Name:

Form:

Knowledge Organisers

Year 7 Term 2

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: Y7 Term 2

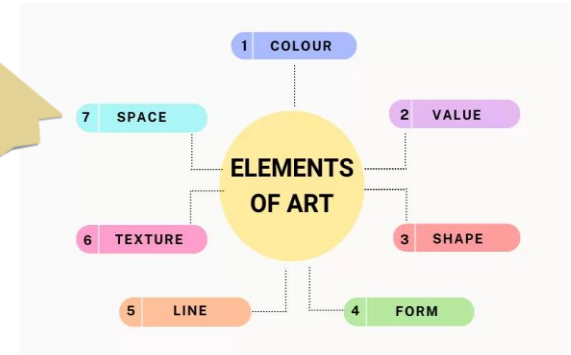
Art Knowledge Organiser: Year 7 Abstract Art – Term 2

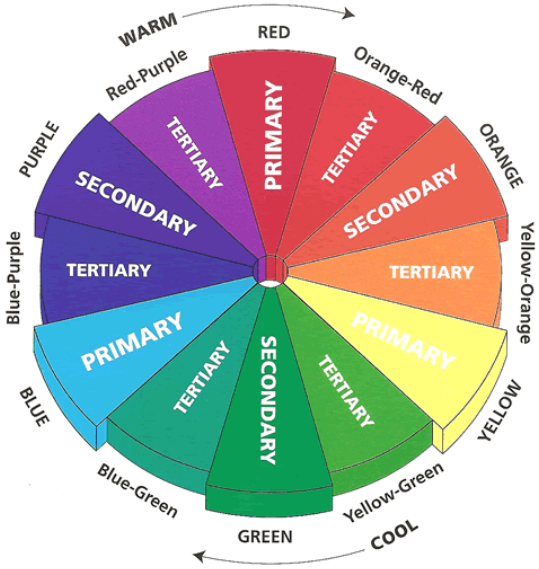
Theoretical Knowledge

What is Abstract Art?

Abstract art is a type of art that **doesn't try to show things exactly how they look in real life**. Instead of painting a person, a tree, or a house the way it really looks, abstract artists use **shapes, colours, and patterns** to show **feelings, ideas, or moods**.

Sometimes, abstract art can look like a **dream**, or something from your imagination. You might not always know what it is—but that's okay! The point is to **feel something** or to **think in a different way**.





Key Terms:

1. Abstract
Art that doesn't try to look like real life. Instead, it uses shapes, colours, and lines to show feelings or ideas.

2. Composition
The way things are arranged in a picture, like where shapes and colours are placed. Artists like **Kandinsky** carefully planned their compositions to create balance or movement.

3. Geometric Shapes
Shapes like circles, squares, and triangles. **Picasso** often used these in his Cubist work to break objects into simple parts.

4. Organic Shapes
Natural, flowing shapes like leaves, waves, or blobs. **Matisse** used these in his cut-outs to make his art feel playful and free.

5. Colour
Abstract artists use bold or unusual colours to show emotion, not to match real life. **Kandinsky** believed colours could make people feel music or mood.

Art Knowledge Organiser: Year 7 Abstract Art– Term 2

Theoretical Knowledge

Cubism

1907-1914

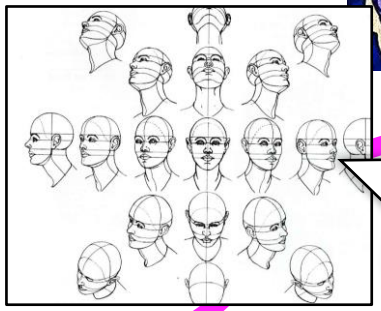
Cubism is an art movement where artists **break** things into **shapes**, like cubes, triangles, and rectangles. They show the object from **different angles all at once**, kind of like a puzzle. Instead of painting something to look real, artists like **Picasso** and **Braque** made it look like it was taken apart and put back together in a cool, weird way.

Artist In Focus:
Pablo Picasso

Picasso was a Spanish artist who wanted to show the world in **new, creative ways**. He was inspired by **African masks**, **Spanish art**, and **children's drawings**. Instead of making things look real, he used **shapes and angles** to create **Cubism**—a style that shows many sides of something at once.

