriptive writing.

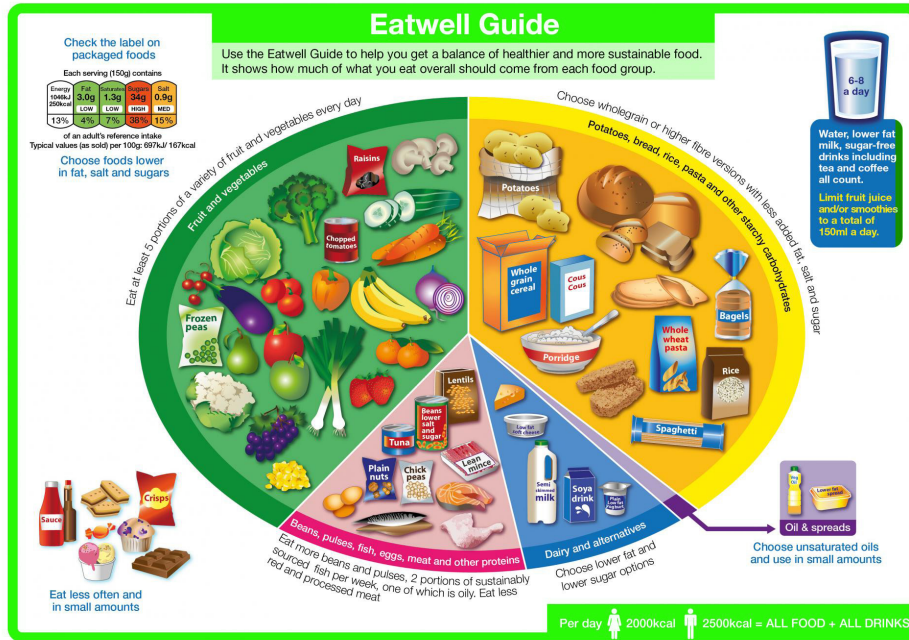
Soon we were hemmed in with trees, which in places arched right over the roadway till we passed as through a tunnel. And again, great frowning rocks guarded us boldly on either side. Though we were in shelter, we could hear the rising wind, for it moaned and whistled through the rocks, and the branches of the trees crashed together as we swept along. It grew colder and colder still, and fine, powdery snow began to fall, so that soon we and all around us were covered with a white blanket. The keen wind still carried the howling of the dogs, though this grew fainter as we went on our way. The baying of the wolves sounded nearer and nearer, as though they were closing round on us from every side. I grew dreadfully afraid, and the horses shared my fear. The driver, however, was not in the least disturbed. He kept turning his head to left and right, but I could not see anything through the darkness.

Highlight the devices used in the example text - use the techniques chart to help you.

Effective writing needs structure!

Use paragraphs to organise your ideas.

Use **TiPToP** to remind you when to begin a new one!



Source: Public Health England in association with the Welsh government, Food Standards Scotland and the Food Standards Agency in Northern Ireland

© Crown copyright 2016

Provenance

Seasonality

Time of year when the harvest or flavour of a food is naturally at its peak

Food Miles

Distance travelled by food commodities from producer to consumer - farm to fork

Buy Local

Buying food that has been farmed or produced in local area, region or country.

Useful Websites:

www.foodafactoflife.org.uk

www.bbc.com/food/techniques

www.ifst.org/lovefoodlovescience/resources

Knife Safety

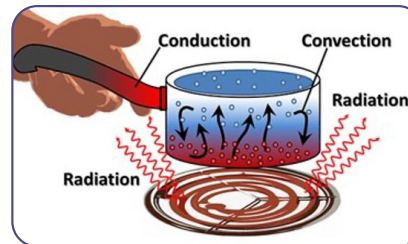
Bridge hold



Claw grip



Heat Transfer



Sensory Analysis

A way of evaluating food

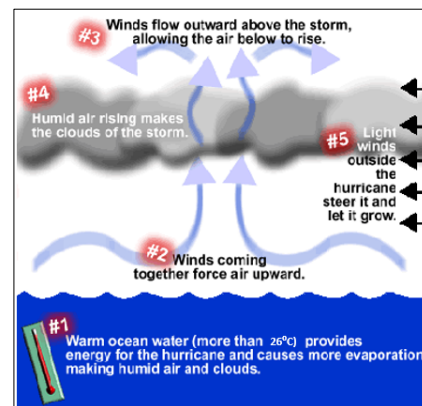
The appearance of the food
What it tastes like
What it feels like
What it smells like



Key Words

Weather	The state of the atmosphere at a particular place and time as regards heat, cloudiness, dryness, sunshine, wind, rain, etc.
Human effect	This is something impacting humans e.g. a house being destroyed or people dying.
Physical/ environmental effect	This is something that impacts the natural environment e.g. rivers being polluted or 10m high waves.
Tropical storm	Also known as hurricanes, typhoons etc. are large, swirling storms with wind speeds of 74 mph or higher.
Distribution	Distribution refers to the way something is spread out or arranged over a geographic area.
Connective	A word or phrase whose function is to link other parts of a sentence and create more complex sentences.
Equator	An imaginary line at 0° dividing the earth into the northern and southern hemispheres
Evaporation	The process of turning a liquid into gas e.g. water vapour.
Saffir-Simpson Scale	A scale of 1 to 5 based on a hurricane's sustained wind speed. (5 being the highest).
Storm surge	The rising of the sea as a result of wind and atmospheric pressure changes associated with a storm or hurricane.

How do tropical storms (hurricanes) form?



Hurricane Katrina Case Study

Human Effects

1800 dead.

Dead bodies left to rot in the streets.

\$108 billion worth of damage.

Louis Armstrong International Airport closed.

800,000 houses were destroyed.

Insurance companies have either raised the cost or stopped insuring homeowners in the area because of the high pay out costs.

Racial tensions were exposed as many of the victims were black African Americans.

Thousands of jobs disappeared due to the area being destroyed.

Environmental/Physical Effects

85% of New Orleans flooded.

11m high storm surge.

145mph winds.

Rivers and lakes were contaminated with sewage.

Flooding reached 6m high in places.

The lands that were lost were breeding grounds for marine mammals, brown pelicans, turtles and fish.

Hurricane Katrina was a category 4 storm.

The storm caused oil spills which resulted in over 26 million litres of oil being leaked.

Local Responses

33,500 people were rescued by the Coast Guard.

People searched for their loved ones among the flood waters and damaged buildings.

½ million people ordered to evacuate.

20,000 people were evacuated to the Superdome.

Regional/National Responses

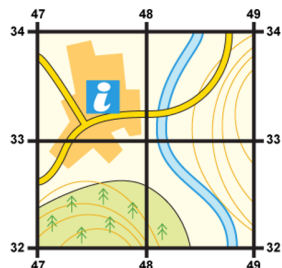
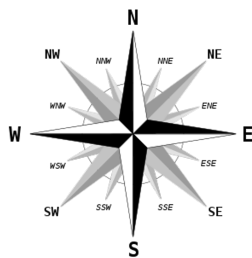
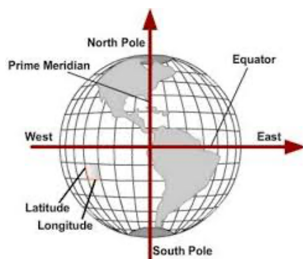
Spend \$20 billion on the levees to protect against a category 5.

60,000 people moved over 1,200km away and were still there one month after the storm.

FEMA paid for temporary hotel costs of 12,000 individuals.

58,000 of the national guard were activated to deal with aftermaths of the storm.

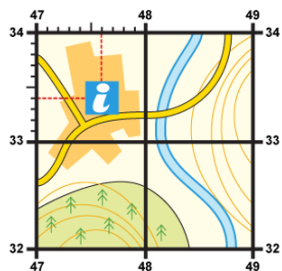




The tourist information office is in grid square 4733.

