Name:

Form:

Knowledge Organisers

Year 9 Term 1

Knowledge is Power

Knowledge Organiser Guide

Your Knowledge Organiser (KO) contains the most important facts, vocabulary, dates, formulas, and definitions you'll need for each subject this term. Learning this core knowledge is essential – it helps you:

✅ Do well in your assessments
✅ Make better progress in lessons
✅ Fill gaps if you miss a lesson
✅ Take part in Connect tasks with confidence
✅ Become a more independent learner

🔁 **The Look, Cover, Write, Check (LCWC) Method**

This is a daily 15–25 minute routine you can use:

LOOK
Choose a small section of the Knowledge Organiser – just one row or a few key facts. Read it carefully. Say it out loud to help it stick.

COVER
Cover the section with a book, your hand, or a piece of paper.

WRITE
From memory, write down what you remember in your exercise book or on paper. Try to get it as close to the original as possible.

CHECK
Uncover the section and check your answer. Tick what's correct and fix any mistakes using a different colour.

REPEAT
Move on to the next small section and repeat the process.

🧠 Other Great Techniques

Alongside Look. Cover, Write, Check, try these techniques to boost your memory and understanding:

1. Self-Quizzing
Make flashcards from the KO (question on one side, answer on the other) or ask someone at home to quiz you.

2. Mind Mapping
Create mind maps from sections of your KO – this helps you make connections between ideas.

3. Dual Coding
Draw simple diagrams or doodles next to facts – this helps visual learners remember better.

4. Teach It
Explain a topic from your KO to a family member or friend. Teaching helps you learn deeply.

5. Spaced Practice
Revisit the same facts over several weeks. Don't cram – return to older content regularly.

📚 Using Your KO in Class

Connect – If your teacher allows, use your KO as part of the Connect activity at the start of your lesson.
Missed a Lesson? – Use the KO to catch up on key knowledge you've missed.
Homework & Revision – Use the KO as your go-to revision tool before assessments.

Art: Y9 Term 1

Art Knowledge Organiser: Y9 Portraiture

Key Words and Definitions

Vocabulary	Meaning
Identity	The qualities, beliefs, interests and experiences that make a person unique.
Portrait	An artwork that represents a person.
Self-Portrait	A portrait an artist creates of themselves.
Photography	The art of capturing images using a camera.
Composition	The arrangement of objects, shapes and features within an artwork.
Cropping	Cutting or selecting part of an image to improve composition.
Observational Drawing	Drawing what you see from a photograph, object or person.
Proportion	The correct relationship between the sizes of different parts of a drawing.
Line Drawing	A drawing made using lines without colour or heavy shading.
Contour Line	A line that defines the outer edge or shape of an object.
Tone	The lightness or darkness of a colour or shade.
Shading	Using different tones to create form and depth.
Contrast	The difference between light and dark areas in an artwork.
Texture	The surface quality of an artwork, either real or implied.
Mixed Media	Artwork created using more than one material or technique.
Collage	An artwork made by combining different materials such as paper, photographs or text.
Layering	Building up multiple materials, colours or images in an artwork.

Vocabulary	Meaning
Printmaking	Creating artwork by transferring an image from one surface to another.
Monoprint	A printmaking process that creates a single unique print.
Relief Printing	A printmaking technique where raised areas transfer ink onto paper.
Ink	A liquid drawing or printing material often used for expressive marks.
Mark Making	Different types of lines, patterns and textures created by an artist.
Symbolism	Using objects, colours or images to represent ideas or personal meanings.
Expression	Showing emotion, feeling or character within an artwork.
Annotation	Written notes used to explain ideas, techniques or artistic decisions.
Research	Gathering information about artists, themes and techniques.
Influence	The effect one artist's work has on another artist's ideas or style.
Contemporary Artist	An artist working in the present day.
Media	The materials used to create artwork, such as paint, pencil or ink.
Visual Language	How artists communicate ideas using images, colours, symbols and composition.
Personal Response	An artwork that reflects an individual's own ideas, experiences and opinions.
Develop	To improve and refine an idea through experimentation and









Art Knowledge Organiser: Y9 Portraiture

Theoretical Knowledge – Artist Research





DAIN is a New York-based contemporary street artist known for blending the raw energy of graffiti with the elegance of vintage Hollywood portraiture. His artwork combines techniques such as wheat-pasting, collage, silk-screening, spray paint, and acrylic paint, creating striking mixed-media pieces that are instantly recognisable.
A defining feature of DAIN's work is his use of black-and-white portraits, often inspired by classic film stars, layered with advertisements, logos, textures, and vibrant colours. His signature motif, a painted circle and dripping effect around one eye, symbolizes the contrast between beauty and urban decay.





Deb Weiers is a Canadian mixed-media artist based in rural Alberta, whose work is inspired by the human face and the powerful emotions it can convey. Working primarily with mixed media on paper, she creates expressive, semi-abstract portraits that explore themes of resilience, struggle, joy, humour, and human connection. and experimental approach, combining layers of colour, texture, drawing, and collage to produce distinctive artworks that are both playful and thought-provoking. Her characters often reflect shared human experiences, inviting viewers to connect through stories of hardship, hope, and everyday life.

Loui Jover is an Australian contemporary artist best known for his expressive ink drawings created on reclaimed vintage book pages. Born in Serbia and raised in Australia, Jover developed a distinctive style that combines delicate figurative illustration with the printed text and history of old books, transforming discarded pages into evocative works of art.
His artwork often features female portraits, couples, and emotional human narratives rendered in fluid ink lines and dramatic drips. By layering drawings over aged book pages, Jover creates a dialogue between image and text, exploring themes of memory, love, nostalgia, and human connection. His signature ink-drip technique has become widely recognised and has influenced many contemporary artists.

Summary Points

DAIN
- Layered portraiture
- Use of photography and collage
- Textural mark-making
- Themes of identity and memory

Loui Jover
- Ink portraiture on vintage book pages
- Expressive line work
- Combining imagery and text

Deb Weiers
- Mixed media portraiture
- Pattern, colour and symbolism
- Personal narratives and visual storytelling

Art Knowledge Organiser: Y9 Portraiture

Theoretical Knowledge – Printing Methods

What is a Monoprint?
A monoprint is a type of printmaking that produces a **single, unique image**. Unlike other printmaking methods, each monoprint is one of a kind because the image changes every time it is printed.

Method
Step 1: Prepare the Plate/Image back
Roll a thin, even layer of printing ink onto the Perspex, acetate sheet or the back of an image
Top Tip: Too much ink will make the print blurry. Aim for a smooth, thin layer.
Step 2: Position Your Paper
Carefully place a clean sheet of paper over the inked surface or put the image with ink on the back onto a piece of paper.
Do not move the paper once it is down.
Step 3: Create Your Design
Draw onto the back of the paper using a pencil.
As you press, the ink transfers to the paper underneath.
Step 4: Add Tone and Texture
Vary the pressure of your pencil to create:
•Dark lines
•Light lines
•Shaded areas
Experiment with cross-hatching, dots, and patterns.
Step 5: Reveal the Print
Carefully lift one corner and peel the paper away from the plate.
You will have a unique monoprint.

Adding Collage Elements to a Monoprint
Collage can make your monoprints more interesting by adding **texture, colour, text, and layered imagery**.
Collage Before Printing
1. Glue small pieces of:
1. Book pages
2. Newspapers
3. Magazines
4. Patterned paper
5. Tissue paper
2. Arrange them on your background paper.
3. Let the glue dry fully.
4. Place the collaged paper onto your inked plate and create your monoprint over the top.

Effect: The print integrates with the collage, creating a layered mixed-media look. You can add colour to the monoprint to add more layer effect.





Art Knowledge Organiser: Y9 Portraiture

Theoretical Knowledge – Collage Methods

1. Torn Paper Portrait
•Collect coloured papers, magazines, newspapers, and book pages.
•Tear pieces into different shapes and sizes.
•Arrange the torn papers to create the features of a face.
•Layer pieces to build depth and texture.
Effect: Textured, expressive portraits with visible layers.

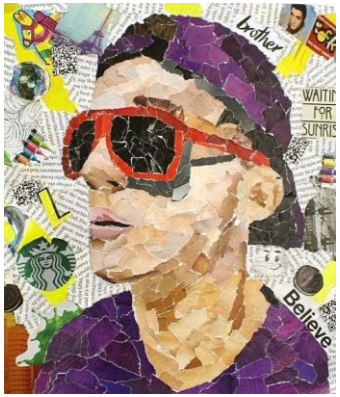
2. Magazine Face Collage
•Cut out eyes, noses, mouths, and hair from magazines.
•Combine features from different people to create a new face.
•Glue onto a background and add drawn details.
Effect: Surreal and imaginative portraits.

3. Half Drawing, Half Collage
•Draw one side of a face.
•Create the other side using collage materials.
•Blend the two halves together with colour and pattern.
Effect: Mixed-media portrait showing contrast and creativity.

4. Text-Based Portrait
•Use pages from old books, magazines, or newspapers.
•Arrange the text as a background.
•Draw or paint a portrait over the top.
Inspired by: Loui Jover.
Effect: Combines imagery and storytelling.







5. Geometric Portrait
- Cut coloured paper into triangles, rectangles, and circles.
- Assemble the shapes to form a face.
- Add details using pen or paint.

Effect: Modern, abstract appearance.

6. Layered Mixed-Media Portrait
- Start with a printed or drawn portrait.
- Add collage papers around and over sections of the face.
- Include paint, ink, stamps, and handwritten text.

Inspired by: Deb Weiers and DAIN.
Effect: Rich surface texture and visual interest.

7. Identity Portrait
- Use collage items that represent a person's interests:
- Music tickets
- Maps
- Photographs
- Comics
- Fabric
- Recipes
- Sports images
- Arrange these inside or around the portrait.

Effect: A portrait that tells a personal story.



Homework Task:-
Start collecting scraps that represent your interests for your Artwork piece in class.. See above for suggestions

Computing: Y9 Term 1

Online Safety Tips

Phishing Scams

Fake emails that try to steal your information.



Risks: Identity Theft • Financial Loss

Malware

Harmful software that can manage your device or steal your data.



Privacy Settings

Check your privacy settings to protect your personal information.



Digital Footprint

Everything you do online leaves a trail.



Filter Bubbles & Echo Chamners

Be aware of only seeing content that matches your views.



Fake News

Watch out for false information and hoax stories.



Stay Safe Online!

Think before you click

Use strong passwords

Get news from trusted sources.



DIGITAL WORLD COMPASS: ESSENTIAL TOPICS FOR YOUNG MINDS

1 DIGITAL ACCESS & PARTICIPATION

Everyone takes part!

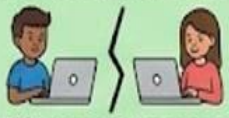




INCLUSION
Everyone takes part!



DIGITAL DIVIDE



Differences in access to tools & internet.



CONNECTIVITY



Connecting to the internet & networks.

2 DIGITAL ACCESSIBILITY

Usable for EVERYONE!



ACCESSIBILITY
Designing for all users.



SCREEN READER
Software helps people with difficulty seeing interact.



ALT TEXT
Short descriptions of images & graphics.

3 WEB & CONTENT DESIGN

BUILDING AWESOME DIGITAL STUFF



WIREFRAME



A plan for the basic structure & layout.



UX DESIGN
Making websites, apps, or blogs EASY, EASY, USEFUL, & ENJOYABLE.

BLOG
Regularly updated diary-style articles.



4 DATA & STATISTICS

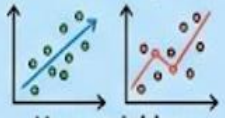
EXPLORING INFORMATION



DATA SET
A collection of related information.



CORRELATION
How variables move together (Positive or Negative).



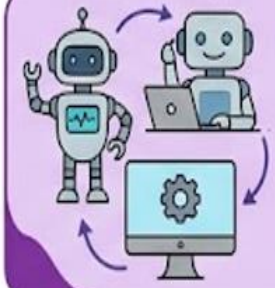
How variables move together (Positive or Negative)

PPDAC: A framework to solve real-world problems using data.



5 ARTIFICIAL INTELLIGENCE & INCLUSION

SMART MACHINES & FAIR DESIGN



AI TOOL
Software using clever techniques to perform tasks.



BIAS
When something is UNFAIR towards things or people.



INCLUSIVE DESIGN
Products that as many people as possible can use.



EVALUATE
Reflect on what's good and what can be improved.





Drama: Y9 Term 1

DRAMA Knowledge Organiser: Key Vocabulary Y9 HT1

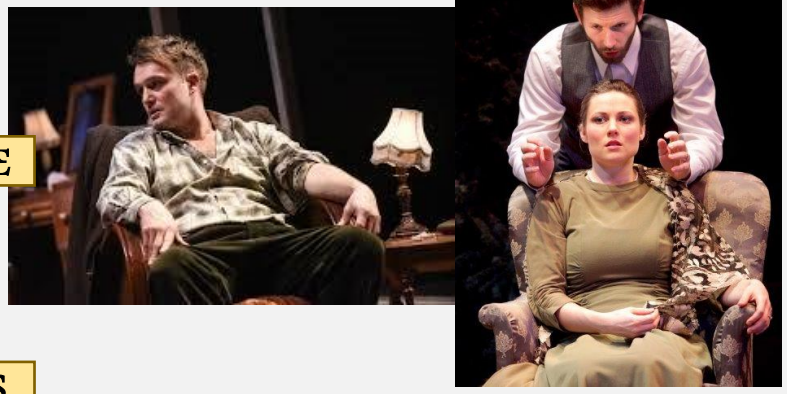
Naturalism

A performance that presents events and characters on stage as in real life.

NATURALISM attempts to hold up **a mirror to nature** and give the illusion of **characters as actual people** in **real-life situations** using **everyday language**.

It is both a STYLE & a GENRE

- UNDER-PLAYED EMOTIONS
- EVERY DAY LIVES
- EVERY DAY LANGUAGE
- EVERY DAY PEOPLE
- EVERY DAY PROBLEMS



Style: *the way in which Drama is performed*

Genre: *the type of story you are telling*

Theatre Practitioner *Someone who creates theatrical performance and/or writes theatrical ideas and teachings*

Konstantin Stanislavski - Russian Born 1863 Died 1939 He formed the Moscow Art Theatre and is most commonly known for his 'system'. The 'System' was Stanislavski's acting method, born out of a quest for realism in acting. The main objective of his system was to aid the actor in creating an illusion of actuality on stage and in convincing the audience that he (the actor) was portraying a real person, convincing his audience that his feelings and thoughts were exactly those of the character he embodied.

Explorative Techniques	Naturalistic Techniques	Abstract Techniques
Conscience Alley - Students form two lines that face each other. A character walks down the middle and the sides shout opposing opinions, ideas, thoughts etc	**Hot Seating** – A character is questioned on their motivation, decisions, behaviour or background. The method is used to develop a role	**Role on the wall** – This is a written document that explores the facts and feelings of a character throughout the piece
Forum Theatre – The observers are encouraged to stop the action when they feel necessary and suggest different actions. The actors can also ask for help	**Role Play** - The imitating of characters, behaviour, locations and situations that are different from yourself	**Still Image** - This is a static picture that is used to represent people, objects, situations but also abstract concepts like emotions or atmospheres
Spoken Thoughts - When the action freezes and a character speaks his/her thoughts aloud in order to add tension, provide information, or for some other purpose.	**Narration** - The act or process of telling a story or describing what happens. This is usually directed at the audience and can fill gaps between events/scenes.	**Slow Motion** - To move your body at a slow rate and maintain this slow pace for a period of time.
Cross Cutting/ Split Screen - Two or more scenes are present on the stage at the same time and are intercut to develop a story or characters. Whichever action is moving the others remain still.	**Flashback/ Flash forward** - Is a short scene in the story, earlier or later than the main idea, that interrupts the normal chronological order of the story.	**Essence Machine** - Using simple repetitive sounds and movements that builds a picture of a location, event or situation. Each member of the group repeats one sound and one action three times.
Marking the Moment - A dramatic technique used to highlight a key moment in a scene or role play. This can be done in a number of different ways: for example through slow-motion, a freeze-frame, narration, thought-tracking or music.	**Monologue** a speech presented by a single character, most often to express their thoughts aloud.	**Choral Speaking** - A group of actors narrating a poem or dramatic piece. This is often using various voice combinations and contrasts to bring out the meaning.

English: Y9 Term 1

English Knowledge Organiser: Y9 Of Mice and Men

Keywords and Definitions

A. Tier 2 Vocab	
Word	Definition
1. Façade	A deceptive outward appearance or image a person shows to others.
2. Misogyny	Hatred or contempt for women.
3. Promiscuous	Having many sexual partners, often judged as unfaithful or immoral.
4. Idealism	The unrealistic belief in or pursuit of perfection or noble goals.
5. Hierarchy	A system where people are ranked by status, power, or authority.
6. Cynical	Believing that people are motivated by self-interest; distrustful.
7. Itinerant	moving from place to place, especially for work or a temporary stay.
8. Marginalised	Treated as insignificant or pushed to the edges of society.

B. Tier 3 Vocab	
Word	**Definition**
1. Microcosm	A small representation of a larger system or society.
2. Zoomorphism	Using animal imagery to describe people or things.
3. Foreshadowing	A technique where an early detail hints at a future event.
4. Circular structure	When a story ends where it began, often symbolically.
5. Symbolism	Using symbols (objects, colours, settings) to represent ideas or emotions.
6. Symbiotic	A relationship between two different things that benefit from each other.

Knowledge

C. Context	
1. John Steinbeck	American novelist. Winner of the Nobel Prize for Literature.
4. Setting	Soledad, California, USA. Soledad means loneliness in Spanish.
5. Novella	A short novel.
6. The American Dream	The ideal by which equality of opportunity is available to any American, allowing the highest aspirations and goals to be achieved.
7. The Great Depression	1929-1939. Was the worst economic downturn in the history of the industrialized world.
9. Jim Crow Laws	The name of the racial caste system which operated primarily, but not exclusively in southern and border states, between 1877 and the mid-1960s.

D. Key themes	
1. Marginalisation	Members of society are treated unjustly because they are weaker, do not fit in, or cannot support themselves.
2. Loneliness	Characters are isolated as itinerant workers – during the Great Depression, people had to fend for themselves
3. Companionship	The novella explores the need for companionship and the tragedy of loneliness.
4. Fate	Steinbeck explores the tension between the inevitability of fate and the fragility of human dreams.
5. Social responsibility	A responsibility shared by every individual within a society. A collective value system where everyone looks out for everyone.
6. Misogyny	A dislike of, contempt for, or ingrained prejudice against women.