Key Term: Perspective

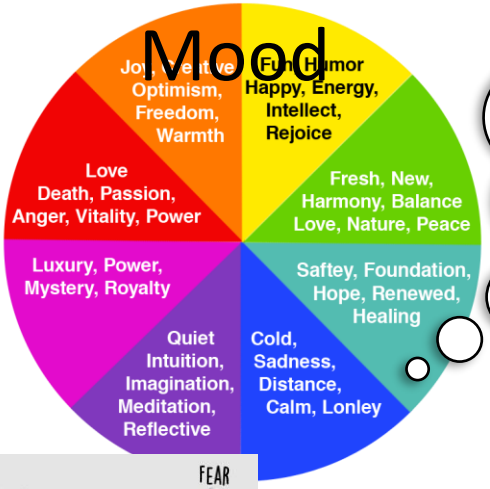
Perspective is how artists show things looking **close** or **far**, or from **different sides**, to make pictures look real. Picasso's Cubist portraits shows **many sides of a face at the same time**—like the **front** and the **side together**. It's like if you looked at someone's face from different **angles** all at once! This way, you see the whole person in a new, **creative** way.



In this example, you can see a face shown from many different **perspectives**. Picasso's work shows a face from **multiple perspectives** in one **painting**.

Theoretical Knowledge

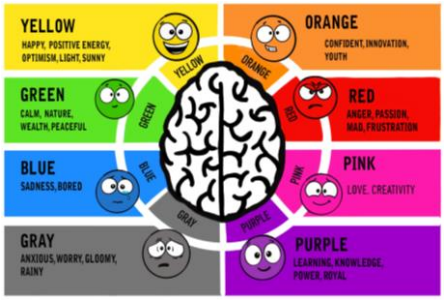
Colour & Mood



Sometimes artists use **colours** to **show feelings**. In **abstract** art, colours help people to **feel emotions**. Knowing colour **moods** helps artists share their **ideas** and **feelings**.

Wassily Kandinsky was a Russian artist who **loved music** and believed art could **show feelings** like **music** does. He was **inspired** by **colours**, **sounds**, and **emotions**. He wanted to paint how things **felt inside**, not just what they looked like. That's why he helped create **abstract** art, using **shapes** and **colours** instead of **real** objects.

The film '**Inside Out**' is a great example of how **colour** is used to **represent** different **emotions**!



Synaesthesia is when the senses mix.
For example, someone might **see the colour blue when they hear a trumpet**.
Their brain **connects sound** and **colour** in a special way!

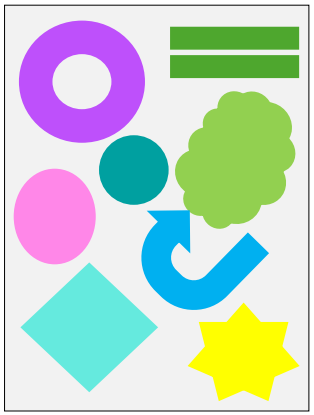
Here are two **examples** of **Kandinsky's** work.

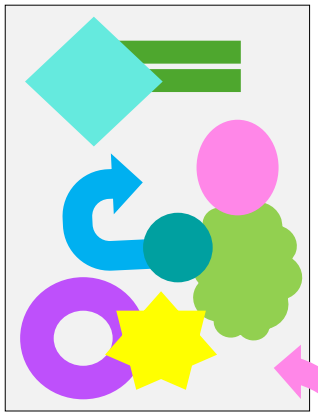
In **Picasso's 'Blue Period'** (before his **cubist** art) he painted figures and scenes in blue scenes to **express** the **sadness** he was feeling.

Artists **inspired** by Kandinsky

Art Knowledge Organiser: Year 7 Abstract Art – Term 2

Theoretical Knowledge



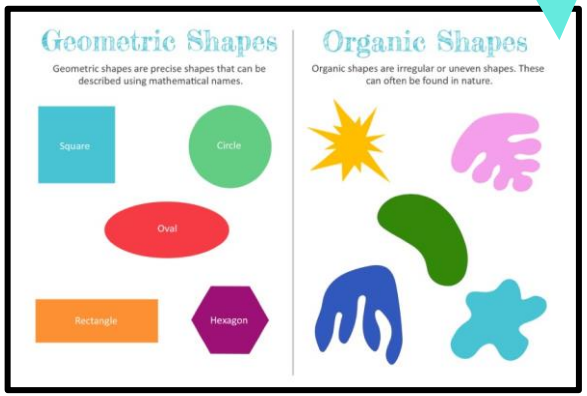


Composition is how you **arrange things** in your artwork. Planning a composition involves **deciding where to put stuff**. Carefully considering your composition helps make your art look **balanced** and **interesting.** In the **example above**, you can see **considering** how the shapes are **arranged** has a strong **visual impact** on the outcome!