4 Figure Grid references: When you give a grid reference, always give the easting first: **“Along the corridor and up the stairs”**

1. Start at the left-hand side of the map and go east until you get to the bottom-left corner of the square you want. Write this number down.
2. Move north until you get to the bottom-left corner of the square you want. Look at the number of this grid line and add it to the two-digit number you already have. This is your four-figure grid reference.



The tourist information office is located at 476334.

6 Figure Grid references:

1. First, find the four-figure grid reference but leave a space after the first two digits.
2. Estimate or measure how many tenths across the grid square your symbol lies. Write this number after the first two digits.
3. Next, estimate how many tenths up the grid square your symbol lies. Write this number after the last two digits.
4. You now have a six figure grid reference.

Key Words/ Key Concepts/ Processes

Definition

Physical Geography

Is the study of the natural environment including processes and patterns in the natural environment like the atmosphere, oceans and different ecosystems.

Human Geography

Is the geography that deals with the world, people and their concerns, cultures and economies.

Continents

There are 7 continents. These are: Europe, South America, North America, Asia, Antarctica, Australasia, Africa.

Latitude

Lines of latitude measure north-south position between the poles. The equator is defined as 0°, the North Pole is 90° north, and the South Pole is 90° south of the equator.

Longitude

Imaginary lines going from the North pole to the South pole.

Triangular Pillars/ Trig Points

Are triangles that show height in metres above sea level.

Spot Heights

Are Black/Brown dots that show exact height above sea level in metres.

Contour Lines

Are brown lines that join places of the same elevation (height above sea level)

A Field Sketch - SNOT

Scale, Notes, Orientation, Title.

Scale

Is used to measure distance on a map. The most common Ordnance Survey maps use a 1:25,000 or a 1:50,000 scale.

The Ordnance Survey (OS)

The OS are the national mapping agency for Great Britain.

Northings and Eastings

A grid of squares helps the map-reader to locate a place. The vertical lines are called eastings. They are numbered - the numbers increase to the east. The horizontal lines are called northings as the numbers increase in a northerly direction.

Key Words/ Key Concepts/ Processes

Tourism in the UK? Why stay in the UK?

Easy travel, more affordable, may have a fear of flying.

Different types of holiday

Beach, skiing, horse riding, safari, cruise, city break etc.

National Parks

Are areas protected by the government, people live and work in National parks.

The Country Code

The concept used to protect our countryside e.g. keep dogs on a lead, shut gates behind you.

Tourism Advantages

Creates jobs, improves opportunities in the local area, supports economic development.

Tourism Disadvantages

Can create litter, loss of culture in the area, creates environmental impacts.

Sustainable Tourism

Meeting the need of the present without reducing the ability of future generation to meet their own needs. It is good for the environment, good for local people and is long lasting.

Motorways

A road designed for fast traffic, with relatively few places for joining or leaving.

Conurbation

An extended urban area, typically consisting of several towns merging with a central city e.g. Manchester.

Recreation

An activity done for enjoyment e.g. walking, horse riding.

Range

Difference between the highest and lowest value.

Mean

The average - add up all the data set and divide by the number of data.

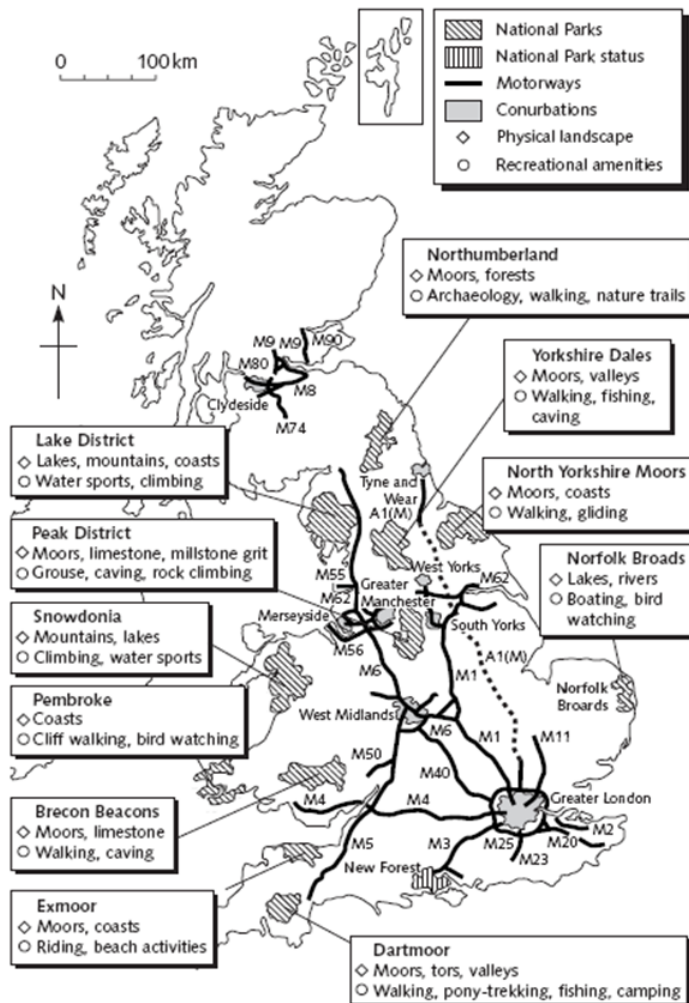
Mode

The most common piece of data - the one that occurs the most

Median

The middle value - Put the data sets in order and identify the middle value.

Definition

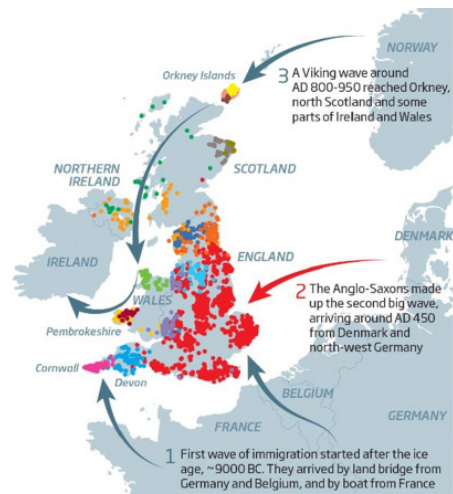


Key Dates and Events You Should Know

800,000 BC	First humans arrive on the land we now called Britain.
500 BC	Celts arrived from Europe.
AD 43-410	Romans arrive and rule for hundreds of years.
AD 450	Arrival of the Angles and Saxons from Denmark and Northern Germany.
AD 800	First Viking raids begin. In 1016, a Viking, Canute, becomes king of England.
1066	Normans from Northern France invade and conquer England. First Jews arrive from Europe.
1290	Jews are pushed out of England and are not allowed to return until 1656.
1572	Huguenots arrive from France after they are persecuted in France.
1620	Puritans arrived in the USA from England after they faced religious persecution.
1845-52	A famine began in Ireland which led to many migrating into other parts of the UK.
1948	SS Empire Windrush arrives from the West Indies with migrants from Jamaica, Trinidad and Tobago as a response to shortages of workers in the UK.
2020	Net migration is just over 250,000.

Objective

To be able to describe some of the main groups of migrants of Britain, explain why they came and give some examples of the impact they have had.



Map Showing Early Invasions and Settlers in Britain

Key Historical Skills Covered in this Topic

Chronology

Ordering historical events.

Inference

Making conclusions from historical sources.

Interpretation

Identifying and comparing views on the past.

Explanation

Sharing your understanding using historical knowledge.

Key Words

Migration	Groups of people leaving where they were born to live in another part of the world.
Invade	A military take over of another country.
Conquer	Successfully taking over another country, usually by force.
Settlers	Individuals who arrive in a new country and decide to stay.
Political	The way a country is run and organised, including how laws are made.
Social	Anything to do with the daily life of people, how they live, what they believe in and how they communicate.
Economic	Anything to do with money, this includes trade and business.

Home Learning Project - Norman Motte and Bailey Castle

This will be an independent research project focusing on the features, use and impact of these structures. You will be required to use a range of evidence to complete this work.