Knowledge Organiser: Crafting Descriptive Narratives

Tier 2 Vocabulary

Word	Definition	As a picture	In a sentence
Perfumed (adj)	Pleasant or sweet smelling		The air was **perfumed** with jasmine and honeysuckle.
Fetid (adj)	Smelling unpleasant and/or rotten		She could not escape the swamp's **fetid** breath.
Blazing (adj)	Very bright and/or hot		The sun was **blazing** down on the dusty road.
Bathed (adj)	Covered or filled with light, liquid, or another substance		It was night, and the beach was **bathed** in a pink glow.
Thronged (adj)	Filled with people or things		The streets were **thronged** with crowds and bunting.
Devoid (adj)	Completely lacking something		The landscape was **devoid** of trees.

Extension knowledge: you can enhance your writing by...

- Using a recurring symbol (a motif) to give further shape to your work
- Extending the 'shift' section through purposeful speech, dialogue, or internal monologue

Symbolism
The forest represents the unknown and the dangers of the wider world.

Foreshadowing
LRRH's mother warns her to stay on the path, hinting at danger in the woods

Turning point
The wolf eats LRRH's grandmother

Characterisation
LRRH is innocent and trusting; the wolf is sly and predatory

Tier 3 Vocabulary

- **Setting** - where and when something takes place.
- **Atmosphere** - the feeling or mood created by the writer.
- **Status quo** - the state of stability, balance, or normality (usually established at the beginning of a story)
- **Characterisation** - the way a character is represented or portrayed.
- **Narrative shift** - a change turning point in a story, e.g. in the atmosphere, mood, or action.
- **Foreshadowing** - when a writer hints at events that are yet to take place.
- **Symbolism** - something (e.g. an object, character, place, or event) represents a deeper meaning.
- **Figurative language** - similes, metaphors, personification, hyperbole.



Example narrative: Little Red Riding Hood

Setting
a dark forest

Atmosphere
happy and calm, then threatening

Status quo
LRRH is safe and happy; she visits her grandmother regularly

Geography: Y9 Term 1

GEOGRAPHY KNOWLEDGE ORGANISER – YEAR 9 HALF TERM 1 – VOLCANIC HAZARDS

TOPIC 1: EARTH'S GEOLOGICAL TIMESCALE

KEY FACTS

- The Earth is 4.6 billion years old.
- Earth's history is split into eras because it is such a long period of time.
- Continents have moved over millions of years due to plate tectonics.
- Fossils and rock layers provide evidence of Earth's history.

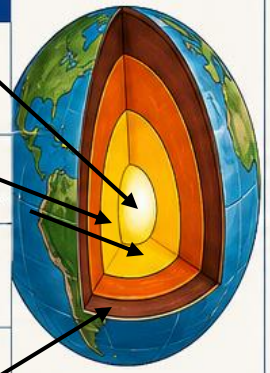
ERA	TIME	KEY FACTS
Precambrian	4.6 billion–541 million years ago	Earth formed, oceans and atmosphere developed, first simple life. Covers 88% of Earth's history.
Palaeozoic	541–252 million years ago	Fish, insects, amphibians and early reptiles evolved. First forests. Ended with Earth's biggest mass extinction.
Mesozoic	252–66 million years ago	Age of Dinosaurs. Birds and flowering plants evolved. Ended by an asteroid impact.
Cenozoic	66 million years ago–today	Age of Mammals. Ice ages occurred and humans evolved.

REMEMBER P P M C

Precambrian → Palaeozoic → Mesozoic → Cenozoic

TOPIC 2: STRUCTURE OF THE EARTH

LAYER	KEY INFORMATION
Inner Core	Solid iron and nickel. Around 5500°C. Hottest layer.
Outer Core	Molten iron and nickel. Creates Earth's magnetic field.
Mantle	Largest layer. Solid rock with a semi-molten upper mantle.
Crust	Thin, solid rock broken into tectonic plates.



TYPES OF CRUST

- Continental crust = thicker and lighter
- Oceanic crust = thinner and denser

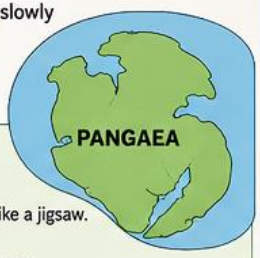
TOPIC 3: PLATE TECTONIC THEORY



ALFRED WEGENER (1912)

Wegener suggested that:

- All continents were once joined together as Pangaea.
- Pangaea existed around 250 million years ago.
- The continents slowly drifted apart.



HIS EVIDENCE

- ✓ South America and Africa fit together like a jigsaw.
- ✓ Similar rocks found on different continents.
- ✓ Matching fossils found on opposite sides of the Atlantic.

TOPIC 4: PLATE BOUNDARIES



Volcanoes form when...

- Magma rises through the Earth's crust.
- Once it reaches the surface it becomes lava.

CONSTRUCTIVE MARGIN	DESTRUCTIVE MARGIN
Plates move apart	Plates move together
Magma rises to fill the gap	Oceanic plate subducts beneath continental plate
New crust forms	Melting creates magma
Frequent, gentle (effusive) eruptions	Infrequent, violent (explosive) eruptions

EXAM TIP

- Constructive = Calm
- Destructive = Dangerous

TOPIC 5: VOLCANIC HAZARDS

HAZARD	KEY FACTS
Pyroclastic Flows	Deadliest hazard. Hot gas, ash and rock travelling up to 430 mph and 300–1000°C.
Volcanic Ash	Tiny sharp rock fragments. Damages lungs, roofs, crops and aircraft.
Lahars	Fast-moving mudflows of water, ash and rock. Can bury settlements.
Lava Flows	Destroy buildings and farmland but usually move slowly enough for evacuation.

LAVA TYPES



BASALTIC LAVA

- Runny
- Fast-flowing
- Gentle eruptions



RHYOLITIC LAVA

- Thick and sticky
- Slow-moving
- Traps gas
- Causes explosive eruptions

GEOGRAPHY KNOWLEDGE ORGANISER – YEAR 9 HALF TERM 1 – VOLCANIC HAZARDS

TOPIC 6: SHIELD VOLCANO CASE STUDY

Kīlauea (Hawaii)



KEY FACTS

- ✓ Shield volcano
- ✓ Gentle slopes
- ✓ Runny basaltic lava
- ✓ One of the world's most active volcanoes

2018 ERUPTION

- Over 700 homes destroyed
- Roads covered by lava
- Thousands evacuated

MAIN HAZARD

→ Slow-moving lava flows

TOPIC 7: STRATOVOLCANO CASE STUDY

Mount St Helens (USA)



KEY FACTS

- ✓ Stratovolcano
- ✓ Steep sides
- ✓ Sticky lava

18 MAY 1980

- Massive landslide triggered eruption
- Sideways blast
- 57 people killed

IMPACTS

- Pyroclastic flows
- Huge ash cloud
- Forests destroyed
- Roads destroyed
- Water supplies contaminated

WHY WERE FEWER PEOPLE KILLED?

Scientists monitored warning signs and evacuation zones were created.

TOPIC 8: PREDICTING ERUPTIONS

Scientists cannot predict eruptions exactly, but they monitor warning signs.

METHOD	WHAT IT DETECTS
Seismometers	Small earthquakes caused by rising magma
Tiltmeters	Ground swelling (deformation)
Gas Monitoring	Rising SO_2 and CO_2 emissions
Satellites & Thermal Cameras	Increased ground temperatures

TOPIC 9: PREPARING FOR ERUPTIONS

COMMUNITIES CAN:

- ✓ Practise evacuation drills
- ✓ Use hazard maps
- ✓ Prepare emergency kits
- ✓ Create exclusion zones
- ✓ Follow official advice

ENGINEERS MAY:

- Build barriers
- Dig channels
- Use seawater to cool lava

(These methods don't always work.)

PROTECT YOURSELF FROM ASH

- Stay indoors
- Wear a face mask
- Wear goggles

KEY VOCABULARY

WORD	DEFINITION
Magma	Molten rock beneath Earth's surface.
Lava	Magma that reaches the Earth's surface.
Crust	Thin outer layer of the Earth.
Mantle	Thick rocky layer beneath the crust.
Core	Centre of the Earth made of iron and nickel.
Tectonic Plate	Large pieces of Earth's crust that move.
Constructive Margin	Plates move apart.

WORD	DEFINITION
Destructive Margin	Plates move together.
Subduction	One plate sinks beneath another.
Pyroclastic Flow	Fast, deadly cloud of hot ash and gas.
Lahar	Fast-moving volcanic mudflow.
Basaltic Lava	Runny lava producing gentle eruptions.
Rhyolitic Lava	Thick lava producing explosive eruptions.
Shield Volcano	Wide volcano with gentle slopes.
Stratovolcano	Tall, steep-sided volcano with explosive eruptions.

GEOGRAPHY KNOWLEDGE ORGANISER – YEAR 9 HALF TERM 2 - INDIA

1. INDIA AT A GLANCE

Location
- Located in South Asia
- Surrounded by the Indian Ocean

Capital city: New Delhi

Population: Over 1.4 billion (the world's most populated country)



KEY PHYSICAL FEATURES

Feature	Location
Himalayas	North
Thar Desert	North-west
Deccan Plateau	South
Western Ghats	West
Eastern Ghats	East

MAJOR RIVERS
- Ganges
- Brahmaputra
- Indus

REMEMBER: Most of India's population lives on the fertile Northern Plains.

2. MUMBAI

KEY FACTS
- India's largest city
- Financial capital of India
- Population: 20+ million
- Home to the Bombay Stock Exchange
- Home of Bollywood
- Major international airport and busy port



WHY IS MUMBAI IMPORTANT?
- ✓ Banking
- ✓ Trade
- ✓ Business
- ✓ Entertainment
- ✓ Transport

3. WHY IS MUMBAI GROWING?

MEGACITY
A city with a population of over 10 million.

Mumbai's population has grown because of:

RURAL → URBAN MIGRATION

PUSH FACTORS (leave countryside)
- Low farming incomes
- Drought
- Poor harvests
- Few jobs
- Poor healthcare
- Limited education

PULL FACTORS (move to city)
- Better jobs
- Higher wages
- Better schools
- Better hospitals
- More opportunities

NATURAL INCREASE

When birth rate is higher than death rate.

Reasons:
- Better healthcare
- Improved sanitation
- Better living conditions

4. DHARAVI

WHAT IS DHARAVI?
- Informal settlement (slum)
- Located in Mumbai
- Around 1 million people
- Only 1 square mile
- One of the most crowded places on Earth



PROBLEMS
- ✗ Overcrowding
- ✗ Poor sanitation
- ✗ Shared toilets
- ✗ Limited clean water
- ✗ Health risks
- ✗ Pressure on schools and hospitals
- ✗ Unreliable electricity

POSITIVES

Thousands of small businesses:
- Recycling
- Pottery
- Leatherwork
- Textiles
- Food production

These businesses help Mumbai's economy.

Excellent community spirit and low crime

5. DHARAVI REDEVELOPMENT PROJECT (DRP)

Construction began: January 2025

AIMS
- Better housing
- Modern apartments
- New roads
- Parks
- Schools
- Healthcare
- Business investment

ADVANTAGES
- ✓ Safer homes
- ✓ Better health
- ✓ Better transport
- ✓ More jobs
- ✓ Improved education

DISADVANTAGES
- ✗ Some residents may not qualify for new homes
- ✗ Businesses could lose customers
- ✗ Communities may be broken up



GEOGRAPHY KNOWLEDGE ORGANISER – YEAR 9 HALF TERM 2 - INDIA

6. TNCs IN INDIA

KEY WORD

TNC (Transnational Corporation)

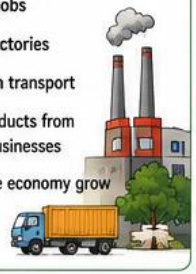
A company that operates in many countries.

EXAMPLE

Coca-Cola

BENEFITS

- Creates jobs
- Builds factories
- Invests in transport
- Buys products from Indian businesses
- Helps the economy grow



PROBLEMS

- Uses large amounts of water
- May reduce water available for farming
- Can affect local communities

7. MONSOONS

WHAT IS A MONSOON?

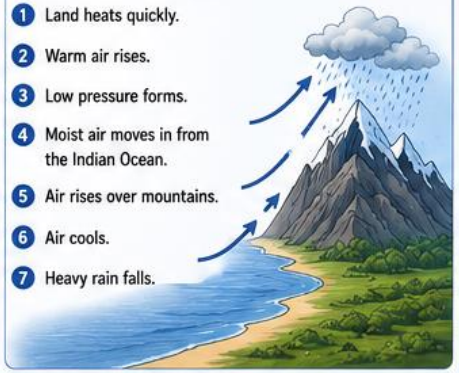
A seasonal wind that changes direction.

WHY ARE MONSOONS IMPORTANT?

Around half of India's farmland depends on monsoon rain.

SUMMER MONSOON (JUNE–SEPTEMBER)

1. Land heats quickly.
2. Warm air rises.
3. Low pressure forms.
4. Moist air moves in from the Indian Ocean.
5. Air rises over mountains.
6. Air cools.
7. Heavy rain falls.



8. CAUSES OF FLOODING

NATURAL CAUSES

- Heavy monsoon rainfall
- Himalayan glacier melt
- Deforestation

HUMAN CAUSES

Urban growth

Roads and buildings create impermeable surfaces, meaning water cannot soak into the ground.

RESULT:

- More surface runoff
- Rivers overflow
- Flash floods



9. IMPACTS OF FLOODING

KERALA FLOODS (2018)



KEY FACTS

- Worst floods in almost 100 years
- 5.4 million people affected
- 1.4 million people evacuated

CAUSES

- Heavy monsoon rainfall
- Landslides
- Water released from dams

SOCIAL IMPACTS

- Hundreds died
- Many injured
- Homes destroyed
- Schools closed
- Hospitals closed
- Families separated
- Disease risk increased

ECONOMIC IMPACTS

- Roads damaged
- Bridges destroyed
- Railways affected
- Power supplies disrupted
- Crops lost
- Tourism affected
- £ Billions of pounds lost

10. THE SUNDARBANS

KEY FACTS

- World's largest mangrove forest
- Shared by India and Bangladesh



WILDLIFE

- Bengal tiger
- Estuarine crocodile
- Water monitor lizard
- Hundreds of bird species

WHY IS IT IMPORTANT?

Around 4–5 million people rely on it for:

- Fishing
- Crabs
- Firewood
- Tourism

THREATS

- Rising sea levels
- Coastal flooding
- Erosion
- Saltwater entering rivers and soils
- Climate change

CONSERVATION

- Rational Parks
- Tiger Reserves
- UNESCO World Heritage Site
- Planting mangroves
- Wildlife monitoring
- Anti-poaching patrols
- Education programmes



KEY GEOGRAPHY VOCABULARY

KEYWORD	DEFINITION
Megacity	A city with over 10 million people.
Rural	Countryside.
Urban	Towns and cities.
Rural-to-urban migration	Moving from the countryside to a city.
Push factor	A reason people leave a place.
Pull factor	A reason people move to a place.
Natural increase	More births than deaths.
Informal settlement	Housing built without official planning or permission.
TNC	A company operating in many countries.
Monsoon	Seasonal winds bringing heavy rainfall.
Impermeable	A surface that water cannot soak through.
Surface runoff	Water flowing over the land into rivers.
Biodiversity	The variety of plants and animals in an area.
Mangrove	A salt-tolerant tree growing along tropical coasts.
Conservation	Protecting environments and wildlife for the future.

History: Y9 Term 1

History Knowledge Organiser: Y9 HT1 – The Inter-War Years

Key Words

Treaty	An agreement between two or more countries.
Tsar	An emperor of Russia before 1917.
Revolution	A forcible overthrow of the government.
Communism	The most extreme left-wing belief.
Fascism	The most extreme right-wing belief.
Reparation	Payment to make amends for damage caused.
Armistice	An agreement in war to stop fighting.
Left-wing	Parties concerned with the rights of workers and social equality.
Right-wing	Parties that support traditional values and the rights of landowners and property owners.
League of Nations	An international organisation to promote peace.
Big Three	The three leaders who dominated discussions at the Paris Peace Conference.

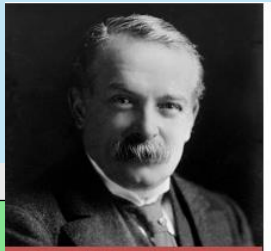
Knowledge



The Inter-War Years

- The armistice was signed on 11th November 1918. This officially ended World War One.
- The Big Three were David Lloyd-George (Great Britain), Georges Clemenceau (France) and Woodrow Wilson (USA).
- The Treaty of Versailles (TOV) punished Germany for WWI.
- The terms of the Treaty of Versailles were:
  - G – German territorial changes
  - A – Arms restrictions
  - R – Reparations
  - G – Guilt (war guilt)
  - Le – League of Nations

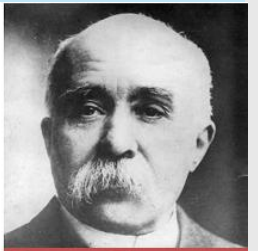




David Lloyd George
Britain



Woodrow Wilson
USA



Georges Clemenceau
France

Key Events

- 1917 – there is a Communist Revolution in Russia that creates fear of Communism across Europe.
- 1919 – The Big Three met at the Paris Peace Conference to punish Germany for WWI.
- Lots of treaties were drawn up at Paris, but the Treaty of Versailles (TOV) was the one that dealt with Germany.
- May 1919 – Germany was shown the terms of the TOV. They were very angry with these terms.
- Germany was forced to sign the Treaty of Versailles.

History Knowledge Organiser: Y9 HT2 – The Rise of Hitler

Key Words

Hyperinflation	When prices increase at a rapid rate and money loses its value.
Reparations	Money to make amends for damage caused.
Economic	Relating to money.
Great Depression	A worldwide economic depression.
Dictatorship	When one person solely rules a country.
Chancellor	The elected leader of Germany, answerable to the President and Reichstag.
Fuhrer	The supreme leader of Germany. When Hitler merged the roles of Chancellor and President.
Reichstag	German parliament building.
Propaganda	Information used to promote a particular point of view.

Knowledge

The Inter-War Years



- The 1929 Wall Street Crash led to the Great Depression. This left lots of Germans unemployed and without any money. People were desperate and needed a strong leader who would create jobs.



- The Nazis policies were popular and supported by lots of different groups in Germany. For example, a German racist and a soldier from WWI.



- Hitler eventually turned Germany into a dictatorship. He did through several events (look at the events below).
- The Nazis used a combination of propaganda and terror to gain control of Germany.

Key Events

- 1929 – Wall Street Crash.
- 1930s – Great Depression (Germany is impacted badly because of their reliance on US loans).
- January 1933 – Hitler is appointed Chancellor of Germany.
- February 1933 – Reichstag Fire (Hitler blamed the Communists).
- March 1933 – Enabling Act (allows Hitler to pass laws without approval from Hindenburg and the Reichstag).
- August 1934 – Hindenburg dies and Hitler declares himself Fuhrer.