When Henri Matisse got too sick to paint, he started making art by cutting shapes out of colourful paper. He called it **"drawing with scissors."** He made fun, bold pictures of things like people, animals, and nature.

Negative space is the **empty space** around the shapes. The space around the cut-outs helped the shapes stand out. Matisse uses **geometric** and **organic shapes** in his work.

Here are some **examples** of his work.



Artists **inspired** by Matisse

Computing: Y7 Term 2

KS3 Knowledge Organiser

Computing Systems

What is a Computer?

"A computer is generally considered to be a programmable machine, often electronic, which takes in data, processes it and then outputs the result".

There are actually a lot of devices that can be considered computers (or at least to contain a computer). A washing machine can be programmed, has buttons to input data, a CPU to process the instructions and motors/values which produce different outputs. By definition it is therefore a computer.

Input and Output Devices

All of the devices shown on the right are **input devices**. They all send data/instructions to the computer system. For example, the games controller will send directional data/instructions, the scanner will send image data and the microphone will send sound data to the system.

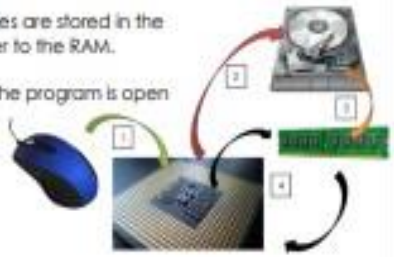
All of the devices shown on the left are **output devices**. They all output information (processed data) from the computer system to the user. For example, the monitor will display images and the speakers will output sound.

Key Vocabulary

Key Word	Definition
Input device	Piece of equipment that helps put data / commands into a computer.
Output device	Piece of equipment that helps get information out of a computer.
Process	Decisions and Calculations made by a computer
CPU	Central Processing Unit
RAM	Random Access Memory
Motherboard	Main circuit board – components are connected to this
Hard drive	The computer's file storage
I/O Devices	The input devices send data to the CPU, the output devices receive information from the CPU.

How does a computer actually work?

1. Firstly, when you double click a program's icon, the mouse (input device) sends an instruction (input) to the CPU requesting that the program is loaded.
2. The CPU will decode this instruction and then execute it. Now, because all programs and files are stored in the hard drive, it sends a signal to the hard drive requesting that the program files are copied over to the RAM.
3. The hard drive accepts this request and loads the program onto the RAM.
4. The CPU can now directly access and process the program files, at speed, and as a result the program is open and ready to use by the computer user.



The Office Worker Analogy (comparison)

- Imagine that the office worker is the CPU, their drawers are the hard drive and their desk is the RAM.
- The worker (CPU) has just been asked to do some work by their boss. So, they go to their drawers (the hard drive) to find the relevant documents that they need to work on.
- Now, because the drawer is low down with little space, it is not comfortable to work at those documents while they're in the drawer (hard drive). Work would be slow!
- The worker therefore decides to bring the documents onto the desk (RAM), which is at the right height for working, so that they (the CPU) can carry out their task efficiently, at speed.

The CPU

- It is known as the brain of the computer.
- Its job is to process data, by carrying out calculations, performing logic and coordinating input and output signals.
- It is located on the motherboard and will often have a heat sink and fan positioned on top of it, to keep it cool, as it gets very hot, when in use!

Clock Speed

- The CPU's speed is determined by its clock speed
- This is the number of instructions the CPU can process in one second.
- It is measured in Hertz (cycles per second).
- CPUs currently run at about 3 Gigahertz, which means 3 billion Fetch-Decode-Execute cycles per second!

When the CPU processes instructions, it performs the **Fetch-Decode-Execute** cycle, which unsurprisingly consists of 3 stages.

What's inside a Computer?

Component	Image	Description
CPU (Heat Sink and Fan)		- Known as the Brain of the computer - Responsible for processing data & instructions - Gets hot very quickly and so often comes with a heat sink and fan to extract the excess heat.
RAM		- The computer's short-term memory. - Stores programs that are currently in use. - Fast data access speeds - Needs electricity in order to store data
Hard Drive		- The computer's long-term memory. - All programs and user files are stored there. - Does not require electricity to store data.
Motherboard		- Large circuit board which connects all of the other components together, allowing them to communicate with one another. - The CPU and RAM actually slot into this component.
Power Supply Unit (PSU)		- Provides the components of a computer with electricity. - Often has a fan to manage the heat that it generates.
Graphics Card		- Contains a GPU which provides extra processing power, specifically for rendering screen images at speed. - Similar to a CPU, it is often accompanied with a heat sink and fan to extract heat.
Sound Card		- Converts digital audio signals to analogue and vice-versa. - Allows the computer to interface with a variety of sound devices.
Network Interface Card		- Converts a computer's data signals into a form that can be transmitted across a network (and vice-versa).