This will be set by your class teacher on MS Teams.

There are **two assessments** within this topic.

Assessment 1 will focus on:

- Knowledge questions retrieving key skills e.g. centuries, keywords, events studied.
- The impact of Roman invasion.
- Why groups up to 1066 came to Britain.

Assessment 2 will focus on:

- Knowledge questions retrieving key skills e.g. centuries, keywords, events studied.
- The impact of the Norman invasion.
- Features of castles (linked to your home learning project).

Overview: Why is Britain a nation of migrants?

Britain is an island that has always been a target for migration. For hundreds of thousands of years there were probably no humans in Britain at all, although there were animals—at that time Britain was still connected to Europe by a piece of land. Archaeologists believe that humans began arriving in Britain about half a million years ago when hunter gatherers arrived looking for food.

This type of migration continued with people moving backwards and forwards until about 2500BC when people came to use the tin reserves found in parts of the island to make bronze tools and weapons. Around 800BC people in Britain began to understand how to make Iron. These were called the Iron Age.

Over the next thousand years other tribes migrated to Britain, some peacefully and others with armies. The Celts arrived in 500BC from central Europe. These tribes fought each other for land and they built forts to protect the land they eventually claimed.

The Romans arrived from Italy in AD43 and over the next 400 years they conquered the tribes living in Britain and built towns and roads. They also had longer term effects on British language, food and religion.

After the Romans were forced to remove their army from Britain due to problems in their wider empire new migrants began to arrive from modern day Denmark and German. These groups were known as Angles, Saxons and Jutes. Today we call this group of migrants and settlers Anglo-Saxons. They gave our country its name 'Angle Land' which later has become England. These groups were mainly farmers looking for more land to grow their crops and raise animals. They brought new languages and religious ideas which over time mixed with earlier ideas.

In the late eighth century Vikings invaded the north of England raiding the area for its treasures. Over time though they saw that Britain had land and resources which could make them rich and so many settled and stayed in the area.

These early migrants were followed by the Normans in 1066 and more recently Jewish communities, the Huguenots, West Indian migration and groups of communities from southern and eastern Europe. As a result of this regular migration of peoples into and out of the country Britain is a mixture of languages, religions, culture and ideas.

What do I need to be able to do?

You should be able to:

- Understand properties of addition and subtraction.
- Understand properties of multiplication and division.
- Use formal methods of addition and subtraction for integers.
- Use formal methods of multiplication and division for integers.
- Add and subtract directed numbers.
- Multiply and divide directed numbers.
- Understand and use order of operations with positive and negative integers.

Addition

Addition is **commutative**.

$$2 + 4 = 4 + 2$$

The order of addition doesn't change the result.

Formal Written Method

H	T	U
3	4	2
+	1	4
9	4	9
<div style="display: flex; justify-content: space-between;"> 4 9 1 </div>		

Remember the place value for each column!

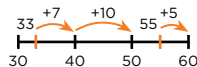
Addition is **associative**.

$$6 + (3 + 4) = (6 + 3) + 4$$

It doesn't matter how you group the numbers.

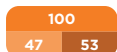
Models to Help with Addition

Number Lines



So we can say
 $33 + 7 + 10 + 5 = 55$
 or $33 + 22 = 55$

Bar Models



So we can say
 $47 + 53 = 100$

Part/Whole Diagrams



So we can say
 $26 + 50 = 76$

Key Words

- Commutative** Changing the order of operations does not change the result.
- Associative** When you add or multiply you can do so regardless of how the numbers are grouped.
- Inverse** The operation that undoes what was done by the previous operation.
- Subtract** Taking away one number from another.
- Negative** A value less than zero.
- Debit** Money that leaves a bank account.
- Credit** Money that goes into a bank account.
- Integer** A whole number.
- Operation** A mathematical process.

Subtraction

Subtraction is **not commutative or associative**.

$$12 - 8 \neq 8 - 12$$

When you subtract, the order must stay the same.

Formal Written Method

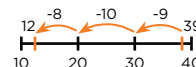
H	T	U
5	2	1
-	2	1
3	1	6

Remember 0 is a place holder!

2	0	8
-	0	0
2	0	4

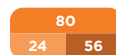
Models to Help with Addition

Number Lines



So we can say
 $39 - 9 - 10 - 8 = 12$
 or $9 - 27 = 12$

Bar Models



So we can say
 $80 - 24 = 56$ &
 $80 - 56 = 24$

Part/Whole Diagrams



So we can say
 $43 - 21 = 22$ &
 $43 - 22 = 21$

Written Methods for Multiplication

Long Multiplication

$$\begin{array}{r} 247 \\ \times 123 \\ \hline 741 \end{array}$$

Grid Method

X	200	40	7
3	600	120	21

$$600 + 120 + 21 = 741$$

Gelosia

2	4	7	X
0	6	2	1
7	4	1	

Repeated Addition

$$\begin{array}{r} \text{H} \quad \text{T} \quad \text{U} \\ 247 \\ + 247 \\ + 247 \\ \hline 741 \\ \hline 1 \quad 2 \end{array}$$

Written Methods for Division

Short Division

$$\begin{array}{r} 042 \\ 6 \overline{) 2512} \\ \underline{2} \\ 102 \\ 8 \overline{) 816} \end{array}$$

Short Division (with Remainders)

$$\begin{array}{r} 125.5 \\ 2 \overline{) 251.0} \end{array}$$

Continue after the decimal point! If you start to get a repeating decimal, stop.

Long Division

$$\begin{array}{r} 042 \\ 6 \overline{) 252} \\ \underline{2} \\ 012 \\ \underline{0} \\ 0 \end{array}$$

This method relies on you being comfortable with multiples of your divisor (in this case, 6!).

Order of Operations



Example 1

$$(4 \times 7) + 3$$

So we need to evaluate the brackets first; $4 \times 7 = 28$

This is now $28 + 3 = 31$

Example 2

$$(6 + 4 - 3)^2 \times 4$$

So we need to evaluate the brackets first and we work left to right; $6 + 4 - 3 = 7$

This is now $7^2 \times 4 = 49 \times 4 = 196$

Example 3

$$4 - 8 \times 2 + 12 \div 4$$

So first we do the multiplication/division left to right; $4 - 16 + 3$

Now we do the addition/subtraction from left to right: $-12 + 3 = -9$

Calculations with Directed Numbers

Addition

$$2 + -3$$

Remember; If I add a negative, I am adding something that will make it smaller, so it is the same as subtracting that number!

$$2 - 3 = -1$$

Generalisation: $++ = +$ $-- = +$

Subtraction

$$2 - -3$$

Remember; If I subtract a negative, I am taking away the amount that was making it smaller, so it is the same as adding that number!

$$2 + 3 = 5$$

Multiplication

$$2 \times -3$$

'2 lots of -3' = -6

$$-2 \times -3$$

Think of this as the negative of $2 \times -3 = 6$

Generalisation:



Division








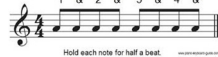


Remember that multiplication and division are inverse operations.

$$\begin{array}{l} \text{E.g.} \quad 6 \div -3 = -2 \\ \quad \quad -6 \div 2 = -3 \end{array}$$

Models to Help

It can be helpful to put calculations involving directed numbers into real life contexts. Think about temperature or bank accounts when unsure.