Maths: Y9 Term 1



Mathematics

Year 9 HALF TERM 1:

N11 – Properties of number

In this chapter, students strengthen their understanding of number structure and classification, building key skills for higher-level mathematics. The chapter begins by reviewing factors, multiples, and prime numbers, before moving on to expressing numbers as the product of prime factors, including using these to solve problems (E).

Students then apply their knowledge to find the highest common factor (HCF) and lowest common multiple (LCM), both through listing methods and by using Venn diagrams, reinforcing set notation and structured thinking.

The chapter broadens to explore the different types of numbers within the number system, including integers, real numbers, and rational numbers, helping students understand how values are classified. It concludes with an introduction to surds, developing early familiarity with irrational numbers and laying the foundation for more advanced algebraic manipulation.

N12 Percentages

In this chapter, students build on their prior knowledge to confidently handle a wide range of percentage problems. They begin with percentage increase and decrease, then learn to express a change as a percentage, helping them interpret and compare real-world contexts such as price changes and population growth. Students are introduced to the concept of reverse percentages, learning how to find the original value after a percentage change. They practise solving problems both without and with a calculator, choosing appropriate methods based on the context.

The chapter progresses to repeated percentage change, including depreciation and growth, before introducing interest as a financial application. Students explore both simple and compound interest, giving them insight into real-life scenarios such as saving and borrowing money. Throughout, students develop accuracy, reasoning, and the ability to apply their skills flexibly across calculator and non-calculator methods

G7 Area and Volume

In this chapter, students build on their understanding of shape and measurement to explore surface area and volume in more complex contexts. The chapter begins with recognising and constructing nets, helping students visualise 3D shapes and understand their properties. Students revisit the area of 2-D shapes and the area and circumference of circles, before applying this knowledge to calculate the surface area of cubes, cuboids, and more complex solids such as triangular prisms and cylinders (E).They then explore how to calculate the volume of prisms and cylinders, using and rearranging formulae. More advanced shapes are introduced with the volume of cones, pyramids, and spheres (E), encouraging students to apply reasoning and work with unfamiliar formulae. The chapter concludes with practice in converting between metric units of area and volume (E), supporting fluency in measurement and real-world applications.

Knowledge Organisers : Year 9 HT1

N11 – Properties of number

Mathematics

NAME: TARGET GRADE:

YEAR 9 – AUTUMN 1

N11 - PROPERTIES OF NUMBER

Sparx Maths

Factors, multiples and primes – M823, M322, M227, M698
Write a number as a product of prime factors – M108 Use prime factors (E) – M365
Highest common factor (HCF) and lowest common multiple (LCM) – M365, M227, M698
Venn diagrams – M829 Use a Venn diagram to calculate the HCF and LCM – M365, M829
Integers, real numbers and rational numbers – M763, M527, M704, M522
Introduction to surds (E) – M135, U338, U633

What do I need to be able to do?

Step 1 Factors, multiples and primes
Step 2 Write a number as a product of prime factors
Step 3 Use prime factors (E)
Step 4 (HCF) and (LCM)
Step 5 Venn diagrams
Step 6 Use a Venn diagram to calculate the HCF and LCM
Step 7 Integers, real numbers and rational numbers
Step 8 Introduction to surds (E)

Keywords

Multiples – Numbers obtained by multiplying a number by an integer.
Factors – Numbers that divide exactly into another number.
Prime – A number with only two factors: 1 and itself.
Prime factorisation – Writing a number as a product of prime numbers.
Square – A number multiplied by itself (e.g. $4 = 2^2$).
Cube – A number raised to the power of three (e.g. $8 = 2^3$).
Root – The inverse operation of powers (square root, cube root).
HCF – Highest Common Factor, largest factor shared by two numbers.
LCM – Lowest Common Multiple; smallest multiple shared by two numbers.
Venn diagram – A diagram showing common and distinct factors/multiples.
Simplify – Making calculations easier by reducing numbers using factors.

Multiples

The "times table" of a given number

All the numbers in this lists below are multiples of 3.

3, 6, 9, 12, 15…

This list continues and doesn't end

3x, 6x, 9x …

x could take any value and as the variable is a multiple of 3 the answer will also be a multiple of 3

Non example of a multiple

4.5 is not a multiple of 3 because it is 3 x 1.5

Not an integer

Factors

Arrays can help represent factors

5 x 2 or 2 x 5

Factors of 10
1, 2, 5, 10

10 x 1 or 1 x 10

The number itself is always a factor

Factors and expressions

6x × 1 OR 6 × x

Factors of 6x
6, x, 1, 6x, 2x, 3, 3x, 2

2x × 3

3x × 2

Prime numbers

2

- Integer
- Only has 2 factors
- and itself

The first prime number
The only even prime number

Learn or how-to quick recall…

2, 3, 5, 7 , 11, 13, 17, 19, 23, 29…

Square and triangular numbers

Square numbers

odd even odd

Representations are useful to understand a square number n^2

1, 4, 9, 16, 25, 36, 49, 64 …

Triangular numbers

Representations are useful – an extra counter is added to each new row

Add two consecutive triangular numbers and get a square number

1, 3, 6, 10, 15, 21, 28, 36, 45…

Common factors and HCF

1 is a common factor of all numbers

Common factors are factors two or more numbers share

HCF – Highest common factor

HCF of 18 and 30

18: 1, 2, 3, 6, 9, 18
30: 1, 2, 3, 5, 6, 10, 15, 30

Common factors (factors of both numbers)
1, 2, 3, 6

HCF = 6

6 is the biggest factor they share

Common multiples and LCM

Common multiples are multiples two or more numbers share

LCM – Lowest common multiple

LCM of 9 and 12

9: 9, 18, 27, 36, 45, 54
12: 12, 24, 36, 48, 60

LCM = 36

The first time their multiples match

9 18 27 36 45
12 24 36 48

Comparing fractions

$\frac{3}{5}$ and $\frac{7}{10}$ ← Compare fractions using a LCM denominator → $\frac{6}{10}$ and $\frac{7}{10}$

Product of prime factors

Multiplication part-whole models

30 = 2 × 15 = 5 × 3
30 = 3 × 10 = 2 × 5
30 = 5 × 6 = 2 × 3

All three prime factor trees represent the same decomposition

30 = 2 x 3 x 5

Multiplication is commutative

Multiplication of prime factors

Using prime factors for predictions

e.g. 60 = 30 x 2 = 2 x 3 x 5 **x 2**
150 = 30 x 5 = 2 x 3 x 5 **x 5**

Venn diagrams

ξ A B

The LCM is the numbers in both circles

Remember you must multiply the numbers together

ξ A B

The HCF would be the number in overlap

Knowledge Organisers : Year 9 HT1
N12 – Percentages

Mathematics

NAME: TARGET GRADE:

YEAR 9 – AUTUMN 1
N12 - PERCENTAGES

What do I need to be able to do?

Step 1 Percentage increase and decrease
Step 2 Express a change as a percentage
Step 3 Find the original value after a percentage change
Step 4 Solve problems with percentages (non-calculator)
Step 5 Solve problems with percentages (calculator)
Step 6 Repeated percentage change
Step 7 Understand interest
Step 8 Simple interest
Step 9 Compound interest

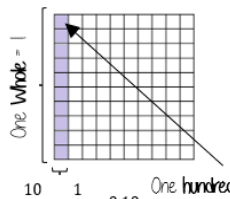
Sparx Maths

Percentage increase and decrease – M476, M533, U773, U671
Express a change as a percentage–U278 Find the original value after a percentage change –U286
Solve problems with percentages (non-calculator) – M437, M476, U554, U773
Solve problems with percentages (calculator) – M905, M533, U349, U671
Repeated percentage change – U332, U988Understand interest – U533
Simple interest – U533 Compound interest – U332

Keywords

Percent: parts per 100 – written using the % symbol
Decimal: a number in our base 10 number system. Numbers to the right of the decimal place are called decimals.
Fraction: a fraction represents how many parts of a whole value you have.
Equivalent: of equal value.
Reduce: to make smaller in value.
Growth: to increase/ to grow.
Integer: whole number, can be positive, negative or zero.
Invest: use money with the goal of it increasing in value over time (usually in a bank).
Multiplier: the number you are multiplying by.
Profit: the income take away any expenses/ costs.

FDP Equivalence



Percentage
100% - a whole - 100 hundredths

10 hundredths
10 out of 100
10%

$\frac{10}{100} = \frac{1}{10} = 0.10$

One **hundredth** (one whole split into 100 equal parts)

ones	tenths	hundredths
•	•	

Converting FDP

$\frac{70}{100}$ → This also means 70 ÷ 100 → 70 out of 100 squares → **70 "hundredths"** = 7 **"tenths"** = 0.7 →  → 70 hundredths = 70%

Using a **calculator**

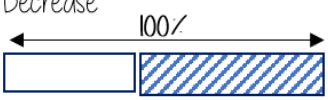
$\frac{\blacksquare}{\square}$ → S⇔D Convert to a decimal

× **100** converts to a percentage

Be careful of recurring decimals
e.g $\frac{1}{3}$ = 0.3333333 = $0.\dot{3}$
The dot above the 3

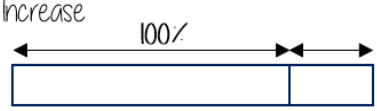
Percentage Increase/ Decrease

Decrease



Decrease by 58%
42%
100 – 058 = 042 ← **Multiplier** Less than 1

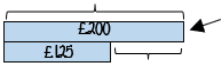
Increase



Increase by 12%
100% + 12% = 112%
100 + 0.12 = 1.12 ← **Multiplier** More than 1

Percentage change

I bought a phone for £200. A year later sold it for £125.



All values of change compare to the ORIGINAL value

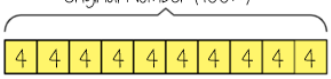
Percentage loss
$\frac{75}{200} \times 100 = 37.5\%$

$$\frac{\text{Difference in values}}{\text{Original value}} \times 100$$

Reverse Percentages

40% of my number is 16. What am I thinking of?

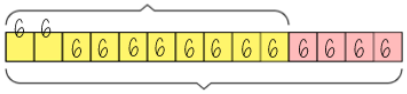
Original Number (100%)



16
40% = 16
10% = 4
100% = 40

140% of my number is 84. What is the original number?

Original Number (100%)



84
140% = 84
10% = 6
100% = 60

Try to scale down to 10% or 1% and then scale back up to 100%

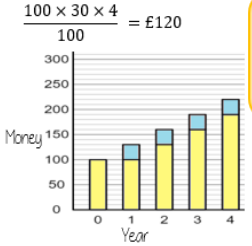
Simple Interest

For each year of investment the interest remains the same

$$\frac{\text{Principal amount} \times \text{Interest Rate} \times \text{Years}}{100}$$

Principal amount is the amount invested in the account.
e.g Invest £100 at 30% simple interest for 4 years

$\frac{100 \times 30 \times 4}{100} = £120$



This account earned **£120** interest. At the end of year 4 they have **£220**

Compound Interest

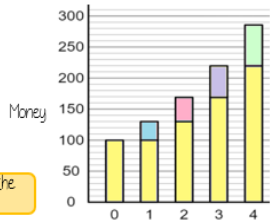
Interest is added to the current value of investment at the end of each year so the next year's interest is greater.

$$\text{Principal amount} \times \text{Multiplier}^{\text{Years}}$$

e.g Invest £100 at 30% compound interest for 4 years

$100 \times 1.30^4 = £285.61$

This account has **£285.61** in total at the end of the 4 years



Knowledge Organisers : Year 9 HT1
G7 Area and Volume

Mathematics

NAME: TARGET GRADE:

YEAR 9 — AUTUMN 1

G7 - AREA AND VOLUME

Sparx Maths

Nets – M518 Area of a 2-D shape – M390, M610, M705, M1269
Area and circumference of a circle – M1231, M1169
Surface area of cubes and cuboids – M534 Surface area of a triangular prism (E) – M661
Surface area of a cylinder (E) – U464 Volume of a prism – M722
Volume of a cylinder – U915 Volume of cones, pyramids and spheres (E) – U116, U484, U617
Convert metric units of area and volume (E) – M728, M465, U248, U468

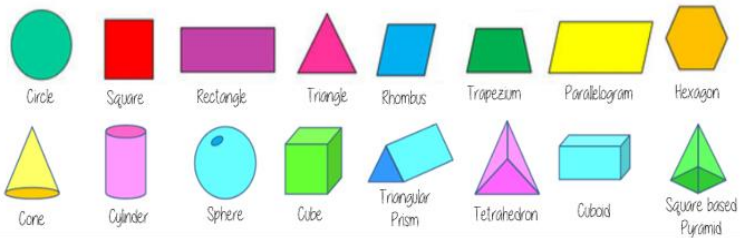
What do I need to be able to do?

Step 1 Nets
Step 2 Area of a 2-D shape
Step 3 Area and circumference of a circle
Step 4 Surface area of cubes and cuboids
Step 5 Surface area of a triangular prism (E)
Step 6 Surface area of a cylinder (E)
Step 7 Volume of a prism
Step 8 Volume of a cylinder
Step 9 Volume of cones, pyramids and spheres (E)
Step 10 Convert metric units of area and volume (E)

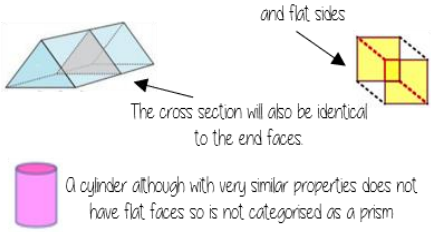
Keywords

2D: two dimensions to the shape e.g. length and width
3D: three dimensions to the shape e.g. length, width and height
Vertex: a point where two or more lines segments meet
Edge: a line on the boundary joining two vertex
Face: a flat surface on a solid object
Cross-section: a view inside a solid shape made by cutting through it
Plan: a drawing of something when drawn from above (sometimes birds eye view)
Perspective: a way to give illustration of a 3D shape when drawn on a flat surface.

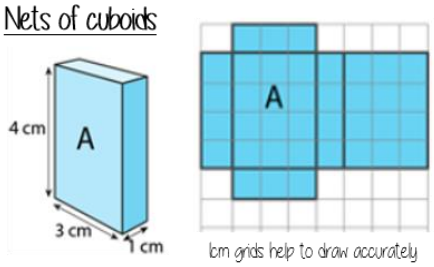
Name 2D & 3D shapes



Recognise prisms

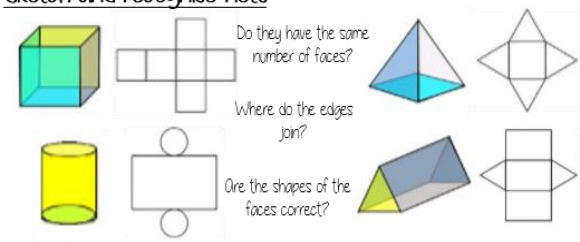


Nets of cuboids

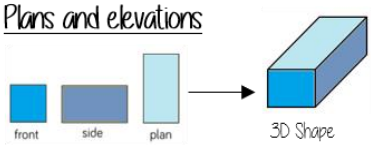


Visualise the folding of the net. Will it make the cuboid with all sides touching

Sketch and recognise nets



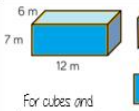
Plans and elevations



The direction you are considering the shape from determines the front and side views

Surface area

Sketching nets first helps you visualise all the sides that will form the overall surface area



Sides	6 x 7 6 x 7	Sum of all sides is surface area
Front and back	12 x 7 12 x 7	
Top and Bottom	12 x 6 12 x 6	

For cubes and cuboids you can also find one of each face and double it



For other shapes - not all the sides are the same, so calculate the individually

Volumes

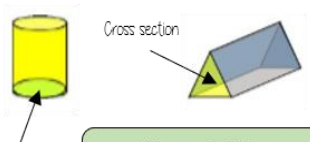
Volume is the 3D space it takes up – also known as capacity if using liquids to fill the space



Counting cubes
Some 3D shape volumes can be calculated by counting the number of cubes that fit inside the shape.

Cubes/ Cuboids - base x width x height

Remember multiplication is commutative



Prisms and cylinders - area cross section x height

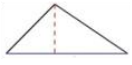
Height can also be described as depth

Area of 2D shapes

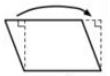
Rectangle
Base x Height



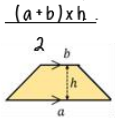
Triangle
½ x Base x Perpendicular height



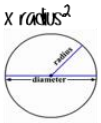
Parallelogram/ Rhombus
Base x Perpendicular height



Area of a trapezium
$\frac{(a+b)\times h}{2}$

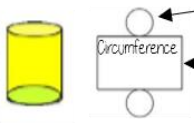


Area of a circle
π x radius²



Surface area - cylinders

The area of the circle
π x radius²



The width of this face is the same as the circumference
π x diameter x height

2 x π x radius² + π x diameter x height

Areas – square units
Volumes – cube units

Areas and volumes can be left in terms of pi π

Mathematics

Year 9 HALF TERM 2:

A9 Equations, inequalities and formulae

In this chapter, students deepen their algebraic fluency with more complex equations and the introduction of inequalities and formulae. They begin by solving equations and inequalities, including those with brackets and unknowns on both sides. For more advanced learners, inequalities involving negative numbers (E) offer challenge and require attention to sign changes when solving.

Students then apply their skills in problem-solving contexts, learning how to form and solve equations and inequalities from written scenarios. They also practise substituting into formulae, including those from real-life and science. The chapter concludes with rearranging formulae to change the subject, starting with one-step and two-step examples and progressing to more complex rearrangements (E), developing fluency and confidence in algebraic manipulation

N13 Fractions

In this short chapter, students consolidate their skills with fractions, focusing on fluency and accuracy in calculations. They begin by practising how to add and subtract fractions, including those with different denominators, reinforcing the importance of common denominators and equivalent fractions.

Next, students move on to multiplying and dividing fractions, including proper, improper, and mixed numbers. The chapter concludes with finding a fraction of an amount, applying fraction operations to solve real-life and contextual problems. This chapter reinforces core number skills and supports learning across algebra, ratio, and proportional reasoning.

R4 Rates

In this chapter, students build on their understanding of ratio and proportion by exploring rates and compound measures. They begin with calculating speed, distance, and time, reinforcing the relationship between the three and applying formulas in both simple and contextual problems.

Next, students interpret and construct distance-time graphs, understanding how gradients represent speed and identifying features such as constant speed, rest, and acceleration. They extend this to solving flow problems using graphs, such as interpreting graphs of filling and emptying containers.

The chapter introduces rates of change, encouraging students to interpret units such as m/s or £/kg and apply them flexibly in real-life contexts. Finally, students practise converting between compound units (E), such as km/h to m/s, supporting a deeper understanding of unit conversion and rate interpretation.