Knowledge Organiser: Computing Systems —Digital Devices

Digital Devices

It is easy to recognise that personal computers, laptops and mobile devices are computers, but computers are also hidden in many more devices. Because they are relied on so heavily, knowing what they are and how to use them is valuable. Digital devices may be input, output or storage devices , however on a basic level, they all operate through

Input Devices

An **input** device is any piece of computer **hardware used to provide data to a computer system.** Examples include:

- keyboard
- mouse
- scanner
- digital camera

Storage Devices

A **storage device** is a piece of computer equipment which can be **used to store data**. Examples include:

- Hard disk drive
- DVD disk
- USB stick
- Memory Card

Output Devices

An **output** device is any piece of computer hardware **used to communicate the results of data that has been processed.** Examples include:

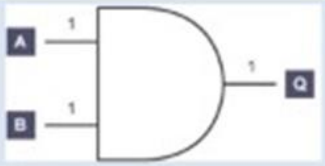
- monitor
- printer
- speaker

What is a Logic Gate

A circuit board can be found inside most digital devices. It is a flat, thin board that has tiny electrical **components** built onto it. Many electronic circuits have to make decisions. They look at one or more **inputs** and use these to determine the **outputs** from the circuit. The process of doing this uses electronic logic, which is based on digital switches called **gates**. Each input and output of the **logic gates** must be one of two states:

True or **1** or **on** **False** or **0** or **off**

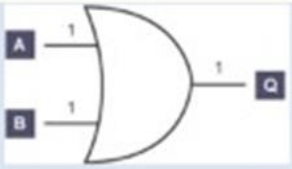
AND



An **AND** gate usually has two inputs. **AND tells us that both Input A AND Input B have to be 1 (or ON) in order for the output to be 1. Otherwise the output is 0.**

The Boolean expression can be written as **Q = A AND B.**

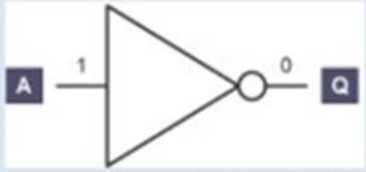
OR



An **OR** gate has two inputs. **OR tells us that EITHER Input A OR Input B has to be 1 (or ON) in order for the output to be 1. Otherwise the output is 0**.

The Boolean expression can be written as **Q = A OR B.**

NOT



A NOT gate has just one input. NOT tells us that Input A has to be 0 (or OFF) in order for the output to be 1. Otherwise the output is 0. A

The Boolean expression is written as Q = NOT A.

Key Vocabulary

Binary	A number system that contains two symbols, 0 and 1. Also known as base 2.
Boolean	A data type in computing which only has two possible values, true or false.
Component	Working parts of a product or system.
Hardware	The physical parts of a computer system, eg a graphics card, hard disk drive or CD drive.
Input	Data which is inserted into a system for processing and/or storage.
Logic Gate	Circuit components which take several inputs, compare the inputs with each other, and provide a single output based on logical functions such as AND, OR and NOT.
Output	Data which is sent out of a system.
Truth Table	Used to assess possible results of a Boolean algebra statement.