Symbol	Name	Value	How to Count
	Semibreve	4	<p>Counting Whole Notes Hold the note for four beats.</p>  <p>Count: 1 2 3 4</p>
	Minim	2	 <p>1 2 3 4 1 2 3 4</p>
	Crotchet	1	 <p>1 2 3 4 1 2 3 4</p>
	Quaver	$\frac{1}{2}$	<p>Counting Eighth Notes</p>  <p>Hold each note for half a beat.</p>
	Semiquaver	$\frac{1}{4}$	 <p>1 e & a 2 e & a 3 e & a 4 e & a</p>

Try tapping out some of these rhythms while you count:

8th Notes Example 1




Pitch	Visual Representation	Features	Description
Low Pitch		Bass, Cello, Tuba, Trombone use this clef.	This is the bass clef, sometimes called the F clef.
Low Pitch Notes	 	There is an easy way to remember the lines and spaces: Great Big Dogs Frighten Auntie. All Cows Eat Grass.	The bass clef is used to notate low pitch instruments.
High Pitch		Violin, clarinet, right hand piano.	This is the treble clef, sometimes called the G clef.
High Pitch Notes	 	There is an easy way to remember the lines and spaces: Every Green Bus Drives Fast. F A C E.	The treble clef is used to notate higher pitch instruments.
Low and High Voices		Peoples singing voices range from low to high. Male voices are lower, female voices are higher.	Soprano: Highest female voice. Alto: High female voice. Tenor: Mid-range male voice. Bass: Low male voice.

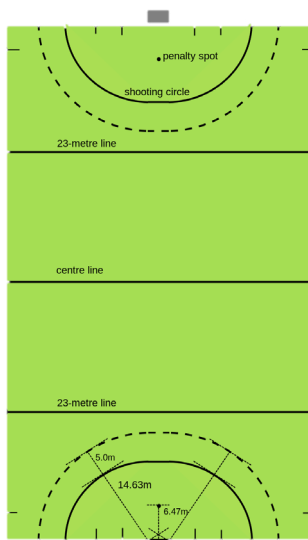
Self-Test Questions

- Which clef would a bass guitar use?
- Which is the highest pitch female voice?
- What does SATB stand for?
- Which clef does higher sounding notes use?
- A clarinet would use which clef?

Super Challenge Question

- Which clef would a piano use?

Pitch Markings



Key Rules/Fouls

Feet	The ball cannot make contact with the feet at any time.
Shooting Circle	You must be inside this area to shoot.
Non-Contact	Contact with another player cannot be made at any time.
Obstruction	Blocking the ball with your body from an opponent.
Back Stick	Only the flat side of the stick can be used to hit the ball.
Sticks	You cannot hit another players stick with your own.
High Stick	Stick cannot be above the hip if another player is around you.

Key Skills

Dribbling	Basic and Indian dribble.
Tackling	Block, jab and reverse.
Shooting	Hit, push, flick and slap.
Passing	Hit, push, flick and slap.
Jockeying	Pushing towards the line.
Receiving the Ball	Trapping and on the move.

Penalties Awarded

Free Hit	All players 5m away from the ball. Can be a pass of taken to yourself.
Penalty Corner	Awarded when the defence commits a foul in the shooting circle or purposefully hits the ball over the back line.
Penalty Stroke	Awarded when a foul is committed which would have prevented an almost certain goal.

Personal Skill Development

- Communication.
- Teamwork.

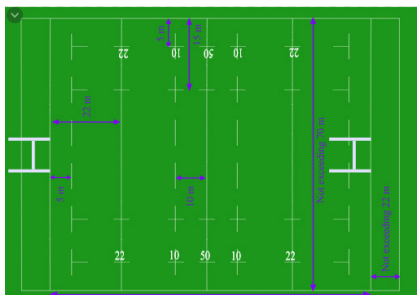
Theoretical Links

- Importance of a warm up and its stages.
- Importance of a cool down and its stages. Key muscles used and joint types.
- Fartlek training.
- Components of fitness required for successful performance.

Health Benefits

- Improves cardiovascular endurance.
- Improved co-ordination.

Pitch Markings



Key Rules

- The game is played between two teams of thirteen players each.
- The game lasts for 80 minutes, with two halves of 40 minutes.
- Each team is given six tackles for a chance to score.
- If a team doesn't score in this time then the ball is 'handed over' to the opposition.
- 4 points are awarded for a try, 2 for a conversion/penalty and 1 for a drop goal.
- The ball cannot be passed forwards.

Key Skills

- **Passing:** Able to pass to the left and the right.
- **Tackling:** Front, side, rear.
- **Kicking:** Defensive and attacking.
- **Playing the ball.**
- **Positional awareness.**
- **Scrum.**
- Playing to individual **players strengths** and **opponents weaknesses**.

Penalties Awarded For

- Tackling a player who isn't in possession of the ball.
- Tripping an opponent up.
- Hitting an opponent with arm or fist.
- Kicking the ball when your opponent is trying to pick it up.
- Dangerous play, such as tackling your opponent above their shoulders.
- Defenders not back in line with the referee (5 metres).

Personal Skill Development

- Communication.
- Teamwork.

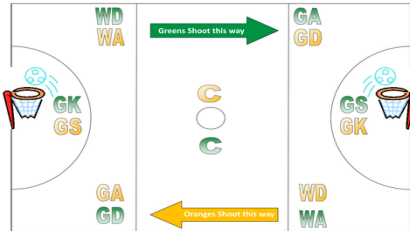
Theoretical Links

- Importance of a warm up/cool down.
- Different types of strength used and what training would be applicable to improving it.

Health Benefits

- Improves cardiovascular health.
- Promotes positive mental well being.

Pitch Markings



This shows the position on the court that each netball player must start at for every centre pass.

Key Rules/Fouls

Held Ball	You can hold the ball for a maximum of 3 seconds.
Contact	With another player cannot be made at anytime.
Feet	You cannot move with the ball.
Shooting Circle	The shooters must be fully in the semi-circle to shoot.
Positional Play	You must stick to your positions areas of play on court.
Obstruction	You cannot be less than 0.90m/3ft away from the player with the ball.
Centre Pass	Must be received in the centre third.

Personal Skill Development

- Communication.
- Teamwork.
- Spatial awareness.

Theoretical Links

- Short and long term effects of exercise on the body.
- Feedback.
- Nutrition for a netballer and other sports performers.

Penalties Awarded

Free Pass	For a player going out of their set playing areas/ centre pass not received in the centre third/ footwork.
Penalty Pass/Shot	Awarded for contact or obstruction. The ball is given to the opponent and the infringing player stands at their side until the pass is made. Within the D it becomes a penalty pass or shot.
Sideline/Backline Passes	Ball given to the team that did not throw it out of court.

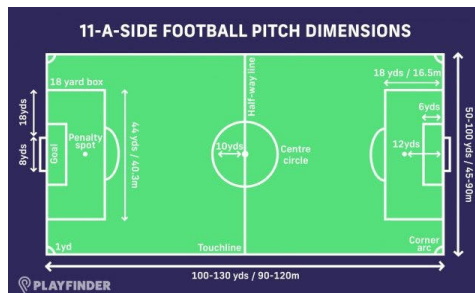
Key Skills

Footwork and Movement	One foot/two feet landing/pivoting.
Passing	Chest, shoulder, bounce, overhead.
Attacking Dodging Skills	Feint/single dodge and double dodge.
Signalling	Receiving the ball.
Marking a Player	Defending.
Interception	Gaining possession.
Shooting	Close/distance.
Rebounding	Attacking/defending.

Health Benefits

- Improves cardiovascular fitness.
- Improves agility.
- Improves balance.

Pitch Markings



Key Rules/Fouls

Handball	When a player other than the keeper handles the ball, or the keeper does outside of the area. Results in a free kick or a penalty depending on where this happens.
Goal Kick	Used to restart play if the ball is kicked out by the opposition beyond the goal line.
Offside	When an attacking player receives the ball from a member of their team when they are closer to the opposing team's goal than any of the opposition (except the keeper).
Throw-In	Used to restart play when the ball has gone out of play on the sides of the pitch.
Direct Free Kick	Awarded for a foul that takes place outside of the box.
Indirect Free Kick	A foul inside the box but is not a penalty.
Corner Kick	This is awarded when the defending team kicks the ball out behind their goal line.

Positions

Goalkeeper

There is only one goalkeeper on the field for each team. Their main role is to defend the goal and stop the other team from scoring goals. They can use their hands while they are in the goal area.

Defender

These players play near their goalkeeper to help defend their goal.