N14 Standard form

In this chapter, students develop their ability to work with very large and very small numbers by learning to express them in standard form. They begin by writing numbers in standard form, recognising the structure of a number written as a power of ten. Students then compare and order numbers in standard form, reinforcing their understanding of place value and exponential notation.

Next, students move on to performing calculations with numbers in standard form. They multiply and divide using the laws of indices, before progressing to adding and subtracting numbers by converting between standard and ordinary form. These skills prepare students for real-world and scientific applications, such as working with distances in space or microscopic measurements.

Knowledge Organisers : Year 9 HT2
A9 Equations, inequalities and formulae

Mathematics

NAME: TARGET GRADE:

YEAR 9 — AUTUMN 2

A9 - EQUATIONS, INEQUALITIES AND FORMULAE

Solve equations and inequalities – M707, M118, U325, U759
Solve equations and inequalities with brackets – M902, U337 Inequalities with negative numbers (E) – U738
Solve equations and inequalities with unknowns on both sides – M554, U870
Solve problems with equations and inequalities – M957, U599
Substitute into formulae and equations – M208, M979, U585
Change the subject of a formula (one-step) – U675
Change the subject of a formula (two-step) – U181

Sparx Maths

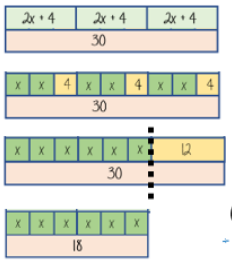
What do I need to be able to do?

Step 1 Solve equations and inequalities
Step 2 Solve equations and inequalities with brackets
Step 3 Inequalities with negative numbers (E)
Step 4 Solve equations and inequalities with unknowns on both sides
Step 5 Solve problems with equations and inequalities
Step 6 Substitute into formulae and equations
Step 7 Change the subject of a formula (one-step)
Step 8 Change the subject of a formula (two-step)
Step 9 Change the subject of complex formula (E)

Keywords

Inequality: an inequality compares who values showing if one is greater than, less than or equal to another
Variable: a quantity that may change within the context of the problem
Rearrange: Change the order
Inverse operation: the operation that reverses the action
Substitute: replace a variable with a numerical value
Solve: find a numerical value that satisfies an equation

Solve equations with brackets



$3(2x + 4) = 30$

Expand the brackets

$6x + 12 = 30$

$-12 \quad -12$

$6x = 18$

$\div 6 \quad \div 6$

$x = 3$

Form and solve inequalities

Two more than treble my number is greater than 11

Find the possible range of values

$3x + 2 > 11$

Solve

$x \leftarrow -3 \leftarrow -2 \leftarrow 11$

$x > 3$

Inequalities with negatives

Method 1 Make x positive first

$2 - 3x > 17$
$+3x \quad +3x$
$2 > 17 + 3x$
$-17 \quad -17$
$-15 > 3x$
$\div 3 \quad \div 3$
$-5 > x$

x is true for any value smaller than -5

Smaller ... Bigger
-7 -5 -3

✓ CHECK IT!
$2 - 3(-6) = 20$
TRUE/ CORRECT

Method 2 Keep the negative x

$2 - 3x > 17$
$-2 \quad -2$
$-3x > 15$
$\div -3 \quad \div -3$
$x > -5$

x is true for any value bigger than -5

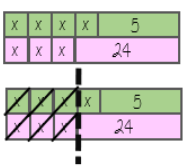
This cannot be true...

$x < -5$

When you multiply or divide x by a negative you need to reverse the inequality

Equations with unknown on both sides

$4x + 5 = 3x + 24$
$-3x \quad -3x$
$x + 5 = 24$
$-5 \quad -5$
$x = 19$



Inequalities with unknown on both sides

Solving inequalities has the same method as equations

$5(x + 4) < 3(x + 2)$
$5x + 20 < 3x + 6$
$2x + 20 < 6$
$2x < -14$
$x < -7$

Check it!

$5(-8 + 4) < 3(-8 + 2)$
$5(-4) < 3(-6)$
$-20 < -18$
✓ -20 IS smaller than -18

Formulae and Equations

Formulae – all expressed in symbols

Substitute in values

Equations – include numbers and can be solved

Rearranging Formulae (one step)



$x = y + z$

Rearrange to make y the subject.

$y = x - z$

$y \rightarrow +z \rightarrow x$

$y \leftarrow -z \leftarrow x$

Using inverse operations or fact families will guide you through rearranging formulae

Rearranging can also be checked by substitution.

Language of rearranging...

Make XXX the subject

Change the subject

Rearrange

Rearranging Formulae (two step)

In an equation (find x)

$4x - 3 = 9$
$+3 \quad +3$
$4x = 12$
$\div 4 \quad \div 4$
$x = 3$

In a formula (make x the subject)

$xy - s = a$
$+s \quad +s$
$xy = a + s$
$\div y \quad \div y$
$x = \frac{a + s}{y}$

The steps are the same for solving and rearranging

Rearranging is often needed when using $y = mx + c$

e.g. Find the gradient of the line $2y - 4x = 9$

Make y the subject first $y = \frac{4x + 9}{2}$

Gradient $= \frac{4}{2} = 2$

Knowledge Organisers : Year 9 HT2
N13 Fractions

Mathematics

NAME: TARGET GRADE:

YEAR 9 — AUTUMN 2

N13 - FRACTIONS

Sparx Maths

Add and subtract fractions – M835, M931
Multiply and divide fractions – M157, M110, M197, M265
Fraction of an amount – M695, M684

What do I need to be able to do?

Step 1 Add and subtract fractions

Step 2 Multiply and divide fractions

Step 3 Fraction of an amount

Keywords

Numerator : the number above the line on a fraction. The top number. Represents how many parts are taken

Denominator: the number below the line on a fraction. The number represent the total number of parts

Equivalent: of equal value

Mixed numbers: a number with an integer and a proper fraction

Improper fractions: a fraction with a bigger numerator than denominator

Substitute: replace a variable with a numerical value

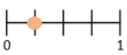
Place value: the value of a digit depending on its place in a number. In our decimal number system, each place is 10 times bigger than the place to its right

Representing Fractions



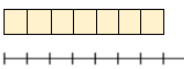
$\frac{1}{4}$ is represented in all the images



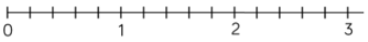


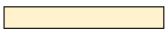
$1 \div 4$

Mixed numbers and fractions



$\frac{7}{5}$ Improper fraction





$1\frac{2}{5}$ Mixed number

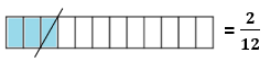
In this model 5 parts make up a whole

Fractions can be bigger than a whole

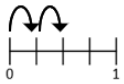
Add/Subtract unit fractions

Same denominator

$\frac{1}{12} + \frac{1}{12} - \frac{1}{12} = \frac{2}{12}$



$\frac{1}{4} + \frac{1}{4} = \frac{2}{4}$

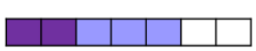


With the same denominator ONLY the numerator is added or subtracted

Add/Subtract fractions

Same denominator

$\frac{2}{7} + \frac{3}{7} = \frac{5}{7}$



Sequences



$\frac{1}{3}, 1, 1\frac{2}{3}, 2\frac{1}{3}, 3, \ldots$

$+\frac{2}{3}$ $+\frac{2}{3}$

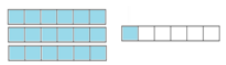
Represent this on a number line to help

Add/Subtract from integers

$1 - \frac{2}{6} = \frac{4}{6}$



$3 + \frac{1}{6} = 3\frac{1}{6}$

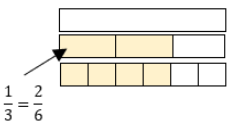


The denominator indicates the number of parts a whole is made up of

Equivalent fractions

Numerator and denominator have the same multiplier

$\frac{2}{3} = \frac{4}{6}$

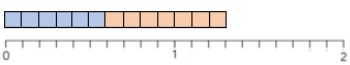


Add/Subtraction fractions (common multiples)

$\frac{3}{5} + \frac{7}{10}$

$\frac{6}{10} + \frac{7}{10}$

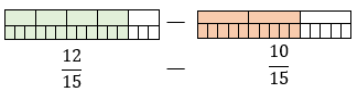
Addition/Subtraction needs a common denominator



$\frac{13}{10}$

Add/Subtraction any fractions

$\frac{4}{5} - \frac{2}{3}$



$\frac{12}{15} - \frac{10}{15} = \frac{2}{15}$

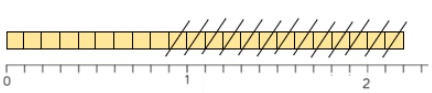
Use equivalent fractions to find a common multiple for both denominators

Add/Subtraction fractions (improper and mixed)

$2\frac{1}{5} - 1\frac{3}{10}$

$2\frac{2}{10}$

$\frac{22}{10} - \frac{13}{10} = \frac{9}{10}$



- Convert to an improper fraction
- Calculate with common denominator

Partitioning method

$2\frac{1}{5} - 1\frac{3}{10} = 2\frac{2}{10} - 1\frac{3}{10} = 2\frac{2}{10} - 1 - \frac{3}{10} = 1\frac{2}{10} - \frac{3}{10} = \frac{9}{10}$

Quick Multiplying and Cancelling down

$\frac{1}{5} \times \frac{4}{3}$

The 3 and the 9 have a common factor and can be simplified

$\frac{1 \times 4}{5 \times 3} = \frac{4}{15}$

Quick Solving
Multiply the numerators
Multiply the denominators

Dividing any fractions

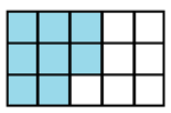
Remember to use reciprocals

$\frac{2}{5} \div \frac{3}{4}$

$\frac{2}{5} \times \frac{4}{3}$

Multiplying by a reciprocal gives the same outcome

Represented



$= \frac{8}{15}$

Knowledge Organisers : Year 9 HT2
R4 Rates

Mathematics

NAME: TARGET GRADE:

YEAR 9 — AUTUMN 2
R4 - RATES

Sparx Maths

Speed, distance and time – U151, U902, U585, U144
Distance-time graphs – U403, U914, U462, U966
Solve flow problems and their graphs – U652, U862, U896
Rates of change and their units – U256, U151, U527, U910
Convert compound units (E) – U388, U248, U468

What do I need to be able to do?

Step 1 Speed, distance and time
Step 2 Distance-time graphs
Step 3 Solve flow problems and their graphs
Step 4 Rates of change and their units
Step 5 Convert compound units (E)

Keywords

Convert: change
Mass: a measure of how much matter is in an object. Commonly measured by weight.
Origin: the coordinate (0, 0)
Volume: the amount of 3D space a shape takes up
Substitute: putting numbers where letters are – replacing numbers into a formula

Speed, Distance, Time

"per" for every
e.g. 80 miles per hour (mph)
Travel 80 miles every hour

$$\text{speed} = \frac{\text{distance}}{\text{time}}$$

You can use a double number line to help you calculate distance

Hours	0	0.5	1	2	2.5
Miles	0	40	80	160	200

e.g. A boat travels at a constant speed for 2.5 hours
It travels 300 miles.

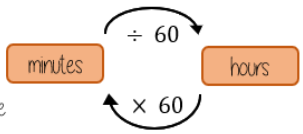
Bar models can help to calculate mph



Each part is half an hour
Each part is 60 miles

Speed, Distance, Time





Before calculations – make sure you are working in the same units as the speed

Learn or learn how to rearrange the formular for speed, distance and time

$$\text{time} = \frac{\text{distance}}{\text{speed}}$$

Substitute in the variables given

$$\text{distance} = \text{speed} \times \text{time}$$

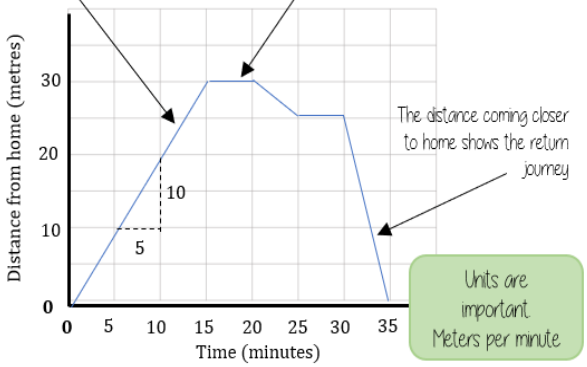
Distance – Time graphs

Gradient = speed

The steeper a gradient the faster the speed

$\frac{10}{5} = 2$ metres per min

Horizontal lines represent staying still



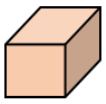
Units are important
Meters per minute

Density, Mass, Volume

$$\text{density} = \frac{\text{mass}}{\text{volume}}$$

$$\text{volume} = \frac{\text{mass}}{\text{density}}$$

$$\text{mass} = \text{volume} \times \text{density}$$



volume of prism = Area of cross section × Depth

Flow problems & graphs



This will fill at a constant rate, then as the space decreases it will speed up and the neck of the bottle fill at a faster constant speed



The cylinder will fill at a constant speed



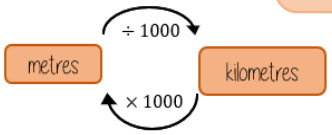
Units are important
Ensure any volume calculations are the same unit as the rate of flow

Rates of change & units

Common rates of change relationships

Revisit your conversions between units of length and capacity

Speed: miles **per** hour
Exchange rates: euros **per** pounds
Density: mass **per** volume



Knowledge Organisers : Year 9 HT2
N14 Standard form

Mathematics

NAME: TARGET GRADE:

YEAR 9 — AUTUMN 2
N14 - STANDARD FORM

Sparx Maths

Numbers in standard form – M7.19, U33.0
Compare and order numbers in standard form M7.19, U33.0
Multiply and divide numbers in standard form – U26.4
Add and subtract numbers in standard form – U29.0

What do I need to be able to do?

Step 1 Numbers in standard form
Step 2 Compare and order numbers in standard form
Step 3 Multiply and divide numbers in standard form
Step 4 Add and subtract numbers in standard form

Keywords

Standard (index) Form: A system of writing very big or very small numbers
Commutative: an operation is commutative if changing the order does not change the result
Base: The number that gets multiplied by a power
Power: The exponent – or the number that tells you how many times to use the number in multiplication
Exponent: The power – or the number that tells you how many times to use the number in multiplication
Indices: The power or the exponent
Negative: A value below zero

Positive powers of 10

1 billion – 1 000 000 000
$10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 = 10^9$

Addition rule for indices: $10^a \times 10^b = 10^{a+b}$

Subtraction rule for indices: $10^a \div 10^b = 10^{a-b}$

Standard form with numbers >1

Any number between 1 and less than 10 — $A \times 10^n$ — Any integer

Example
3.2×10^4
$= 3.2 \times 10 \times 10 \times 10 \times 10$
$= 32000$

Non-example
0.8×10^4
$5.3 \times 10^{0.7}$

Negative powers of 10

	10	1	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$
0.001					
$1 \times \frac{1}{1000}$	10^1	10^0	10^{-1}	10^{-2}	10^{-3}
1×10^{-3}	0	0	0	0	1

Any value to the power 0 always = 1

Negative powers do not indicate negative solutions

Numbers between 0 and 1

$0.054 = 5.4 \times 10^{-2}$

1	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$
10^0	10^{-1}	10^{-2}	10^{-3}
0	0	5	4

A negative power does not mean a negative answer – it means a number closer to 0

Order numbers in standard form

10^2	10^1	10^0	10^{-1}	10^{-2}	10^{-3}	10^{-4}

6.4×10^{-2}	2.4×10^2	3.3×10^0	1.3×10^{-1}
0.064	240	1	0.13

Look at the power first will the number be - > or < than 1

Use a place value grid to compare the numbers for ordering

Mental calculations

$6.4 \times 10^2 \times 1000$ Not in Standard Form
$= 6.4 \times 10^2 \times 10^3$ Use addition for indices rule
$= 6.4 \times 10^5$

$(8) \times 10^5 \times (3)$
$= 24 \times 10^5$ Not in Standard Form
$= 2.4 \times 10^1 \times 10^5$ Use addition for indices rule
$= 2.4 \times 10^6$

$(2 \times 10^3) \div 4$ Divide the values
$= (2 \div 4) \times 10^3$
$= 0.5 \times 10^3$

Remember the layout for standard form

Any number between 1 and less than 10 — $A \times 10^n$ — Any integer

Addition and Subtraction

Tip: Convert into ordinary numbers first and back to standard from at the end.

$6 \times 10^5 + 8 \times 10^5$

Method 1
- 600000 + 800000
- 1400000
- 1.4×10^5

More robust method
Less room for misconceptions
Easier to do calculations with negative indices
Can use for different powers

Method 2
- $(6 + 8) \times 10^5$
- 14×10^5
- $1.4 \times 10^1 \times 10^5$
- 1.4×10^5

This is not the final answer

Only works if the powers are the same

Multiplication and division

$\frac{1.5 \times 10^5}{0.3 \times 10^3}$ Division questions can look like this

$(1.5 \times 10^5) \div (0.3 \times 10^3)$

$15 \div 0.3 \times 10^5 \div 10^3$

$= 5 \times 10^2$

For multiplication and division you can look at the values for A and the powers of 10 as two separate calculations

Revisit addition and subtraction laws for indices – they are needed for the calculations

Addition law for indices: $a^m \times a^n = a^{m+n}$

Subtraction law for indices: $a^m \div a^n = a^{m-n}$

Using a calculator

$1.4 \times 10^5 \times 3.9 \times 10^3$

Use a calculator to work out this question to a suitable degree of accuracy

Input 1.4 and press [×10^x] Then press 5 (for the power)
Press [×]
Input 3.9 and press [×10^x] Then press 3 (for the power)
Press [=]

This gives you the solution

Click calculator for video tutorial

To put into standard form and a suitable degree of accuracy
Press [SHIFT] [SETUP] and then press 7 for sci mode.
Choose a degree of accuracy so in most cases press 2

Answer: 5.5×10^5

MFL: Y9 Term 1

German Knowledge Organiser : Year 9 Topic 1 — Education

Subjects

Biologie	biology
Chemie	chemistry
Deutsch	German
Englisch	English
Erdkunde	geography
Französisch	French
Geschichte	history
Informatik	ICT
Kunst	art
Mathe	maths
Musik	music
Physik	physics
Religion	R.E.
Spanisch	Spanish
Sport	P.E.
Sprachen	languages
Theater	drama
Wissenschaften	sciences

Opinions

Mein Lieblingsfach ist	My favourite subject is
ich liebe	I love
ich mag	I like
ich lerne gern	I like learning
ich lerne nicht gern	I don't like learning
ich hasse	I hate
weil es...ist	because it is
obwohl es...ist	even though it is
anstrengend	demanding
einfach	easy
interessant	interesting
kompliziert	complicated
langweilig	boring
leicht	easy
nützlich	useful
praktisch	practical
schwer	hard
wichtig	important
weil ich gut in...bin	because I am good at
weil ich schwach in...bin	because I am weak at
weil ich sportlich bin	because I'm sporty
weil ich Sprachen liebe	because I love languages.