Truth Tables

Input A	Input B	Input Q
0	0	0
0	1	0
1	0	0
1	1	1

AND

Input A	Input B	Input Q
0	0	0
0	1	1
1	0	1
1	1	1

OR

Input A	Input Q
1	0
0	1

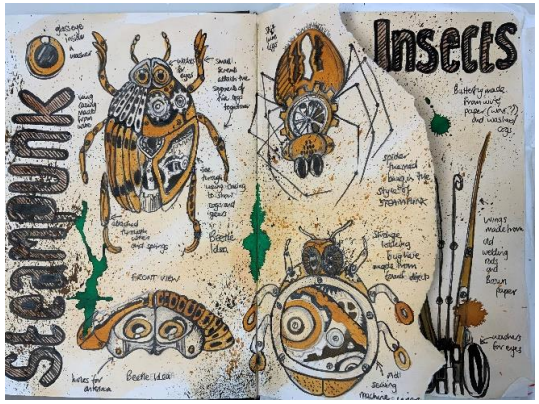
NOT

DT: Y7 Term 2

Design Technology Knowledge Organiser: Y7 Insect Automata Term 2

Practical Knowledge

Designing your Steampunk 3D Insect

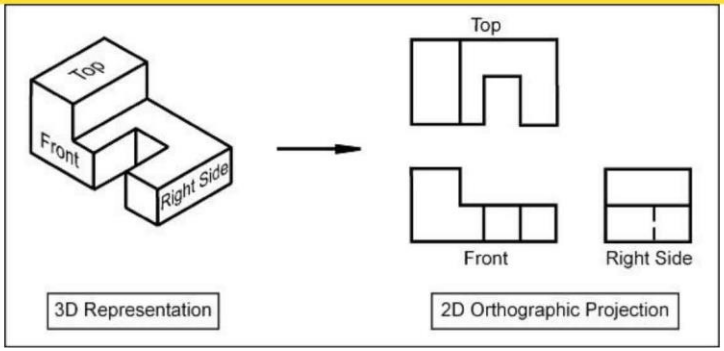


You will learn a range of design skills and develop your annotation skills when completing your design ideas for your 3D Steampunk insect.

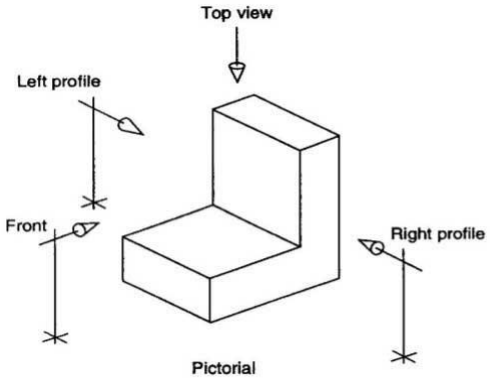
Key Terms and Definitions

Keyword	Definition
Annotation	Explain about your design ideas
SCAMPER	An acronym that helps you develop your ideas into a final idea. Substitute, Combine, Adapt, Modify, Put to other use, Eliminate, Reverse.
Orthographic drawing	A drawing that gives the front, side and top views of the design
Isometric drawing	A drawing that shows three sides of your design

ORTHOGRAPHIC PROJECTION.



Isometric projection



Design Technology Knowledge Organiser: Y7 Insect Automata Term 2

Practical Knowledge

Workshop Safety

🛠️ Workshop Safety Rules 🛠️

Stay Safe, Work Smart!

✅ Before You Start

- Tie back long hair and tuck in loose clothing.
- Wear safety goggles when using tools or machines.
- Listen carefully to your teacher's instructions.

⚠️ While Working

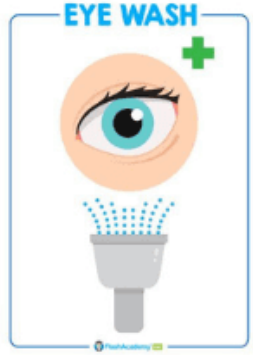
- Use tools properly — one at a time, and only for their intended purpose.
- Keep your workspace tidy — no bags or clutter on the floor.
- Stay focused — no running, pushing, or playing around.

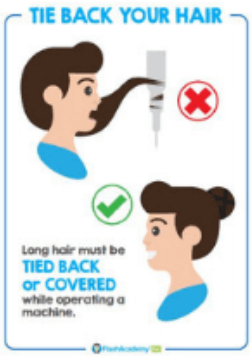
🧯 In Case of Emergency

- Know where the emergency stop buttons are.
- Report any accidents or broken tools to your teacher immediately.
- Stay calm and follow instructions.

🚫 Never

- Use equipment without permission.
- Touch someone else's project or tools without asking.
- Ignore safety signs or rules.





Design Technology Knowledge Organiser: Y7 Insect Automata Term 2

Practical Knowledge

Making your 3D Insect

Paper Mache

Paper mache is the layering of moistened paper and other materials onto a blank surface like a balloon. The adhesive used to wet the paper acts to stick the materials together, we use watered down PVA glue. As the paper dries, the outer shell hardens, which can then be painted and decorated.

Laser Cutting

The cogs and gears will be made by laser cutting the card out. A design is drawn on 2D Design Tools and transferred to the Laser cutting software. The laser accurately cuts the material out to the specific design. It is very accurate, and the cut edges of the material used is very smooth.