Midfielder

A player who plays between the forwards and the defenders. They sometimes help defend, sometimes they help attack, though they spend most of the time in the middle of the pitch.

Forward

An attacking player in a team. When a forward has the main role of scoring goals, he or she can be called a **striker**.

Key Skills

Passing

Short side foot/long driven and lofted passes using laces.

Dribbling

Instep and outstep (both feet).

Tackling

Block, interception and slide.

Shooting

Placement and power.

Control

Selection of surfaces.

Personal Skill Development

- Communication.
- Teamwork.

Theoretical Links

- Importance of a warm up and its stages.
- Importance of a cool down and its stages. Key muscles used and joint types.
- Fartlek training.

Health Benefits

- Improves cardiovascular endurance.
- Improved co-ordination.

Components of Fitness

Strength	The amount of force a muscle can exert against a resistance.
Cardiovascular Fitness	The ability of the heart, lungs and blood to transport Oxygen.
Muscular Endurance	The ability to use voluntary muscles repeatedly without tiring.
Flexibility	The range of movement at a joint.
Positional Play	You must stick to your positions areas of play on court.
Body Composition	The percentage of the body that is fat, muscle and bone.

Key Skills

Circuit Training	An interval way of training.
Fartlek Training (Speed Play)	Develops aerobic and anaerobic fitness.
Continuous Training	Develops Cardiovascular Fitness.
HIIT	Develops strength, speed and muscular endurance.
Fitness Testing	A way of gaining information about health and skill related fitness.

Personal Skill Development

- Mental resilience.
- Competitiveness (both individually & amongst others).
- Determination.
- Intrinsic motivation.

Key Rules

- Always complete a thorough warm up which includes a pulse raiser, skill based practice, mental preparation and stretching.
- After exercising complete a sufficient cool down which allow a gradual reduction in intensity and stretching.
- Footwear and Clothing should be appropriate to the activity being completed.
- Prepare appropriate hydration, for use during the sessions.
- Ensure the environment and the area you are using are safe, taking into consideration things such as; weather and the ground you are training on.

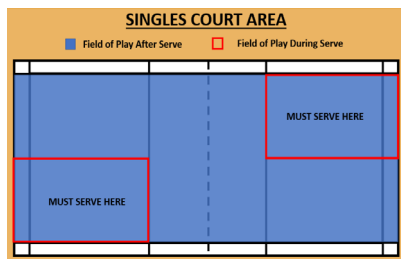
Theoretical Links

- Health, fitness & exercise definitions.
- Anatomy & physiology links.
- Types of training.
- Energy systems.
- Principles of training.

Health Benefits

- Cardiovascular fitness.
- Muscular strength/endurance.
- Improved mental health – including mood, concentration and self esteem.

Court Markings



Key Rules/Fouls

- A match consists of the best of 3 games of 21 points.
- Every time there is a serve – there is a point scored.
- The side winning a rally adds a point to its score.
- To score a point the shuttle must land on the opponents side inside the court.
- If the shuttle lands on the line, it is in.
- If the shuttle hits the net you play on even on a serve. If it lands in, it is a point.
- If the shuttle is hit outside of the court area, it is the opponents point.
- Serving must be hit in an upwards direction with an underarm hitting action.
- There are no second serves.

Personal Skill Development

- Sportsmanship.
- Intrinsic motivation.
- Resilience.

Serving - LORE

- At the beginning of the game (0-0) and when the server's score is even, the server serves from the right service court.
- When the server's score is odd, the server serves from the left service court.
- **Left Odd Right Even.**

Key Skills

Serving	Short/long, flick serve (forehand/backhand).
Overhead	Clear, drop (forehand and backhand).
Underarm	Clear, drive, drop (forehand/backhand).
Net Play	Any shots performed close to the net.
Smash	An aggressive offensive shot played to win the point by hitting the shuttle downwards at speed.

Theoretical Links

- Interval training.
- Energy systems.
- Components of fitness – power, agility, coordination.

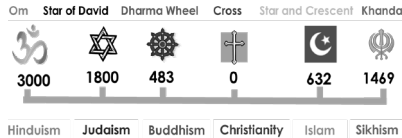
Health Benefits

- Improves cardiovascular endurance.
- Improves aerobic and anaerobic fitness.

Introduction to World Religions

6 World Religions

There are six major world religions in the world today. They originated in the following order:



Monotheism

Religions which follow one God. Mono comes from the Greek term 'one' – for example, monobrow! Examples include: Judaism, Christianity, Islam and Sikhism.

Polytheism

Religions which follow more than one or multiple Gods. Examples include: Hinduism.

Christianity and the Church

Christianity – Key Facts:

- There are 12.8 billion Christians in the world.
- Christianity was founded by Jesus.
- Christian worship takes place in a Church.
- Christians read the holy the Bible.
- It is a **monotheistic** religion.

Church Meaning

1. The holy people of God who work together and believe God is with them to help and guide.
2. A building in which Christians worship.

Role of the Church

Many Churches lead counselling, food banks, education, study groups, etc. One major role is their commitment to charity and helping those in need.

Faith without Action is Dead

The Christian teaching that worshipping is not enough and that they should help those in society who are in need. E.g. homeless.

Judaism and Jerusalem

Judaism – Key Facts:

- Judaism is the world's oldest religion.
- There are 15 million followers, called Jews.
- The holy book is the Torah.
- Jews worship in the Temple.
- The founder of Judaism is Abraham.
- Jews refer to God as Yahweh.

Pilgrimage

A special journey made for religious reasons to a place of religious interest.

Pilgrimage to Jerusalem

Jews believe **all of creation began in Jerusalem**. There have been two special temples built here, but the first was destroyed. The only remaining part of the second is where many Jews visit the Western Wall. Here they bring special prayers and place them in the cracks of the wall, in the hope they will be heard by God.

Islam and Mecca

Islam – Key Facts:

- There are 1.8 billion followers worldwide.
- The place of worship the Mosque.
- The Muslim Holy book is called the Qur'an.
- The **Prophet Muhammad** founded Islam.
- Muslims call God **Allah**.
- Muslims follow the 5 pillars of Islam.
- Islam is a monotheistic religion as they believe in one God.

Saudi Arabia

Islam began in Saudi Arabia. Here, the Prophet Muhammad received the word of Allah, which is found in the Qur'an. It is the Holiest place in Islam.

Haji

Haji is an annual Islamic pilgrimage to Mecca, a mandatory religious duty for Muslims that must be carried out at least once in their lifetime by all adult Muslims who are physically and financially capable.

Kaaba

A black stone building in Mecca that is shaped like a cube; it is the holiest place and symbolises belief in one God. Muslims everywhere face it when they pray by using a compass.

Ritual

A ceremony consisting of a series of actions performed according to a set order.

Hinduism and the River Ganges

Hinduism – Key Facts:	<ul style="list-style-type: none"> Hinduism began in ancient India. There is no single founder in Hinduism. Hinduism is a polytheistic religion – 33 million Gods. All however worship one supreme being, Braham. Hindu's worship in the Mandir. The holy texts are called the Vedas.
River Ganges	The River is located between India and Bangladesh. It is over 2700km long.
Mother Ganga	Hindus regard the Ganges as not only a river but also a mother, a Goddess called Ganga.
Purification	In Hinduism it is considered holy to take a pilgrimage to the Ganges and bathe in it to purify a person's soul of all past sins, and cure illnesses.
Life and Death	Varanasi on the River Ganges is the most famous cremation site. Hindu's believe if you are cremated here, you will escape reincarnation (cycle of birth and rebirth) and achieve Moksha which is freedom and eternal peace.
Environment	Recently, the river has become polluted and raised lots of environmental concerns.