Uniform Opinions

ich finde es...	I find it
ich glaube,...	I believe
ich denke,...	I think
praktisch	practical
langweilig	boring
teuer	expensive
billig	cheap
bequem	comfortable
hässlich	ugly
unbequem	uncomfortable
Meine Schuluniform...	my school uniform
meine Kleidung	my clothes
zeigt meinen Charakter	shows my personality
verhindert Mobbing	prevents bullying
ist ein gutes Image für die Schule	is a good image for the school

Uniform

ich trage	I wear
einen Pullover	a jumper
einen Rock	a skirt
eine Hose	trousers
eine Jacke	a blazer
eine Jeans	jeans
eine Schuluniform	a school uniform
ein Hemd	a shirt
ein Kleid	a dress
ein T-Shirt	a t-shirt

Colours

rot	red
blau	blue
grau	grey
schwarz	black
grün	green
weiß	white
orange	orange
gelb	yellow
braun	brown
violett, lila	purple
hell	light
dunkel	dark

Classrooms

ein Klassenzimmer	a classroom
einen Computerraum	a computer room
einen Gang	a corridor
eine Kantine	a canteen
eine Turnhalle	a sports hall
einen Schulhof	a playground
die Toiletten	toilets
einen Labor	laboratory

Breaktime

einen Bagel essen	to eat a bagel
Wasser trinken	to drink water
Fußball spielen	to play football
mit Freunden sprechen	to speak with friends
die Hausaufgaben machen	to do homework
spazieren gehen	to go for a walk
auf dem Schulhof chillen	to chill on the playground
Essen kaufen	to buy a snack
zeichnen	to draw
in die Bibliothek gehen	to go to the library

German

Knowledge Organiser : Year 9 Topic 2

Future Plans

Jobs

Schauspieler	actor
Architekt	architect
Designer	designer
Lehrer	teacher
Sänger	singer
Tänzer	dancer
Arzt	doctor
Journalist	journalist
Koch	chef
Polizist	police officer
Anwalt	lawyer
Pilot	Pilot
Buchhalter	accountant
Informatiker	computer scientist
Elektriker	electrician

Pros and Cons of Work

die Arbeit ist	the work is
schwierig	difficult
einfach	easy
gut bezahlt	well paid
gefährlich	dangerous
schlecht bezahlt	badly paid
abwechslungsreich	varied
man trifft neue Leute	you meet new people
man lernt neue Dinge	you learn new things
man muss früh aufstehen	You have to get up early
man arbeitet lange Stunden	you work a lot of hours
Man hilft anderen Menschen.	you help other people

Workplaces

in einer Schule	in a school
im Büro	in an office
zu Hause	at home
in einem Geschäft	in a shop
im Krankenhausin	in a hospital
draußen	outside
in einer Fabrik	in a factory
in einem Flughafen	in an airport
im Labor	in a laboratory
in einem Restaurant	in a restaurant

Qualities

freundlich	friendly
organisiert	organised
höflich	polite
pünktlich	punctual
geduldig	patient
unabhängig	independent
faul	lazy
hilfsbereit	helpful
ehrlich	honest
fleißig	hard-working

Tasks

Menschen helfen	to help people
Berichte schreiben	to write reports
Essen kochen	to cook food
Autos reparieren	to repair cars
Probleme lösen	to solve problems
mit Computern arbeiten	to work with computers
Produkte verkaufen	to sell products
reisen	to travel
E-mails lesen	to read emails
Kaffee kochen	to make coffee

Ambitions

reich sein	to be rich
berühmt sein	to be famous
im Ausland arbeiten	to work abroad
eine Ausbildung machen	to do an apprenticeship
auf die Uni gehen	to go to university
anderen helfen	to help others
heiraten	to get married
Kinder haben	to have children
um die Welt reisen	to travel around the world
einen Hund haben	to have a dog

Future Time Phrases

in der Zukunft	in the future
später	later
in [zwei] Jahren	in [two] years
nach der Schule	after school
wenn ich älter bin, werde ich	When I'm older, I will...
eines Tages	some day

Stretch & Challenge

etwas Sinnvolles machen	to do sth useful
eine eigene Firma gründen	to found a business
eine neue Fremdsprache lernen	to learn a new foreign language
glücklich sein	to be happy
die Welt ändern	to change the world

GRAMMAR

Subordinating Conjunctions

weil/da = because
obwohl = although/even though
They send the verb to the end
Ich spiele gern Fußball, weil es toll ist
(I like playing football because it is great)

The Future Tense

ich werde = I will
er wird = he will
sie wird = she will
wir werden = we will
sie werden = they will

These take an infinitive at the end of the sentence
Ich werde zu Hause arbeiten
I will work at home

would

ich möchte = would like
ich würde gern = I would like to
ich würde lieber = I would prefer to
ich würde nicht gern = I wouldn't like to
ich würde am liebsten = I would like to the most

French Knowledge Organiser : Year 9 Topic 1

Education

School Subjects

l'anglais	- English
le théâtre	- drama
la biologie	- biology
l'EPS	- PE
l'histoire-géo	- history/geography
l'informatique	- ICT
la musique	- music
les maths	- maths
la physique	- physics
la technologie	- DT
le français	- French
les sciences	- science
la religion	- RS

Opinion Structures

Ma matière préférée, c'est ...	- my favourite subject is...
j'adore	- I love
j'aime	- I like
j'aime beaucoup	- I like a lot
j'aime assez	- I quite like
je n'aime pas	- I don't like
je déteste	- I hate
parce que c'est...	- because it is...
facile	- easy
difficile	- difficult
ennuyeux	- boring
utile	- useful
inutile	- useless
nul	- rubbish
pratique	- practical
important	- important
amusant	- fun
passionnant	- exciting
super	- super
terrible	- terrible

Classrooms

une salle de classe	- classroom
une salle de français	- French room
une cantine	- canteen
un couloir	- corridor
une cour	- playground
un gymnase	- sports hall
un laboratoire	- laboratory
une salle d'informatique	- computer room
une piscine	- pool
une bibliothèque	- library

School Uniform - Opinions

pratique	- practical
inutile	- useless
confortable	- comfortable
une perte d'argent	- a waste of money
cher	- expensive
embêtant	- annoying
c'est une bonne idée	- it's a good idea
démodé	- old-fashioned

School Uniform

porter	- to wear
un pantalon	- trousers
une jupe	- a skirt
un collant	- tights
une chemise	- a shirt
un tee-shirt	- a t-shirt
un pull	- a jumper
une cravate	- a tie
une veste	- a blazer
un manteau	- a coat
des chaussures	- shoes
des baskets	- trainers

School Rules - Opinions

à mon avis	- in my opinion
je pense que	- I think that
c'est	- it is
unjuste	- unfair
juste	- fair
important	- important
stupide	- stupid
parce que	- because
c'est utile pour le travail scolaire	- it's useful for schoolwork
c'est essentiel pour les examens	- it's essential for exams
pratique	- practical
trop strict / sévère	- too strict
pour la sécurité des élèves	- for safety of pupils
pour avoir un sens de l'ordre	- to have a sense of order
inutile	- useless

School Opinions

je trouve que	- I find that
je pense que	- I think that
les salles sont	- the classrooms are
le collège est	- the school is
affreux	- awful
agréable	- pleasant
beau	- beautiful
calme	- calm
énorme	- enormous
petit	- small
formidable	- terrific
grand	- big
moderne	- modern
sale	- dirty
propre	- clean

School Rules

il faut	- you must
il ne faut pas	- you must not
porter l'uniforme scolaire	- wear a school uniform
faire ses devoirs	- do your homework
respecter les profs	- respect the teacher
respecter les autres	- respect other people
arriver en retard	- arrive late
manger en classe	- eat in class
utiliser son portable en classe	- use your phone in class
fumer	- smoke
dire des gros mots	- say swear words
harceler	- bully

Colours

bleu	- blue
noir	- black
vert	- green
gris	- grey
rouge	- red
rose	- pink
jaune	- yellow
orange	- orange
blanc	- white
marron	- brown

Breaktime

jouer au foot	to play football
retrouver mes amis	to meet up with my friends
rigoler	to have a laugh
prendre un goûter	to have a snack
acheter une Boisson	to buy a drink
faire mes devoirs	to do my homework
lire	to read
aller à la bibliothèque	to go to the library
bavarder	to chat
manger	to eat

French Knowledge Organiser : Year 9 Topic 2

Future Plans

Jobs

acteur/actrice	- actor/actress
architecte	- architect
danseur/danseuse	- dancer
dessinateur/dessinatrice	- designer
chanteur/chanteuse	- singer
un homme d'affaires/une femme d'affaires	- buisnessman/woman
comptable	- accountant
secrétaire	- secretary
directeur/directrice	- manager
journaliste	- journalist
professeur/professeure	- teacher
policier/policière	- police officer
médecin	- doctor
avocat/avocate	- lawyer

Pros and Cons of Work

le travail est	- the work is
bien payé	- well paid
Intéressant	- interesting
dangereux	- dangerous
difficile	- difficult
un point positif, c'est que	- an advantage is that
un point negatif, c'est que	- a disadvantage is that
les heures sont longues	- the hours are long
les gens sont sympas	- the people are friendly
la formation dure longtemps	- the meeting lasts a long time
prendre ses propres decisions	- to make your own decisions
on ne gagne pas beaucoup d'argent	- you don't earn a lot of money

Future Tense Time Phrases

à l'avenir	- in the future
l'année prochaine	- next year
le mois prochain	- next month
Demain	- tomorrow
la semaine prochaine	- next week
après le collège	- after school
dans...ans	- in ... years

Workplaces

une école	school
un hôpital	hospital
un restaurant	restaurant
un magasin	shop
un bureau	office
une usine	factory
dehors	outside
un tribunal	courthouse

Personal Qualities

travailleur/travailleuse	hard-working
organisé	organised
ponctuel/ponctuelle	punctual
créatif/créative	creative
ambitieux/ambitieuse	ambitious
fiable	reliable
honnête	honest
responsable	responsible
gentil/gentille	nice
soigneux/soigneuse	careful

My Skills

ma passion, c'est...	- my passion is
le sport	- sport
le théâtre	- theatre
la lecture	- reading
l'environnement	- environment
la mode	- fashion
les films	- films
les ordinateurs	- computers
les langues étrangères	- foreign languages
travailleur/travailleuse	- hard-working
patient/patiente	- patient
une attitude positive	- a positive attitude
responsable	- responsible
indépendant(e)	- independent
organisé(e)	- organised

Work Tasks

nettoyer le bureau	- to clean the office
donner des conseils aux clients	- to give advice to customers
travailler sur ordinateur	- to work on the computer
préparer du thé/du café	- to prepare tea/coffee
aider les gens	- to help people
parler aux clients	- to talk to customers
s'occuper des enfants	- to look after the children
gérer l'argent	- to manage money
laver les voitures	- to clean cars
écrire des emails	- to write emails

In the Future

je voudrais	- I would like
voyager dans le monde entier	- to travel all over the world
devenir [avocat]	- to become [a lawyer]
habiter à l'étranger	- to live abroad
acheter une maison	- to buy a house
être riche	- to be rich
être célèbre	- to be famous
aller à l'université	- to go to university
faire une apprentissage	- to do an apprenticeship
avoir des enfants	- to have children

PE: Y9 Term 1

PE Knowledge Organiser: Y9 – Fitness

Principles of training: SPORT

Specificity: Training must match the requirements of the activity so that the right muscles and body systems are adapted

Progression Overload: Gradually increasing the amount of working training so that fitness gains occur, but without the risk of injury

Reversibility: Just as fitness improves with training it can decline if you stop training

Tedium: This is the boredom that can occur when you train the same way every time. A variety of training methods are needed to keep motivated to carry on without giving up

Applying overload to the F.I.T.T principle:

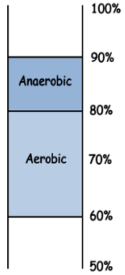
Frequency: How often you train (should be gradually increased) Week 1 = train once per week - Week 2 = train twice per week

Intensity: How hard you train (should be gradually increased) Week 1 = 1 set of 5 repetitions of a 5 kg weight - Week 2 = 2 sets of 5 repetitions of a 5 kg weight

Time: How long you train (should be gradually increased) Week 1 = 20-minute session - Week 2 = 25-minute session

Type: Relates to specificity. training should closely match the activity. E.g. A marathon runner should use continuous training

Training intensities:



Aerobic target zone:
60% - 80% of max heart rate

Anaerobic training zone:
80% - 90% of max heart rate

Max Heart rate:
220 - age

Strength/Power
high weight/low reps above 70% of 1 rep max (3 sets of 4/8 reps

Muscular endurance
low weight/high res below 70% of 1 rep max (3 sets of 12-15 reps

Warm up movements no equipment

Jumping Jacks:
Stand with feet together and arms at your sides.
Jump while spreading your legs shoulder-width apart and raising your arms overhead.
Return to the starting position and repeat.

High Knees:
Stand in place and lift each knee up towards your chest alternatively.
Swing your arms in rhythm with your knees.

Butt Kicks:
Jog in place and kick your heels up towards your buttocks, alternating legs.
Swing your arms to assist the movement.

Leg Swings:
Hold onto a stable object (like a wall) for balance.
Swing one leg forward and backward, then sideways, in a controlled manner.
Switch legs and repeat.

Arm Circles:
Stand with feet shoulder-width apart and extend arms straight out to the sides.
Make small circles with your arms, gradually increasing the size of the circles.

Cardiovascular Warm-Ups

Marching or Jogging in Place:
Lift your knees alternately towards your chest (marching) or jog lightly in place.
Gradually increase the speed to raise your heart rate.

Side Shuffles:
Stand with feet hip-width apart and shuffle sideways, keeping your knees bent and chest up.
Use small, quick steps to move from side to side.

Other Techniques

Shadow Boxing:
Stand in a stable stance and throw punches (jabs, crosses, hooks) in the air.
Focus on form and speed, rotating your hips and pivoting your feet.

Bodyweight Squats:
Stand with feet shoulder-width apart and lower your body into a squat position.
Keep your chest up, back straight, and weight on your heels.
Rise back up and repeat, focusing on controlled movement.

Inchworms:
Stand with feet hip-width apart and bend forward, placing your hands on the ground in front of you.
Walk your hands forward until you are in a plank position.
Walk your feet towards your hands and return to standing.

PE Knowledge Organiser: Y9 - Badminton Overview

WHAT IS BADMINTON

General – Badminton is a **net and wall** game in which players use a **racquet** to hit a **shuttlecock** over a net. Players aim to land the shuttlecock in their opponent's court or force an error. It is played in **singles** or **doubles**.

Scoring – A point is awarded after every rally regardless of who served (rally point system). Games are played to **21 points** and matches are the best of **three sets**.

Objective – To outwit your opponent using a combination of technical skills, strategy, and movement. Players aim to force errors or place the shuttlecock where the opponent cannot return it.

Rules and Regulations

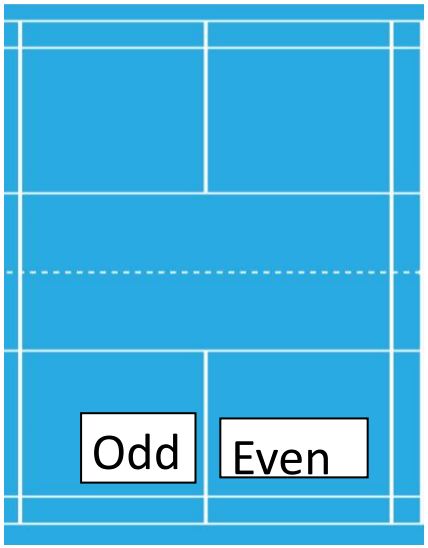
1. A game can take place with either two (singles) or four (doubles) players
2. The aim is to score points by landing the shuttle within the parameters of the opponent's side of the court
3. A point is scored every rally, regardless of who served
4. Games are played to 21 points; Matches are played best of three sets
5. If the shuttle lands on the line, it is deemed as in.

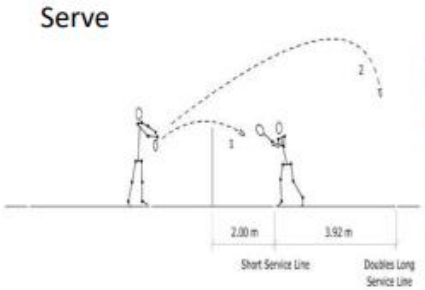
Court Marking and Serving

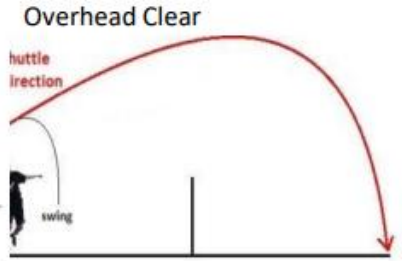
At the beginning of the game (0-0) and when the servers score is even, they serve from the right hand service box
- If servers score is odd, they serve from the left service box
- In doubles, the same player continues to serve until the point is lost. When service is won back, the other player serves

Key Terms/Vocabulary

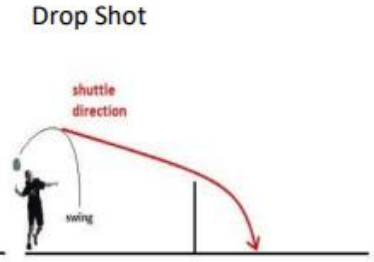
- Ready position
- Forehand and backhand serve
- Overhead clear
- Drop shot
- Net shot
- Underarm clear
- Court markings
- Outwitting opponents
- Shuttlecock
- Tactics
- Consistency
- Agility
- Footwork
- Scoring system
- Rotation
- Recovery











PE Knowledge Organiser: Y9 - Badminton Techniques

1. Over head clear/ serving - recap

Key Teaching Points (KTP's) - Over head clear

- Forehand grip
- Sideway stance! Emphasis! Non racket foot forward, non racket hand pointing towards the shuttle
- Racket behind head,
- Contact at the highest point possible, slightly in front of the body.

Key teaching points (KTP)- Forehand serve

- Forehand grip (shaking hands)
- Feet shoulder width apart, non-racket foot slightly forward
-Shuttle position In front and to the side of body
-Drop the shuttle as the racket swings making contact below the waist.