Buddhism and the Mahabodhi Temple

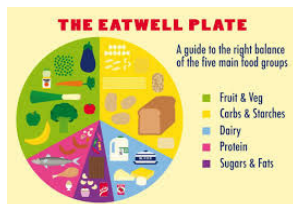
Buddhism – Key Facts:	<ul style="list-style-type: none"> There are 376 million followers worldwide. Buddhist have no personal God, but follow the path of the Buddha (Siddhartha Gautama). The place of worship is called a temple. The holy book is called the Pāli Canon.
Siddhartha Gautama	The founder of Buddhism who eventually became known as the Buddha. He was once a prince, but gave this up to focus on his beliefs.
Dharmic Religions	Religions which originated in India are referred to as Dharmic.
Mahabodhi Temple	A site of pilgrimage for Buddhists. It houses a huge statue of the Buddha meditating in Gold. Buddhists believe that the Bodhi Tree there is a descendent of the tree under where the Buddha gained enlightenment – true knowledge.
Enlightenment	Freedom from the cycle of birth and rebirth which Buddhists associate with suffering.

Sikhism and the Golden Temple

Sikhism – Key Facts:	<ul style="list-style-type: none"> There are 18 million Sikhs worldwide. Sikhism was founded by the Guru Nanak roughly hundred years ago. Sikhs worship in a Gurdwara. Sikhs call the one God the Waheguru. It is a Dharmic and monotheistic religion.
Golden Temple	<ul style="list-style-type: none"> Many Sikhs go on pilgrimage to here, although it is not obligatory as Sikh's believe the Waheguru (God) is everywhere. People swim in the lake to heal illnesses. There are 4 doors, this represents equality; one on every side to show that people of all races and religions are equal.
Langar	The Langar is a dining hall where volunteers prepare the food. The food is free, everyone sits on the floor to show they are equal. There is a langar in every temple in the world – as well as the Golden Temple.
Equality meaning	The state of being equal, especially in status, rights, or opportunities. One of the central beliefs in Sikhism is equality – that no one is more important than another.

Healthy Diet and Obesity

Nutrient	A substance that is needed for healthy growth, development, and functioning.
Balanced Diet	Ensuring you eat all of the required nutrients for your body to function properly.
Food Groups	Carbohydrates, proteins, vitamins, fats, sugars.
Your Health	Poor diet can lead to conditions such as obesity, heart disease, poor oral hygiene and diabetes.



Hydration and Sugary Drinks

Dehydration	A harmful reduction in the amount of water in the body.
Signs	Thirst and dark-coloured urine. Other symptoms include dizziness or light headedness, headaches and tiredness
Water Intake	A child should drink between 6-8 glasses of water a day.
Sugar Intake	A limit of 25g of sugar during a day.
Sugar Tax	In April 2018 the sugar tax was introduced in the UK. It was designed to reduce health problems and childhood obesity.

Sleep and Screen Time

Deprivation	A lack or loss of something you need to function.
Sleep	Sleep is an active period where memories are also stored, muscle is grown and damaged tissue is repaired.
Sleep Time	11-year-olds should aim to get between 9-11 hours sleep where as teenagers should aim to get 8-10 hours sleep.
Screen Time	Screen time includes time watching TV, on the phone, playing on the computer or on a tablet.
Limiting Screen Time	Screen time and caffeine can both affect the quality of sleep that you have and cause sleep deprivation . Children spend an average of 1.5 hours screen time before bed.

Puberty

Hormones	Chemicals your body makes to help it do certain things - like grow up!
Puberty	The process of physical changes through which a child's body matures into an adult body. Girls: Ages 7-13. Boys: Ages 9-15.
Physical Changes	Growth, facial hair, voice breaking, menstrual cycles start, increased sweating.
Emotional Changes	Mood swings, increase in testosterone.
Spots and Acne	Spots are due to hormones and an oily substance called sebum, your body produces more during puberty, which causes blocked pores, and spots.

Personal Hygiene

Hygiene	Conditions or practices done to maintain health and preventing disease, especially through cleanliness.
Dental Hygiene	This involves brushing your teeth regularly, flossing, using mouthwash and having a good balanced diet.
Hand Washing	Washing your hands for 20 seconds using the correct routine to remove bacteria.
Clean Routine	Maintaining a good routine helps keep bacteria at bay! <ul style="list-style-type: none"> • Change your clothes regularly. • Regularly shower/take a bath. • Change menstruation products regularly. • Eat a good diet/drink water. • Keep a clean living area.

Mental Health and Wellbeing

Mental Health	Our emotional, psychological, and social wellbeing. It affects how we think, feel, and act.
Wellbeing	The state of being comfortable, healthy, and happy.
Stigma	A strong feeling of disapproval that most people in a society have about something, especially when this is unfair. E.g. 9/10 people who suffer from mental health problems have reported experiencing stigma and discrimination.
Support	It is important to know Your mental health doesn't always stay the same. It can change as you move through different stages of your life. You can seek help from your doctor, teachers, friends and family. #gettalking.

Young Carers

Young Carers	Those under 18 who care for parents or family members who are suffering from physical disabilities, mental health problems and also drug and alcohol addiction.
Role	Care can include household chores, caring for siblings, cooking, helping parents to get dressed and washed and providing medication.
Respite	A short period of rest or relief from something difficult to help carers relax or maybe catch up with school work.
Support	Young carers can seek support through school, GP, or an independent charity.

Disability

Equality	Ensuring individuals or groups of individuals are not treated differently.
Disability	A physical or mental condition which may affect a persons movements, senses or activities. This may involve sensory, mental health, mobility or learning disability. 11 million people in the UK have a disability.
Equality Act 2010	A law which protects those with a disability against discrimination. It states that disabled people must have reasonable adjustments made to take part in society and succeed in life.
Stereotypes	We can try and overcome discrimination by challenging stereotypes. A stereotype is a set idea that people have about someone which is usually incorrect.

Adaptations

How is each animal adapted to its environment?



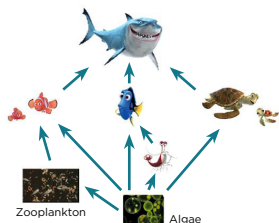
- **White appearance** camouflage.
- **Thick layers of fat and fur** for insulation.
- **A small surface area to volume ratio** to minimise heat loss.
- **A greasy coat** which sheds water.



- **Large, flat feet** to spread their weight.
- **Thick fur** on the top of the body for shade, and thin fur elsewhere to allow easy heat loss.
- **The ability to go for a long time without water.**
- **Thick long eyelashes** to help keep the sand out.

Food Webs

Label the food web (remember the arrows show energy transfer between organisms!).



Daily and Seasonal Changes

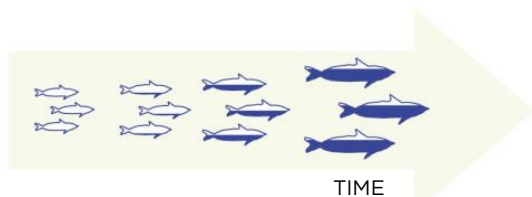


- Light/dark.
- Daily temperature.
- Daily weather.



- Seasonal weather.
- Seasonal temperature.

What is Bioaccumulation?



Environmental Impact

Key Term	Definition
Habitat	The place where an organism lives.
Environment	The surroundings or conditions in which a person, animal, or plant lives or operates.
Population	All the living things in a particular place.
Biotic	Biotic means the living or once living components of a community E.g. plants and animals.
Abiotic	Abiotic means the non living factors of the environment, E.g. light and temperature.

Pesticides and DDT

What is a pest?

Animals that harm plants we want to grow.

What is a pesticide?

Chemicals that kill pests.

What is a herbicide?

Chemical which kills weeds.

What is DDT and why is it no longer used?

Used to treat malaria and typhoid in WWII. Remained in the soil years later. Linked to cancer and harmful to animals.

How Could We Investigate Habitats?

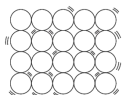
1. Measure a 4mx4m **area** of each field.
2. Randomly place the **quadrat** down in the area.
3. Record the number of each **species**.
4. Repeat for 4 different sections and take an **average** for each species.
5. Compare the **average** of each field.

Chemical States



Liquid

Particles are free to move around the area they are in.



Solid

Particles are packed closely together and can only vibrate around a fixed spot.



Gas

Particles are spread apart and can move around the space they fill.

Variables

Variable	Definition	Example
Independent	The variable that you change.	Amount of solvent. Amount of solute.
Dependent	The variable that you measure.	Time taken to dissolve.
Control	The variables which need to be controlled as they may effect your experiment.	Temperature.

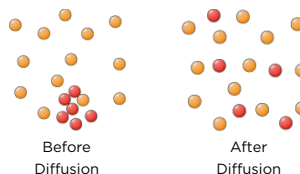
Dissolving

Key Term	Definition
Solvent	The liquid the substance dissolves in.
Solute	The substance which dissolves.
Solution	The mixture of substance and liquid.

Explain how salt dissolves in water

Salt is the solute, the water (solvent) surrounds the salt particles and the mixture becomes a solution as the particles move around each other.

Diffusion of Particles

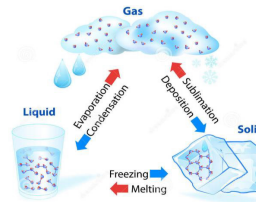


The particles have gained energy and are moving between each other.

What would happen if you increased the temperature of the solution?

The particles will have gained more energy from the heat, therefore move around each other faster.

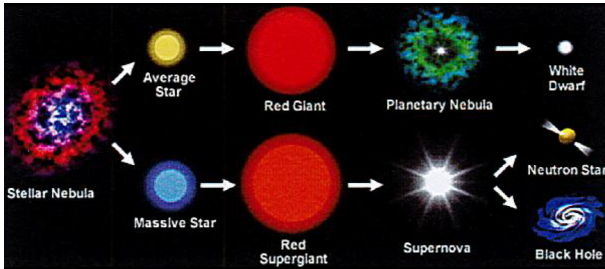
Change of State



Forces and Space

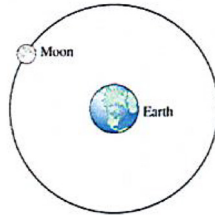
The planets in our Solar System are:

Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune.



Something that emits light is called 'luminous'. The moon is non-luminous. Non-luminous means **it reflects light**.

The moon is a satellite, a satellite is an object that is in orbit around a planet. Another use for satellites could be **sat-navs, weather, TV**.



Forces can make things move **faster** or **slower**.

Forces can change the **shape** of an object.

Forces are measured in **Newtons (N)**.

If forces on an object are balanced, that object will either **remain stationary** if it was still beforehand, or it will move at a **steady speed** if it was moving already.

We have day and night because the Earth **rotates** on its axis. During daylight, light from the **sun** shines on that side of the Earth.

The other side, that is pointing away from the sun, gets no light and so it is **dark** there.

The Earth completes one full rotation every **24** hours.

The Earth's **seasons**, summer, spring, autumn and winter are caused because the Earth is tilted on its axis.

When the Northern **Hemisphere** is tilted towards the sun, it is summer, and when it is tilted away from the sun, it is **winter**.

It takes **28** days for the moon to orbit the Earth.

As the moon moves, our view of it changes. These changes are called the **phases** of the moon.

When we see the moon as a circle, we call it a **full** moon.

A **lunar** eclipse occurs when the Earth passes between the moon and the sun, and the Earth's shadow blocks us from seeing the moon.



A **solar** eclipse occurs when the moon passes between the Earth and the sun, blocking us from seeing the sun.



Mass is measured in **grams (g)** or **kilograms (kg)**.

Weight is measured in **Newtons (N)**.

Gravity on Earth = 10N/Kg - it pulls you towards the Earth.

Weight (N) = **mass (kg) × gravitational field strength (N/kg)**

Saludos

¡Hola!	Hello
¿Qué tal?	How are you?
Bien, gracias.	Fine, thanks.
fenomenal	great
regular	not bad
fatal	awful
¿Cómo te llamas?	What are you called?
Me llamo...	I am called...
¿Dónde vives?	Where do you live?
Vivo en...	I live in...
¡Hasta luego!	See you later!
¡Adiós!	Goodbye!

¿Tienes hermanos?

Tengo...	I have...
una hermana	a sister
un hermano	a brother
una hermanastra	a half-sister/ stepsister
un hermanastro	a half-brother/ stepbrother
No tengo hermanos.	I don't have any brothers or sisters.
Soy hijo único/ hija única.	I am an only child. (male/female)

Greetings**Do you have any brothers or sisters?****¿Qué tipo de persona eres?**

Soy...	I am...
divertido/a	amusing
estupendo/a	brilliant
fenomenal	fantastic
generoso/a	generous
genial	great
guay	cool
listo/a	clever
serio/a	serious
simpático/a	nice, kind
sincero/a	sincere
tímido/a	shy
tonto/a	silly
tranquilo/a	quiet, calm

Los colores

blanco/a	white
amarillo/a	yellow
negro/a	black
rojo/a	red
verde	green
gris	grey
marrón	brown
azul	blue
rosa	pink
naranja	orange

What sort of person are you?**Colours****Mi pasión**

Mi pasión es...	My passion is...
Mi héroe es...	My hero is...
el deporte	sport
el fútbol	football
la música	music
el tenis	tennis

¿Cuántos años tienes?

Tengo... años.	I am... years old.
¿Cuándo es tu cumpleaños?	When is your birthday?
Mi cumpleaños es el... de...	My birthday is the... of...
enero	January
febrero	February
marzo	March
abril	April
mayo	May
junio	June
julio	July
agosto	August
septiembre	September
octubre	October
noviembre	November
diciembre	December

My passion**How old are you?**

**Los números
1 – 16**

uno	1
dos	2
tres	3
cuatro	4
cinco	5
seis	6
siete	7
ocho	8
nueve	9
diez	10
once	11
doce	12
trece	13
catorce	14
quince	15
dieciséis	16

**Numbers
1 – 16****Los números
17 – 31**

diecisiete	17
dieciocho	18
diecinueve	19
veinte	20
veintiuno	21
veintidós	22
veintitrés	23
veinticuatro	24
veinticinco	25
veintiséis	26
veintisiete	27
veintiocho	28
veintinueve	29
treinta	30
treinta y uno	31

**Numbers
17 – 31****¿Tienes
mascotas?**

Tengo...	I have...
un caballo	a horse
una cobaya	a guinea pig
un conejo	a rabbit
un gato	a cat
un perro	a dog
un pez	a fish
un ratón	a mouse
una serpiente	a snake
No tenga mascotas.	I don't have any pets.
¿Cómo es?	What is it like?
¿Cómo son?	What are they like?

**Do you have
any pets?****Ser (to be) – present tense**

Soy	I am
Eres	You are
Es	He/she/it is
Somos	We are
Sois	You are
Son	They are

Tener (to have) – present tense

Tengo	I have
Tienes	You have
Tiene	He/she/it has
Tenemos	We have
Tenéis	You (pl) have
Tienen	They have

**Palabras muy
frecuentes**

bastante	quite
no	no/not
mi/mis	my
muy	very
pero	but
también	also, too
tu/tus	your
un poco	a bit
y	and

**High-frequency
words**

¿Qué te gusta hacer?