2. Advanced serving- flick and drive serve

Key Teaching Points (KTP's) Flick serve
Backhand grip, non-racket foot forward, racket below waist.
Show normal backhand serve, then flick wrist upward to deceive.
Lift shuttle up and over to the back court.

Key Teaching Points (KTP's) Drive serve
Backhand grip, non-racket foot forward, racket below waist.
Show normal backhand serve, then flick wrist upward to deceive. Lift shuttle up and over to the back court.

When would I need to be able to use this skill?
When you want to apply pressure by surprising your opponent with a fast, attacking serve aimed at the back of the court.

3. Underhand clear forehand/ backhand

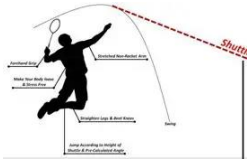


Key Teaching Points (KTP's)

- Thumb on flat side of grip
- Shuttle held near racket face
- Short, controlled flick below waist
- Contact in front of body

When would I need to be able to use this skill?
To serve short in singles or doubles
To vary serve placement and catch opponent off guard

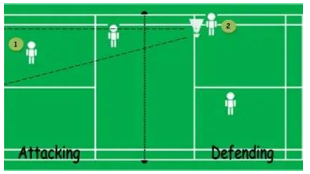
4. Smash



Key Teaching Points (KTP's)
Forehand grip, side on stance non racket foot forward.
Racket behind head and non-racket arm pointing towards the shuttle
Contact high, wrist snap at contact
Forward to downward in straight line.

When would I need to be able to use this skill?
-when you want to finish the rally by hitting a fast, downward shot to pressure your opponent or force an immediate point

5. Double play



Key Teaching Points (KTP's)

- Attacking formation- front and back
- Defensive formation- side by side.
- Back player, powerful shots
- Front player, net kills or recovery/weak shots.

When would I need to be able to use this skill?
when you need to work with your partner to cover the court efficiently, maintain attacking formation, and create opportunities through teamwork, rotation, and fast, coordinated shots.

6. Attack vs Defensive plays- shot choice

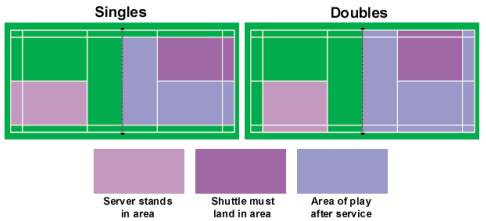
Key Teaching Points (KTP's)
Attack: Smashes, drop shots, net kills (aim to finish the rally
Défense: Clears, blocks and drives (to maintain the rally)

When would I need to be able to use this skill?
Rallies constantly change, and being strong in both lets you create chances to win points while also staying in the game when under pressure

7. Single game play

Court: Singles side lines are in; back tramlines are out.
Scoring: Best of 3 games to 21 points, must win by 2 (cap at 30).
Serving: Serve diagonally, below the waist; serve from right when score is even, left when odd.
Faults: Shuttle landing out, hitting the net and not going over, double hits, or touching your body/racket illegally.
Rally Point: Every rally scores a point, regardless of who served.
Service Change: Server switches sides each time they win a point; service passes to opponent when they lose a rally.
Let: Rally is replayed if interrupted or unclear

8. Double game play



PE

Knowledge Organiser: Y9 – Basketball Overview

Scoring system

A shot into your opponent's basket can be worth one, two or three points:

- A successful free throw is worth one point. The free throw is taken from behind the free throw line with five other players (3 defenders and 2 attackers) lining up along the side of the free throw line in spaces marked on the floor
- A basket scored from within the three-point line (the large semi-circle on the floor) is worth two points
- A basket scored from behind the three-point line is worth is worth three points. For the shot to count the shooter must have both feet behind the three-point line at the moment of release

Timing regulations

The Game: A game of basketball lasts 40 minutes split into four 10-minute quarters with 2 minutes between quarters. The clock is stopped every time the referee blows the whistle, so in real terms a game will last longer.

3 Second Rule: No attacking player must remain for more than 3 seconds inside the opponents restricted area (Key) when their team is in possession of the ball. To do so is a violation.

5 Second rule: A closely guarded player must pass, shoot or dribble the ball within 5 seconds, else a violation occurs and the opposition obtain possession of the ball at the nearest point on the sideline

8 Second rule: Once a player gains control of the ball in their backcourt their team must within 8 seconds transfer the ball into the frontcourt

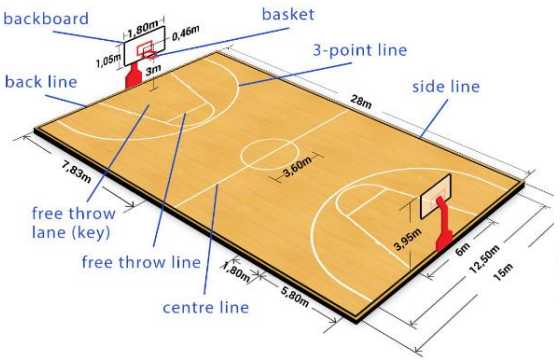
24 Second Rule: Whenever a team gains control of the ball they must attempt for a basket within 24 seconds

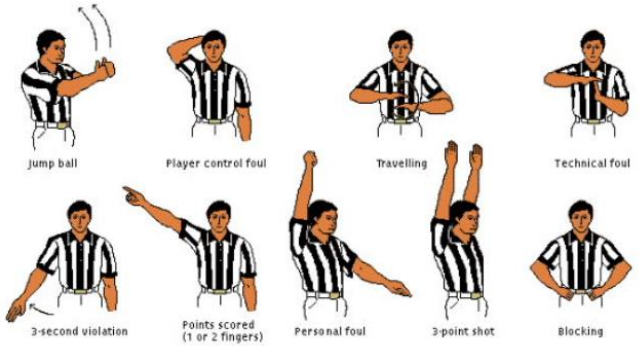
Basic Rules

- Basketball is a team passing game played with the hands.
- Each team tries to throw the ball into a target that is above head height.
- It is played with three main rules concerned with:-
  - Contact
  - Dribbling
  - Footwork while holding the ball

Key Terms/Vocabulary

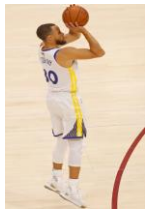
- Ball control
- Catching
- Set/Form shot
- Bank shot
- Lay up
- Passing
- Dribbling
- Offense
- Defence
- Grip
- Handling
- 'BEEF'
- Angles
- Rebound
- Chest
- Bounce
- Double dribble
- Attacking
- Stance
- Triple threat
- Man to man
- Jump shot
- Pass and cut
- Violation
- Javelin
- Pivot
- Crossover
- Hesitation
- Spin
- 3 pointer
- Tip off
- Transition
- Screen
- Half court press
- High court press
- Personal fouls
- Team fouls
- 24 second shot clock
- 5 second rule





PE Knowledge Organiser: Y9 – Basketball Techniques

1. Shooting: 3 Point shooting

Key Teaching Points (KTP's)

- Balanced Stance (step into shot if needed)
- Elbow of shooting hand inline and under wrist / Non shooting hand at side of ball
- Eyes on Target
- Jump without straining, shoot on way up - (Power from legs, back, shoulders)
- Follow Through straightening arm upwards and finish shot with strong wrist and keeping your arm up until the ball reaches the basket

When would I need to be able to use this skill?

A **three-pointer** in a game made from beyond the three-point line, a designated arc surrounding the basket. A successful attempt is worth three points.

2. Set plays: Tip off / Free throw / Restarts and side-line balls

Key Teaching Points (KTP's)

- **Tip off** - begins the game when the referee tosses the ball into the air at the center circle and two opposing players jump to gain possession, making the ball live.
- **Free throw** - A free throw is an unopposed scoring attempt awarded to a player after a foul, worth one point, taken from the free throw line.
- **Restarts and sideline balls** - A player must pass the ball back into play if a basket is scored by the opposition (behind baseline) or ball has left the court during play (baseline or sideline). They have 5 seconds to do so.




3. Positional responsibilities: Guards, forwards, centre

Key Teaching Points (KTP's)

- **Guards** – play in the area of court between the centre line and the free throw line extended to the sideline. They are the team leader and a good safe passer, good ball-handler, 3 point-shooter.
- **Forwards** – play in the area of court either on the right or left side between the restricted area and the sidelines. They are a good driver and capable shooter from corners and side of the court, good rebounder.
- **Posts** – play close to the basket and are usually the tallest player on the team. (Also known as Pivots or Centres) They are capable of getting free to receive a pass close to the basket when closely marked, a good scorer close to basket and strong rebounder.

4. Develop Offensive skills (attacking): Outwitting an opponent (Fast breaks - Rebound/outlet/ transition

Key Teaching Points (KTP's)

- Speed – player sprints court when gaining possession, forcing defender to retreat
- Decision making – Quick, smart decisions considering 'Triple Threat'
- Quick outlet pass allows fast break to start
- Players must move into their positions ASAP to create space/passing options
- Finishing at the rim – players must focus on finishing strong with choice of shot

When would I need to be able to use this skill?

In basketball, a fast break is most effective when a team quickly transitions from defense to offense. The ideal fast break progression is Defensive rebound → Outlet pass → Sprint down the court → Finish at the basket

5. Develop Defensive skills: Zonal marking + half court press

Key Teaching Points (KTP's)

- **Zonal marking** - *A teams' defensive tactic in which five defensive players protect an area surrounding their basket within a normal shotting range*. A coach assigns each player to cover a specific area of the court. In a zone scheme, a defender begins to guard an opponent when the opponent enters the defender's designated zone. Once the offensive player leaves the defender's zone, the defender continues guarding their zone instead of following the offensive player as they would in a man-to-man defense.
- **Half court press -** Is a *defensive technique designed to aggressively pester the offense*. Closely related to the full court press, the half court press evolves naturally from a full court strategy as the offense advances.

6. Tactical Thinking: Screening

Key Teaching Points (KTP's)

- Create separation
- Angle of the screen
- Make contact
- Strong low base – feet shoulder width apart, knees slightly bent, and arms tucked in close to body
- Hold the screen – keep position until defender has managed to evade screen

When would I need to be able to use this skill?

A screen in basketball is a blocking move by an offensive player in which they stand beside or behind a defender in order to free up a teammate to shoot, pass, or drive the ball in to score (otherwise known as a 'pick').

7. Applying Knowledge to game situations: 1v1, 2v2, 5v5

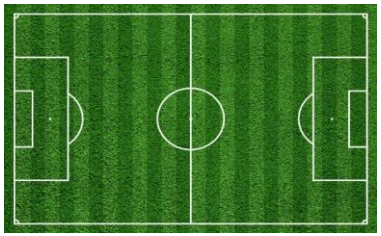
Key Teaching Points (KTP's)

- Use fakes to force an error by the defender
- When dribbling the ball protect by keeping body between ball and defender
- When driving to basket step close to the defender
- Defenders stay with opponents

When would I need to be able to use this skill?

A basketball player needs to apply knowledge of game situations during **1v1, 2v2, and 5v5 play** to make effective decisions—such as when to attack, pass, defend, or create space—based on the number of players involved and the tactical demands of each scenario.

PE Knowledge Organiser: Y9 – Football







Football Basics

Football (Soccer) is one of the oldest sports in the world. The pinnacle of the international game comes in the form the Football World Cup. There are also tournament such as the Euro Championships, Copa America and the African Cup of Nations. Domestically the strongest leagues come from England (English Premier League), Spain (La Liga), Italy (Serie A) and Germany (Bundesliga).

- Each team consists of 11 players. These are made up of one goalkeeper and ten outfield players (defenders, midfielders and forwards).
- On each pitch you will have a 6 yard box next to the goal mouth, an 18 yard box surrounding the 6 yard box and a centre circle. Each half of the pitch must be a mirror image of the other in terms of dimensions.
- Essentially the equipment that is needed for a match is pitch and a football.
- Players can be found wearing studded football boots, shin pads and matching strips. The goalkeepers will additionally wear padded gloves as they are the only players allowed to handle the ball.

The Offside Rule in Football

•The **offside rule in football** can be explained as follows:
Simply put, the offside rule mandates that during a move, an attacking player, when in the opposition half, must have at least two opposition players, including the goalkeeper, between him and the opposition goal when a pass is being played to him.

Winning the Game

To win you have to score more goals than that of your opponents. If the scores are level after 90 minutes then the game will end as a draw apart from in cup games where the game can go to extra time and even a penalty shootout to decide the winner.

To score the ball must go into your opponent's goal. The whole ball needs to be over the line for it to be a goal. A goal can be scored with any part of the body apart from the hand or arm up to the shoulder.

Key Terms/Vocabulary

- Ball control
- Passing
- Dribbling
- Running with the ball
- Turning
- Shooting
- Tackling
- Goalkeeping
- Attacking
- Defending
- Touch
- Short/push pass
- Instep
- Hook
- Laces
- Block
- Body position
- Aerial control
- Long pass
- Driven
- Lofted
- Angles
- Space
- Recycle
- Distribution
- Foul
- Anticipation
- Side on stance
- Offside
- Opposition Awareness
- Outwitting



1. Recap Ball control, dribbling and turning

Ball Control – Ground Key Teaching Points (KTP's)
- Move on the balls of the feet
- Keep the ball within playing distance
- Ensure players have a lot of touches
- Move the ball with 'big toe' and 'little toe'
- Keep head up for vision and awareness of other players

Dribbling - Key Teaching Points (KTP's)
- Slow in / Bend knees
- Technique = Feint/disguise
- Change direction/pace
- Accelerate away

Turning - Key Teaching Points (KTP's)
- Slow in / Bend knees
- Feint/disguise
- Technique (Type of turn)
- Ball out of feet
- Accelerate away

2. Passing: One touch/ two touch passing + applying into game situations



Key Teaching Points (KTP's)
- Pass in-step to feet
- Once passed move into space
- Open body as receiving ball
- Relax foot and control with in-step (*if taking two touches*)

When would I need to be able to use this skill?
Main advantage of a one-touch pass in football - It speeds up the play and surprises the opponent

3. Running with the ball: Outwitting an opponent



Key Teaching Points (KTP's)
- Is there space available? Big touches let the player on the ball travel quickly. Is space limited? Then dribbling the ball helps the player change speed and direction easily.
- If touches are too big, it's easy to lose control or miss good opportunities to pass. If touches are too small, it's hard to travel with enough speed to take advantage of the space ahead.
- Every situation is unique. A lot of it is down to the player. What they see, the pictures and ideas in their mind, and their instinct in the moment. It all factors in.

When would I need to be able to use this skill?
Running with the ball is when a player travels through (or into) space at speed, with the ball at their feet.

4. Turning with the ball: Recycling



Key Teaching Points (KTP's)
- Awareness (scan pitch before receiving the ball)
- Decision making
- Body position (Receiving shape)
- Quality of turn
- Pass Execution
- Support play

When would I need to be able to use this skill?
In football, recycling the ball means turning away from pressure and playing the ball back or sideways to keep possession rather than forcing an attack. It's a really important skill for controlling the tempo of a game.

5. Shooting: Angles, distance, pressure



Key Teaching Points (KTP's)
- Judge GK position in goal
- Opportunity to shoot low (in corners)
- Part of foot (instep = control or laces + power)
- Take shot early before GK/ defender can react

When would I need to be able to use this skill?
In football, shooting isn't just about power—it's about **angle, distance, and pressure**. You use this skill in different match situations depending on where you are and what defenders are doing

6. Attacking: 3v2, 2v1, 1v1



2v1 Key Teaching Points (KTP's)
- 1st Attacker to commit defender to the ball
- -2nd attacker to offer support for combination either in front, to the side or behind
- -Angle and distance of 2nd attacker
- -Decision making of each player
- -Combination selection
- -Timing of combination
- -Play at speed

When would I need to be able to use this skill?
Using a 2v1 attacking situation in football is one of the most important ways to break down a defence. You'll need this skill anytime you and a teammate have an advantage over a single defender

7. Defending: 1v1, 1v2, 2v3

1v2 Key Teaching Points (KTP's)
- Delay the Attack
- Stay Compact
- Read the Game
- Force Mistakes
- Don't Overcommit



When would I need to be able to use this skill?
1v2 defending scenario is one of the toughest challenges for any player. It's when a lone defender faces two attackers. While attackers have the numerical advantage, a smart defender can still prevent a goal.

PE Knowledge Organiser: Y9 – Gymnastics Overview







Tips for tackling flight

- Choose your level appropriately
- Allow your body to build confidence by repeating skills over and over
- Perform the skill and technique well – not just complete it
- Make sure you have tension through the body
- Ger feedback – film it, ask a peer or your teacher – sometimes things feel different and watching it back can really help see what works and what doesn't.
- Listen to all safety instructions regardless of your ability
- It is okay to push yourself beyond your comfort zone and feel a little anxious about doing so.
- The sense of achievement in accomplishing a new skills (whatever level) should be celebrated!

Performance and Assessment

As an audience you must be respectful of others, performing can be nerve racking, so let's celebrate everyone's success.

- Don't talk or giggle - you've worked too hard to ruin it!
- If you do make a small error, pause and pick it back up
- Hold your head up – be proud of your work!
- Point those toes and finish those shapes

Safety in Gymnastics

Listen to instructions and ensure you that you progress through the KTPs rather than attempting the skill from the top. Make sure equipment is set up correctly and ask a teacher to check any concerns you have. Careful when lifting and moving equipment – follow instructions given. Do not use any apparatus before it has been checked by a teacher. Communicate with peers and wait your turn when vaulting. Emphasise on take off and landing – these skills are often forgotten but are super important for your safety and looking after your body.

Key Terms/Vocabulary

- Take off
- Landing
- Squat on
- Squat off
- Tension
- Aesthetics
- Gate vault
- Vault
- Straddle vault
- Through vault
- Handspring
- Springboard
- Trampette
- Handspring
- Springboard
- Trampette
- Flight
- Trust
- Communicatio n

Don't forget!
Worth looking back at your y7+8 KO's....
You will still need to applying all you learnt regarding shape!





PE Knowledge Organiser: Y9 – Gymnastics Techniques

Flight: The importance of landing and take off

Key Teaching Points (KTP's)

Landing:

- The feet should be shoulder width apart and turned out at 10 to 2. In order to form a large support base.
- The knees should be flexed in the direction of the toes.
- The back should be flat and upright, head in neutral position.
- Arms should be brought down to absorb the force of the landing.

Take off:

- Three-step run up. The last being a hurdle step.
- Double footed take off, feet in front of the body on the springboard.
- Legs slightly bent.
- Trunk vertical.
- Arms swung backwards
- Arms event thrown forwards with a dynamic straightening of the legs.

Safety in set up: Lifting

Key Teaching Points (KTP's)

Lifting:

- Place both hands-on equipment
- Communicate with partner when lifting
- Bend knees as you lift equipment
- Travel slowly
- If you need to stop communicate this with others
- Bend knees to lower equipment and mind your toes.



When would I need to be able to use this skill?

You will be required to set up the space for your lessons. This must be done sensibly with trust and teamwork. The safety of you and your peers is top priority. Make sure no equipment is used until it has been checked by your teacher.

Flight: Gate vault

Key Teaching Points (KTP's)

Gate vault:

- Hands are placed opposite each other and across the apparatus
- Bunny hop over the apparatus, taking off on one side of the apparatus and landing 2 feet on the other.
- Cross the apparatus with your tummy facing it.

When would I need to be able to use this skill?

This is one of the introductory vaults to progress further into flight. This vault will get you over the apparatus used for flight.

Handspring vault:

Key Teaching Points (KTP's)

Handstand and flat back landing

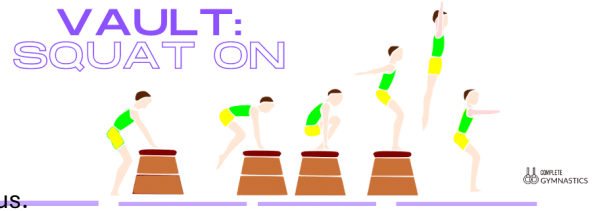
- Place hands on box top.
- Kick to handstand
- Take weight onto hands
- Maintaining body tension and control Allow handstand to rotate past the vertical position.
- Fall to land on the back of the body in complete tension. (or crucifix position)



Why do I land on my back first? Your teacher will support you with progression through the phases of the handspring to ensure you have the correct rotation and can land safely.

Flight: Squat on and off and Straddle vault

Choose your level:



Key Teaching Points (KTP's)

Squat on and off:

- 2 footed take off (KTPs of take off)
- 2 hands down onto the apparatus
- Tuck position with knees flexed land 2 feet onto the apparatus.
- Extend the legs and remove hands to jump upwards and forwards off.
- Landing KTPs

Key Teaching Points (KTP's)

Straddle vault:

- Take off on 2 feet
- Hands are place on the apparatus shoulder width apart
- Feet and legs are abducted
- At the same time thrust strongly through arms and raise ahead and shoulders
- Legs come together and hands release off to land 2 feet



PE Knowledge Organiser: Y9 - Rugby

What is Rugby?

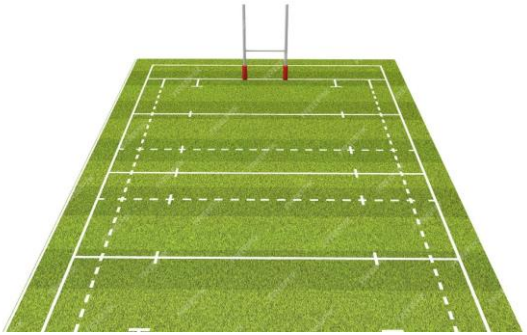
General – Rugby is a team sport. This means that you will work with other players on your team to attack and defend.

Scoring – To score in Rugby you can score in multiple ways, they are as follows: By placing the ball securely over the try line, by conversion (kicking the ball between the posts after a try has been scored or from a penalty), and by drop-goal.

Skills and Techniques – Rugby is a sport which requires a lot of body control and strength. Tackling is one of if not the most important skill when playing Rugby. You must be able to tackle safely and also effectively so that you stop your opponents from advancing up the pitch and scoring. Passing the ball whilst running at speed is also a very important skill to have when attacking.

Key Terms/Vocabulary

- Agile
- Anticipate
- Coordinate
- Defend
- Invasion
- Formation
- Intensity
- Opposition
- React
- Resilience
- Strategy
- Support
- Tactics
- Technique
- Transition
- Dummy half
- Forward pass
- Play-the-ball
- Tackle count
- Touchline
- Tryline
- Dummy runner
- Knock-on
- Line break
- Offload





Rules and Regulations

1.Depending on which version (League or Union) you play depends on which rules are applied.
2.Points are awarded to teams via a try, conversation or drop goal.

3.Foul play happens in multiple ways, such as: when a player obstructs an opponent, when a player kicks, tramples or trips an opponent, when a player tackles too early, too late or above the shoulders, tackling a player in the air or general unfair or dangerous behaviour.

4.An offside happens when a defending player is too far ahead of the defensive line (not back 10 yards). The defensive line is an imaginary line which runs across the pitch when the ball is being 'played' via ruck or play of the ball (often after a tackle has just happened).

5.If a player loses control of the ball and the ball goes forward (towards the opponents try line) this is called a knock on. A knock on means your team loses the ball and must give it to the opposition who will restart where the player knocked on.

6.Passes must go backwards (behind you / towards your try line). If a pass goes forward a penalty will be awarded to the opposition where the pass took place. Penalties can be used to kick at goal (conversion), kick for touch (advance up the field) or restart play via scrum or play of the ball.

7.A try is scored by placing the ball on the ground securely over the try line.

1. Recap of Ball handling skills



Key Teachin
- Spread f shape
- Fingers on seams, thumbs at the side
- Ball ideally in the fingertips, not the palm
- Ball carried with two hands before contact

When would I need to be able to use this skill?
Rugby league players need a secure grip on the ball to maintain control while running, passing, and scoring—especially in wet or muddy conditions. Strong grip and handling reduce errors like fumbles and allow accurate passing under pressure.

2. Recap Tackling : Offload during tackles



Key Teaching Points (KTP's)
- Strong grip on the ball
- Keep the ball close to the chest in contact
- Only offload when it's safe and effective
- Maintain balance and stay on feet during contact

When would I need to be able to use this skill?
Offloading during contact allows players to keep the play alive and support attacking moves without needing to stop or reset. It's a powerful skill for breaking through tight defences

3. Tackling: – Recap Upright tackling



Key Teaching Points (KTP's)
- Place lead foot between attacker's legs
- Wrap arms around the attacker (ball-side and opposite side)
- Stay upright to restrict the opponent's passing options

When would I need to be able to use this skill?
Upright tackles stop the ball carrier while limiting their ability to pass. This helps slow down play, organise the defensive line, and create opportunities to force a turnover.

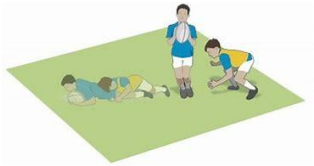
4. Recap Playing the ball



Key Teaching Points (
- Snap knees in, roll back smoothly with foot
- Return to feet quickly
- Dummy half collects and distributes ball

When would I need to be able to use this skill?
After being tackled, players must get up and "play the ball" to continue the game. This skill restarts attack quickly and gives the team a chance to advance.

5. Tackling Side Tackle and group tackling



Key Teaching Points (KTP's)
- Shorten steps,
- target thigh,
- head behind,
- arms around thigh area squeeze player toward you.
- Finish on top

When would I need to be able to use this skill?
In rugby league, players need to be able to tackle to stop the opposing team from advancing down the field and scoring. Effective tackling helps regain control of the game, forces turnovers, and creates opportunities for their own team to go on the attack.

6. Kicking: Kicking in attack (Grubber, Punt and tactical choice)



Key Teaching Points (KTP's)
- KTP Grubber: Lean forward, toe pointed down
- Kick top half of the ball into the ground
- Punt: Drop ball onto foot
- Contact lower half of ball
- Follow through toward target

When would I need to be able to use this skill?
Kicks are used to gain territory, restart play, or attempt to score. Choosing the correct type of kick helps create scoring chances or push the opponent back.

7. Game play /Tactical development

- Apply correct rules & skills (passing, tackling, PTB, kicking).
- Work as a unit in attack (support lines, offloads) and defense (line speed, communication).
- Recognise when to change tempo of play.

Gameplay and tactical development are important in Rugby League because they help players make quick decisions and work effectively as a team. Understanding tactics such as creating space and maintaining a strong defence improves performance and helps teams gain an advantage during matches.

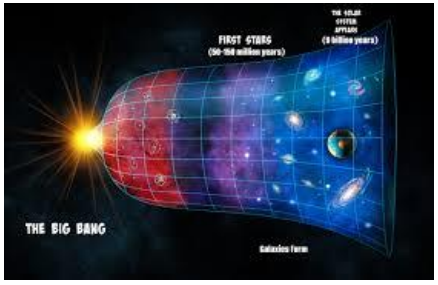
Key Point:
Successful Rugby League players combine technical skills with tactical knowledge to make the right decisions at the right time.

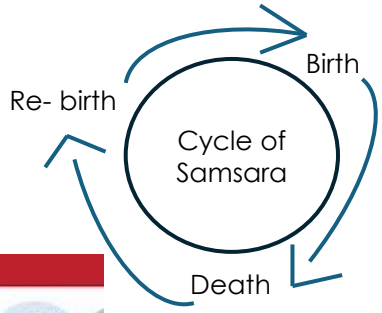
Religious Studies: Y9 Term 1

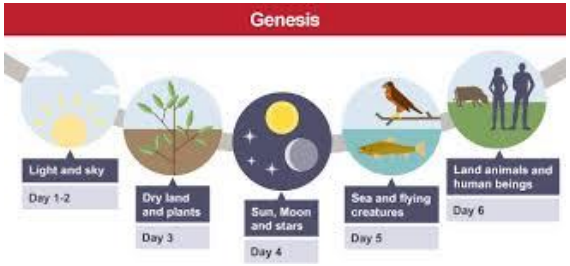
RS Knowledge Organiser: Term 1

Key Words and Definitions

- **Big Questions** - Important questions that help us make sense of the world around us.
- **Capital punishment** — the legal execution of a person
- **Abortion** — the deliberate termination of a pregnancy
- **Moral evil** — wrongdoing or harm caused by human choices (evil acts done by people)
- **Natural evil** — suffering or harm caused by nature (e.g. disasters, disease)
- **Euthanasia** — the practice of intentionally ending a life to relieve pain or suffering
- **Life after death** — the belief or doctrine that a part of a person (e.g. soul) continues to exist after the physical body dies
- **Just war -** A war that the Christian Church defines as acceptable: this must fit certain criteria. The idea was developed by St Thomas Aquinas.
- **Revelation -** God making Himself known.
- **Miracles** - An event that cannot be explained by science. Something that should not be able to happen.







Knowledge

Creationism:

- The Big Bang Theory is the scientific explanation for the origin of the universe, suggesting it began approximately 13.8 billion years ago from a hot, dense singularity that expanded to form all matter and cosmic structures.
- The Christian creation story, found in the Book of Genesis, describes an omnipotent God creating the heavens, earth, and all life within six literal or symbolic days.
- Buddhism, rather than offering a singular creation narrative, presents a cyclical view of the cosmos, where universes and life forms go through endless cycles of creation and decay driven by karma, without a creator deity.

Key dates:

1967 – Abortion Act legalised abortion in England, Scotland & Wales under certain conditions.
1961 – Suicide Act made it illegal to help someone take their own life.
1965 – The Abolition Act suspended the death penalty for murder.
1969 – Abolition made permanent.

Legal status -

Abortion:

Legal today up to 24 weeks with the approval of two doctors.
After 24 weeks only in serious cases
Northern Ireland Law changed in 2019 to align with the rest of the UK.

Euthanasia:

Up to 14 years in prison
Legal in some countries (Netherlands, Canada)
Ongoing debate in the UK.

Capital Punishment:

Law today, completely abolished in the UK.
Legal in 53 countries around the world.

RS Knowledge Organiser: Term 1



Inconsistent triad:
The argument concludes that it is logically impossible for all three of these statements to be true at the same time. If one accepts that evil exists in the world, a person must reject at least one of the traditional divine attributes of God.

Moral Evil – the acts of humans which are considered to be morally wrong, eg murder and theft
Natural Evil – natural disasters, e.g earthquakes or tsunamis, which humans have no control over
For Christians evil and suffering are related to freewill (the idea that humans make decisions for themselves).

Euthanasia and Abortion
Ethical, Legal & Moral Perspectives

Euthanasia	Abortion
Definition The act of intentionally ending a person's life to relieve suffering, often due to a terminal illness or severe pain.	**Definition** The deliberate termination of a pregnancy before the fetus can survive outside the womb.
Types Voluntary Non-voluntary Involuntary	**Types** Medical Abortion Surgical Abortion
Arguments ✓ Respects personal choice and dignity ✓ Reduces prolonged suffering ✓ Frees medical resources for others	**Arguments** ✓ Women's right to choose ✓ Protection in cases of risk to the mother's health or rape ✓ Prevents unwanted or unsafe births
Arguments ✗ Devalues human life ✗ Risk of abuse or pressure on vulnerable people ✗ Conflicts with many religious and moral beliefs	**Arguments** ✗ Ends a potential human life ✗ Can cause emotional and moral conflict ✗ Opposes certain religious beliefs
Legal status (varies by country) Legal in some nations like Netherlands, Beigium, and Canada under strict conditions	**Legal status** (varies by country) Legal in many countries under specific conditions (e.g., up to a certain number of weeks; or for health reasons)

Ethical and Moral Themes "Who has the right to decide when life begins—or ends?"

Just War Theory and the Bombing of Hiroshima and Nagaski

What is Just War Theory
A Set of ethical principle that help determine when it is morally acceptable to go to war
- **Just Cause** (War nut sord be conduct)
- **Right Intention** Mixed motives – saving lives vs. political demonsttration
- **Last Resort** Other options (blockade, conventional bombing, negotiation) had been attempted, but Japan may have been close surender

Hiroshima and Nagasaki (August 1945)
Goal: Force Japan to surrender and end World War II quickly
Outcome: Japan surrendered on August 15, 1945, Hundreds of thousands of civilians died immediately: may more suffered

Applying Just War Theory

	Applying Just War Theory
Just Cause	Ending the war and saying lives from a potential invasion
Right Intention	Mixed motives – saving lives vs. political demoristration of power
Last Resort	Other options (blockade, conventional bombing, negotiation). bad been attempted, but Japan may have been close to surrender
Discrimination	Targeted civilians – violates this principle
Post-war Justice	Debate over whether civilian deaths were proportionate to the military advantage

Key Points to Remember
- The bombings ended WWII but caused immense civilian casaulties

Views on Life After Death

Buddhism	Catholicism	Protestantism
Belief Cycle of rebirth (Samsara) influenced by karma	**Belief** Heaven, Purgatory and Hell	**Belief** Heaven and Hell
Process Rebirth into a new life form until enlightenment (Nirvana)	**Process** Judgment for the soul, followed by eternal destiny	**Process** Personal judgment by God at the time of death

Key Concepts
- Eternal existence
- Moral responsibility
- Justice

Capital Punishment is the legally authorised killing of someone as punishment for a crime (murder for example).
Also called the ***death penalty, or executions.***
The last hangings happened in 1964, and the death penalty for murder was abolished in 1965. Finally, in 1998–1999, Britain completely ended capital punishment for all crimes.

Countries that persistently executed people between 2018-2022



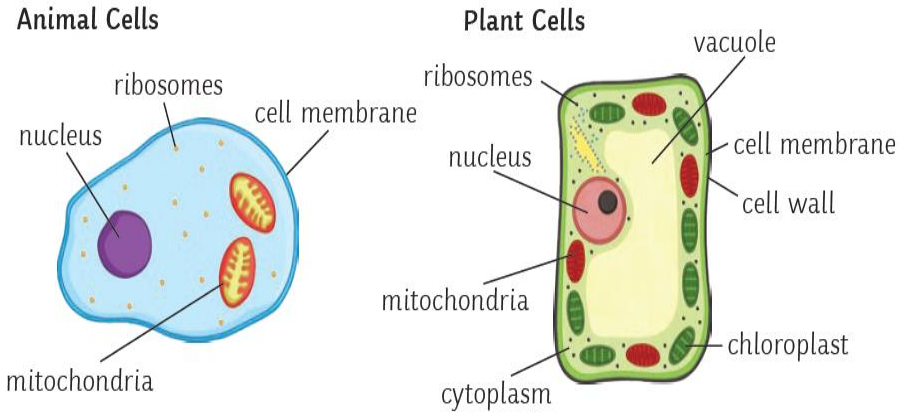
Science: Y9 Term 1

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Scientific Word	Function
Nucleus	Controls the cells activities
Cell membrane	Controls movement of substances in and out of the cell
Cytoplasm	Site of chemical reactions
Mitochondria	Site of respiration
Ribosome	Site of protein synthesis
Chloroplast	Site of photosynthesis
Vacuole	Contains cell sap

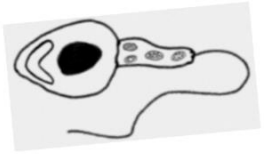
1. Cell Structure

Plant and animal cells are made of organelles with specific functions. Plant cells have a cell wall made of **cellulose** which strengthens the cell.



2. Specialised Cells

Cells are the building blocks of life. A group of cells working together is called a tissue. A group of tissues working together is called an organ. Cells may be specialised to perform a specific function



Sperm Cell
Tail – to swim to the egg



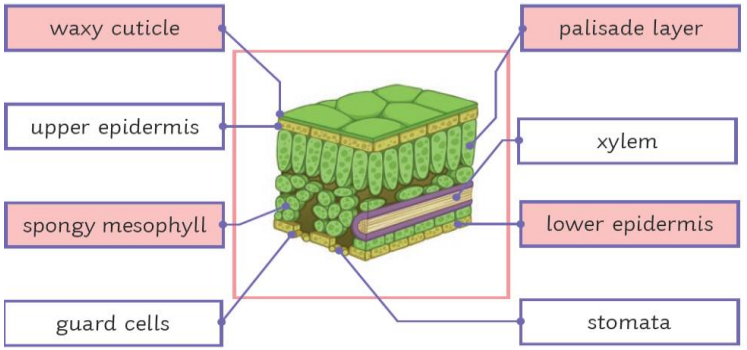
Ciliated epithelial Cell
Cilia– move the egg/
Move mucus in the trachea



Muscle Cell
Long/thin – contract and relax

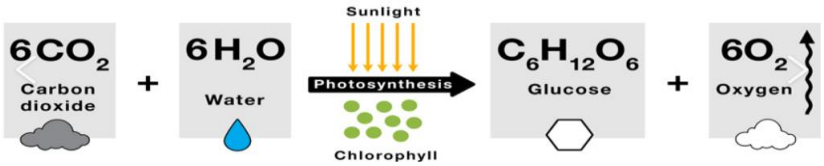
3. Plant Tissues

Xylem tissue transports water and minerals to the leaves. **Phloem** tissue transports glucose around the plant. **Guard cells** under the leaf surround **stomata** controlling gas exchange in the leaf.