Me gusta...	I like...
Me gusta mucho...	I really like...
No me gusta...	I don't like...
No me gusta nada...	I don't like it at all...
chatear	to chat online
escribir correos	to write emails
escuchar música	to listen to music
jugar a los videojuegos	to play video games
leer	to read
mandar SMS	to send text messages
navegar por Internet	to surf the net
salir con mis amigos	to go out with my friends
ver la television	to watch TV
porque es...	because it is...
porque no es...	because it is not...
interesante	interesting
guay	cool
divertido/a	amusing, funny
estúpido/a	stupid
aburrido/a	boring

What do you like to do?**¿Qué haces en tu tiempo libre?**

bailo	I dance
canto karaoke	I sing karaoke
hablo con mis amigos	I talk with my friends
monto en bici	I ride my bike
saco fotos	I take photos
toco la guitarra	I play the guitar

Expresiones de frecuencia

a veces	sometimes
de vez en cuando	from time to time
nunca	never
todos los días	every day

¿Qué tiempo hace?

hace calor	it's hot
hace frío	it's cold
hace sol	it's sunny
hace buen tiempo	it's nice weather
lueve	it's raining
nieva	it's snowing

What do you do in your spare time?**Expressions of frequency****What's the weather like?****Las estaciones**

la primavera	spring
el verano	summer
el otoño	autumn
el invierno	winter

The seasons**¿Qué deportes haces?**

Hago artes marciales.	I do martial arts.
Hago atletismo.	I do athletics.
Hago equitación.	I do/go horse riding.
Hago gimnasia.	I do gymnastics.
Hago natación.	I do/go swimming.
Juego al baloncesto.	I play basketball.
Juego al fútbol.	I play football.
Juego al tenis.	I play tennis.
Juego al voleibol.	I play volleyball.
¡Me gusta!	I like it!
¡Me gusta mucho!	I like it a lot!
¡Me gusta muchísimo!	I really, really like it!
¡Me encanta!	I love it!

What sports do you do?**Algunas preguntas**

¿Qué...?	What/Which...?
¿Cuándo...?	When...?
¿Dónde...?	Where...?
¿Cómo...?	How/What...?
¿Cuántos...?	How many...?

Some questions

Hacer (to do) – present tense (irregular)

Hago	I do
Haces	You do
Hace	S/he does
Hacemos	We do
Hacéis	You do
Hacen	They do

Gramática

The infinitive is the form of the verb you find in the dictionary or word list. It often translates as 'to do something'.

escuchar v to listen

In Spanish, all infinitives end in **-ar**, **-er** or **-ir**. How many of each group can you find in exercise 1?

When **me gusta** is followed by another verb, that verb must be in the infinitive.

Me gusta **escuchar** música.

I like **to listen/listening** to music.

There are three types of verbs: **-ar**, **-er** and **-ir**. The biggest group is **-ar** verbs. Once you know the pattern, you can apply the rules to new **-ar**.

hablar to speak

(yo)	hablo	I speak
(tú)	hablas	you speak
(él/ella)	habla	he/she speaks
(nosotros)	hablamos	we speak
(vosotros)	habláis	you (plural) speak
(ellos)	hablan	they speak

Jugar (to play) – present tense (irregular)

Juego	I play
Juegas	You play
Juega	S/he plays
Jugamos	We play
Jugáis	You play
Juegan	They play

Skills

Cognates

Some words are spelt the same in Spanish and English. These are called **cognates**. Even though they look the same, they may be pronounced differently. Watch out for this!

Making sentences more interesting

To make your sentences longer and more interesting, include:

- Connectives (e.g. **y**, **cuando**).
- Intensifiers (e.g. **muy**).
- Reasons (e.g. **porque es...**).
- Expressions of frequency (e.g. **todos los días**).

Español

Me gusta	I like
Me encanta(n)	I love
Me aburre	...is boring
Me aburren	...are boring
Me flipa(n)	I really like
Me mola(n)	I really like
Odio	I hate
No me gusta(n) nada	I don't like ... at all

Inglés

Palabras muy frecuentes

con	with
cuando	when
generalmente	generally
mucho	a lot
no	no
o	or
pero	but
porque	because
sí	yes
también	also, too
y	and
¿Y tú?	And you?

Los días de la semana

lunes	Monday
martes	Tuesday
miércoles	Wednesday
jueves	Thursday
viernes	Friday
sábado	Saturday
domingo	Sunday
los lunes	on Mondays, every Monday
los martes	on Tuesdays, every Tuesday

High-frequency words

¿Qué estudias?

Estudio...	I study...
ciencias	science
dibujo	art
educación física	PE
español	Spanish
francés	French
geografía	geography
historia	history
informática	ICT
inglés	English
matemáticas	maths
música	music
religión	RE
teatro	drama
tecnología	technology

Estudiar (to study) - present tense

Estudio	I study
Estudias	you study
Estudia	s/he studies
Estudiamos	we study
Estudiáis	you (pl) study
Estudian	they study

What do you study?**¿Qué hay en tu insti?**

En mi insti hay...	In my school, there is...
un campo de fútbol	a football field
un comedor	a dining hall
un gimnasio	a gymnasium
un patio	a playground
una biblioteca	a library
una clase de informática	an ICT room
una piscina	a swimming pool
unos laboratorios	some laboratories
unas clases	some classrooms
No hay piscina	There isn't a swimming pool.

Los profesores

El professor/La profesora es...	The teacher is...
paciente	patient
raro/a	odd
severo/a	strict

Ser (to be) - present tense

Soy	I am
Eres	you are
Es	s/he is
Somos	we are
Sois	you (pl) are
Son	they are

What is there in your school?**Opiniones**

¿Te gusta el dibujo?	Do you like art?
Sí, me gusta (mucho) el dibujo.	Yes, I like art (a lot).
No, no me gusta (nada) el dibujo.	No, I don't like art (at all).
¿Te gustan las ciencias?	Do you like science?
Sí, me encantan las ciencias.	Yes, I love science.
aburrido/a	boring
difícil	difficult
divertido/a	funny
fácil	easy
importante	important
interesante	interesting
práctico/a	practical
útil	useful

Opinions**¿Cuál es tu día favorito?**

Mi día favorito es el lunes/el martes.	My favourite day is Monday/Tuesday.
Los lunes/martes estudio...	On Mondays/Tuesdays I study...
¿Por qué?	Why?
Porque...	Because...
por la mañana	in the morning
por la tarde	in the afternoon
estudiamos	we study
no estudio	I don't study

What is your favourite day?

¿Cómo es tu insti?

Es...	It's...
antiguo/a	old
bonito/a	nice
bueno/a	good
feo/a	ugly

Expresiones de tiempo

normalmente	normally
a veces	sometimes
primero	first
luego	then

Skills

Writing better sentences

Make your sentences matter by using:

- Connectives (**y, pero, o, también, porque**).
- Intensifiers (**muy, bastante, un poco**).
- Sequencers (**primero, luego**).
- Expressions of frequency (**a veces, normalmente**).

Comer (to eat) – present tense

Como	I eat
Comes	you eat
Come	s/he eats
Comemos	we eat
Coméis	you (pl) eat
Comen	they eat

What's your school like?

Palabras muy frecuentes

algo	something
donde	where
hay	there is/there are
o	or
pero	but
¿Por qué?	Why?
porque	because
también	also, too
tampoco	nor/neither
y	and

¿Qué haces durante el recreo? What do you do during break?

Como...	I eat...
un bocadillo	a sandwich
unos caramelos	some sweets
chicle	chewing gum
una chocolatina	a chocolate bar
fruta	fruit
unas patatas fritas	some crisps
Bebo...	I drink...
agua	water
un refresco	a fizzy drink
un zumo	a juice
Leo mis SMS.	I read my text messages.
Escribo SMS.	I write text messages.
Nunca hago los deberes.	I never do homework.

High-frequency words

Beber (to drink) – present tense

Bebo	I drink
Bebes	you drink
Bebe	s/he drinks
Bebemos	we drink
Bebéis	you (pl) drink
Beben	they drink

Gramática

The plural form of **un/una** (meaning 'a') is **unos/unas** (meaning 'some'):

	singular	plural
masc	un laboratorio	unos laboratorios
fem	una clase	unas clases

Remember, there are also four words for 'the' in Spanish:

	singular	plural
masc	el laboratorio	los laboratorios
fem	la clase	las clases

When you are giving your opinion about subjects, you need to check three things:

1. That you have the correct verb form: **me gusta/me gustan**
2. That you have used the correct definite article: **el/la/los/las**
3. That your adjectives agree in number and gender: **aburrido/aburrida/aburridos/aburridas**.

Aim High

Be Determined

Be Brave

Be Supportive

Be Proud

130488



SmartE_XBO