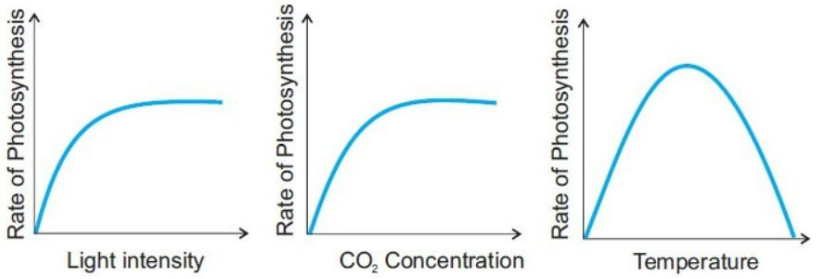


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4. Factors Affecting Photosynthesis

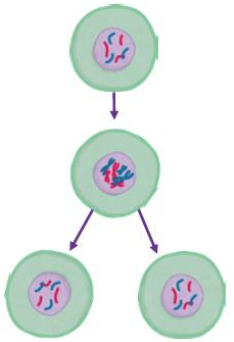


From the graphs you can see that increasing one factor will increase photosynthesis until it plateaus. Then another factor is limiting the rate of photosynthesis.



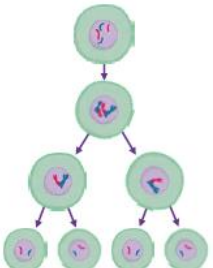
5. Asexual Reproduction

Asexual reproduction involves only **one** parent. The offspring are **genetically identical** (clones) to the parent are there is no mixing pf gametes (sex cells). This is done by **mitosis**. While food or medicine production by this method is very quick, it is vulnerable to rapidly changing conditions as there is no variation. Negative mutation can affect all offspring.



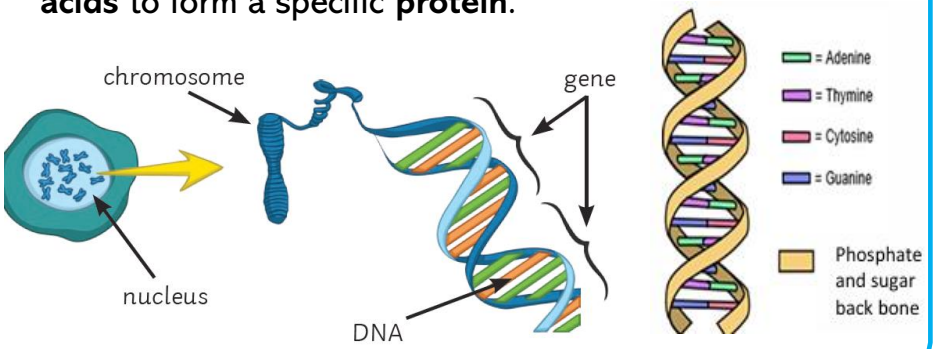
6. Sexual Reproduction

The gametes (sex cells) of two parents are combined to produce the offspring. This occurs when the nuclei of the sperm and egg fuse so there is variation in the offspring. Variation gives a survival advantage through natural selection and negative mutation is not always inherited. The formation of the gametes is done by meiosis.



7. DNA Structure

DNA is a **polymer** made up of two strands forming a **double helix.** DNA is contained in structures called **chromosome**s. A small section of DNA is called a **gene**, each gene codes for a particular sequence **of amino acids** to form a specific **protein**.



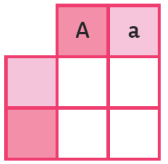
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Scientific Word	Definition
Allele	Different forms of the same gene
Dominant	A type of allele **always** expressed when paired with a recessive allele
Recessive	A type of allele **only** expressed when paired with a recessive allele
Homozygous	Pair of the same alleles; can be dominant or recessive.
Heterozygous	Two different alleles present; one dominant and one recessive
Genotype	Alleles present for particular feature e.g. Bb
Phenotype	Physical expression of an allele combination e.g. blue eyes, red hair

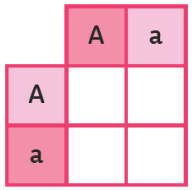
8. Genetic Crosses

This is a diagram to show the probability of the genotype of offspring from their parents.

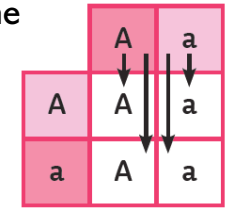
Step 1: write the alleles of parent 1 across the top



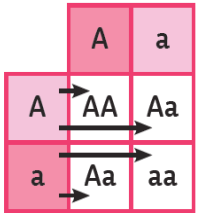
Step 2: write the alleles of parent 2 down the side



Step 3: put the alleles of parent 1 into the boxes below them

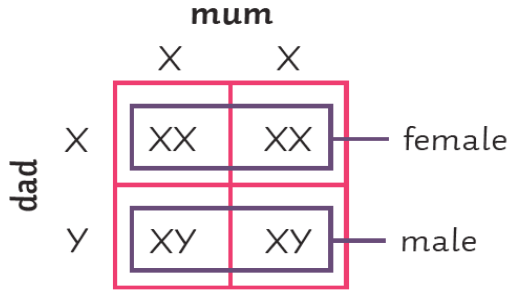


Step 4: put the alleles of parent 2 in the boxes to the write of them



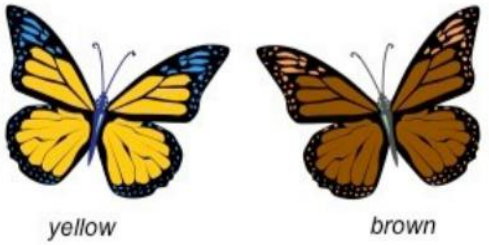
9. Sex Determination

This genetic diagram shows the probability of the offspring being male or female. Human gametes carry 23 chromosomes each so when fused, have the full 46 chromosomes. (23 pairs) The 23rd pair determines sex: **XX = female** and **XY=male**. An egg cell only carries X chromosomes, but sperm can carry X or Y. There is always 50% chance of male and female offspring.



10. Variation

The **genome** of an organism is the entire genetic material. The genome's interaction with the environment influences the phenotype of an organism. Differences between organisms is called **variation.** Variation can be due to inherited genes, the conditions the organism developed in (environment) or a combination of both.



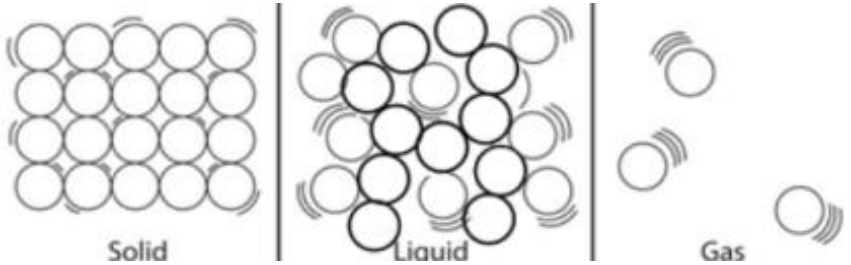
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Scientific Word	Definition
Atom	The smallest part of an element that can exist
Element	A pure substance made of one type of atom only
Compound	Two or more different atoms chemically combined
Mixture	Two or more different elements or compounds that are not chemically combined
Isotope	Atoms of the same element with different masses/number of neutrons
Hydrocarbon	A compound made of hydrogen ad carbon only
Alloy	A mixture containing at least one metal

1. States of Matter

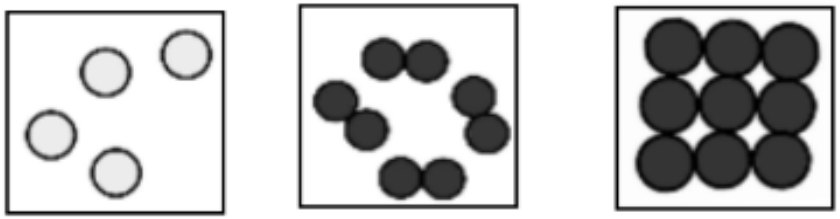
There are three states of matter; solid, liquid and gas. Chemists use state symbols in equations to represent the state of that chemical.

- Solid (s)
- Liquid (l)
- Gas (g)
- In solution/dissolved in water (aq)



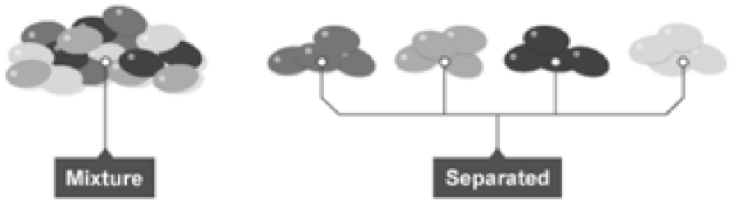
2. Atoms and Elements

All substances are made of atoms. Elements are made of one type of atom only. There are about 100 elements that exist and can be found on the Periodic Table. The elements are represented by a symbol e.g. C represents the element carbon. The elements may be separate or joined together in molecule e.g. O_2 is oxygen.



3. Separating Mixtures

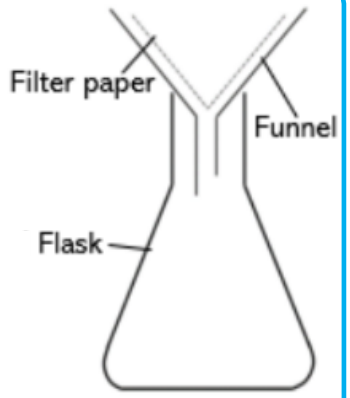
A mixture is two or more different elements or compounds that are not chemically combined. This means they can be separated by different physical processes: filtration, crystallization, chromatography and distillation.

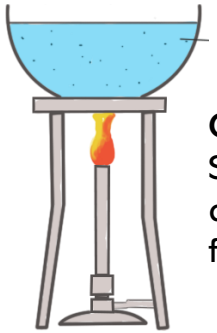


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3. Filtration

Filter paper is **porous** so we can separate large solids from liquids. The **filtrate** can then be crystallised.



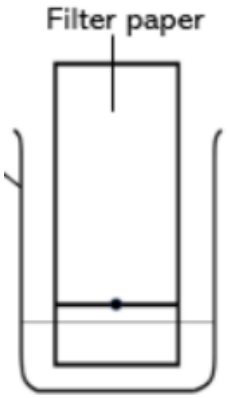


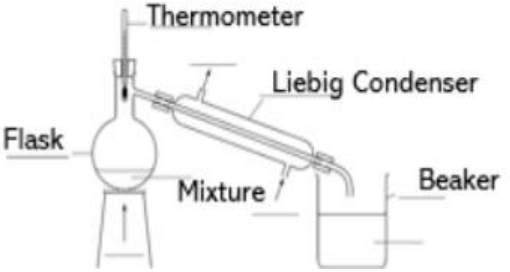
Crystallisation

Solutions are heated to separate the dissolved solids from the liquids. Crystals form in the evaporating basin.

4. Chromatography

A mixture of dissolved solids are separated in this way. Draw a baseline in **pencil** and place a spot of the mixture in the centre, Place the paper in the solvent making sure it is **below** the baseline. The mixture separates according to size; smallest solutes travel further.



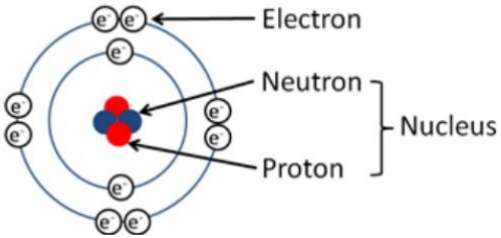


Distillation

Mixtures of liquids with **different boiling points** are separated by heating, cooling and condensing.

5. Atomic Structure

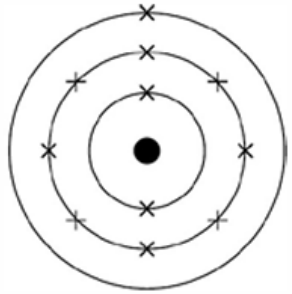
An atom is made up of subatomic particles called protons, neutrons and electrons. It has **no overall charge** as the numbers of protons and electrons are equal and the same number as the **atomic number**. The mass number minus the atomic number is the number of neutrons.

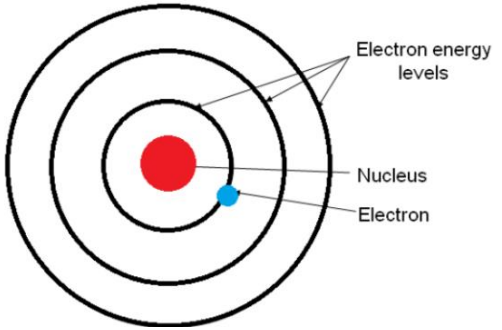


Particle	Mass	Charge
Proton	1	+1
Neutron	1	0
Electron	0	-1

6. Electronic Structure

Electrons orbit the nucleus in **energy levels**. The energy level **closest** to the nucleus can hold up to **two** electrons and is filled **first** as it has the **lowest** energy. The second and third energy levels can hold a maximum of **eight** electrons.





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7. Relative Formula Mass (Mr)

A **formula** tells us how many different elements and the number of atoms of each element are present in a compound. Each element has a specific mass and the **sum** of these is called the relative formula mass.

e.g. CO_2 contains 1 atom of carbon and 2 atoms of oxygen.

Masses C=12 and O = 16

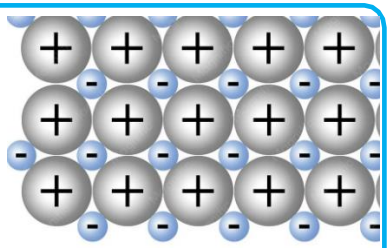
12+16+16 = **44**

H_2O contains 2 hydrogen atoms and 1 oxygen atom

Masses H = 1 and O = 16

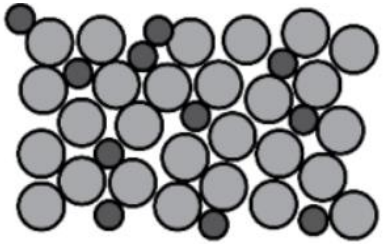
1+ 1+ 16 = **18**

8. Metals and Alloys.



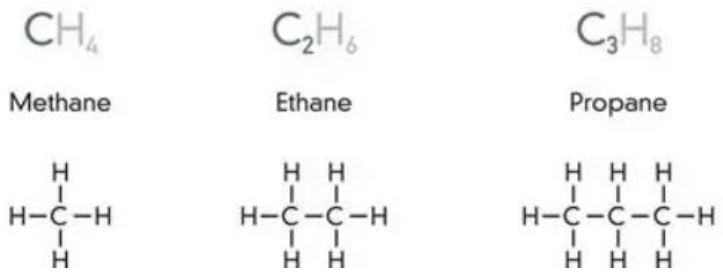
Metal elements lose their outer shell electrons to form **ions** with a positive charge. This is because they now have a full outer shell and are stable. The lost electrons become delocalised.

The layers can slide making the metal soft. Metals are mixed together to form an alloy. As the atoms are different sizes, the layers cannot slide making it harder.



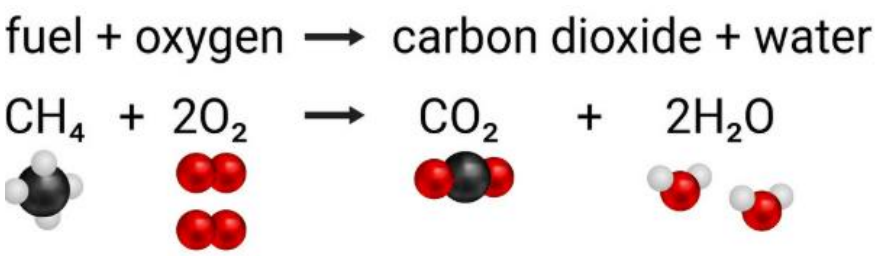
9. Properties of Hydrocarbons

In hydrocarbons known as alkanes, carbon atoms are surrounded by hydrogen atoms joined by single bonds. Longer hydrocarbons have stronger forces of attraction between molecules, higher boiling points and are more viscous (thicker) liquids, Shorter hydrocarbons have weaker forces, lower boiling points and less viscous liquids.



10. Combustion

In a complete combustion reaction, a hydrocarbon reacts with **oxygen** to produce **carbon dioxide** and **water.**
This reaction is **exothermic** as energy is released.

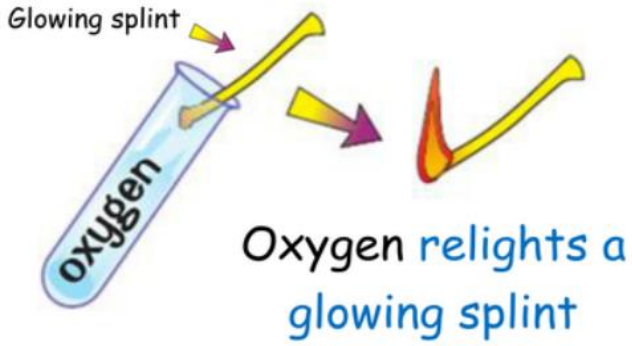


11. Gas Tests

Oxygen

Test – A glowing splint is inserted into the gas

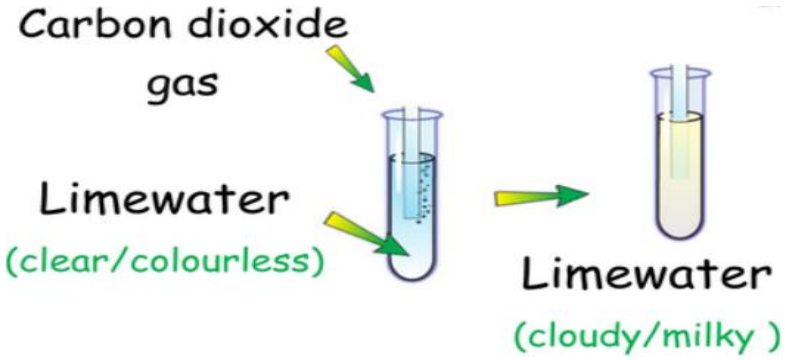
Result – the flame relights



Carbon Dioxide

Test – Limewater

Result – Turns cloudy/milky

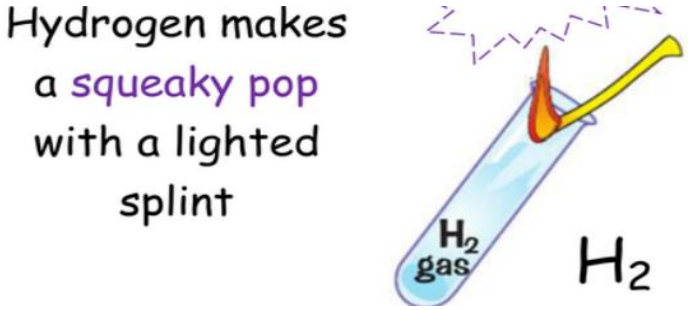


11. Gas Tests

Hydrogen

Test – A lit splint is inserted into the gas

Result – a squeaky pop is produced



Chlorine

Test – damp indicator paper

Result – Bleaches it white