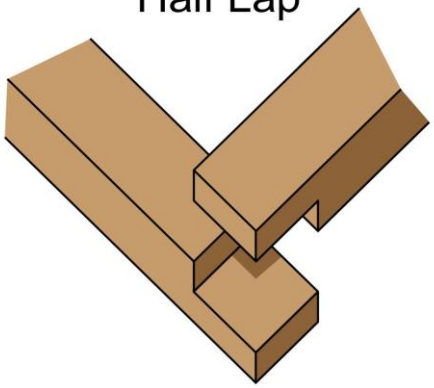
Health and Safety Symbols

Shape	Meaning	Color	Examples
Circle with diagonal bar	Prohibition	RED (contrast: white)	No smoking 
Circle	Mandatory Action	BLUE (contrast: white)	Wear Eye protection 
Equilateral Triangle	Warning	YELLOW (contrast: black)	Danger Flammable material 

Making the toy frame

You will use these tools when making the frame for your toy. You will make **half-lap joints** to make the frame strong. You will mark and measure out the joints accurately using a ruler and pencil.

Half Lap



Hand tools	Machine Tools
File 	Pillar Drill 
Tenon Saw 	Belt Sander 
Try-Square 	

Drama: Y7 Term 2

DRAMA Knowledge Organiser: Darkwood Manor HT3

DRAMA VOCABULARY

- **EXPLORATORY TECHNIQUES:** *tools we use to creative explore characters and conflicts.*
- **STIMULUS:** *a simple idea which gets the creative process started.*
- **IMPROVISATION:** *spontaneously responding to a stimulus.*
- **HOT SEATING:** *an exploratory technique in which a character is interviewed and improvises their responses.*

HOT SEATING:

•Why do we do it?
•**It allows you to develop a stimulus and explore character motivation & perspectives**
•How do we do it successfully?
•**Ask Open Questions**
•Why did you decide to…
•What were you thinking when…
•What do you think about….
•What were you hoping for when…
•What would you do if…"

Keyword	Definition
Facial Expression	How you communicate your character's emotions using your face.
Body Language	How you communicate your character's feelings using your body
Eye Contact	Used to show status, feeling or relationship between characters – can be direct, fixed or withdrawn
Gesture	Movement of arms, hands to convey meaning
Proxemics	Space – the distance between actors, audience, or objects to show emotion or relationships
Levels	Communications of feeling or relationship shown through height.

DRAMA Knowledge Organiser: Facial Expression Y7 HT3

A **facial expression** communicates an **emotion** that tells the audience about the character and the way they react to a situation. ... A facial expression can also convey the character's **true feelings.**

Research has classified six facial expressions which correspond to distinct universal emotions:

disgust, sadness, happiness, fear, anger, surprise.

(It is interesting to note that four out of the six are negative emotions.)

English: Y7 Term 2

Knowledge Organiser: Yr.7 HT3 – Viewpoint Writing

Keywords and Definitions

Context - the circumstances and events that influence the way a text is written.
Purpose – the intended reason for writing a text.
Audience – the intended readers of a text.
Tone - a feeling, state of mind or emotion communicated by a writer.
Methods – particular techniques used by writers to achieve a specific effect. These include:

- Direct Address
- Alliteration
- Facts
- Opinions
- Rhetorical Question
- Repetition
- Emotive Language
- Statistics
- Triple (List of three)
- Personal Pronouns
- Imperatives
- Exaggeration

Knowledge

To effectively convey their viewpoint, a writer may:

- use a particular tone when trying to express a viewpoint (e.g. angry, sarcastic, excited, pessimistic, aggressive, optimistic, worried, friendly). The choice of adjectives, nouns, verbs and adverbs will affect the tone of the piece.
- structure the text to keep the interest of the reader. They may start and end the text in a way to engage the reader and may use a cyclical structure.
- use an anecdote to create a relationship with the reader. This is a story about a real incident, person or situation. An anecdote may make the reader feel like they are 'friends' with the writer; it may make the writer's viewpoint feel more believable; it may make the reader relate to the writer's own experiences as they may have had a similar experience; it may create sympathy/empathy. An effective anecdote uses language to communicate a clear viewpoint. It is usually emotive, written in the first person, and should be relevant and interesting.
- use figurative language including similes, metaphors, personification and hyperbole.
- use emotive language. This is language used to evoke an emotion such as sympathy, excitement, hope, fear and disgust.
- consider the use of paralanguage. This is non-verbal communication and includes intonation, pitch and speed of speaking, hesitation noises, gesture, and facial expression.

Extension - viewpoint writing can be presented in different forms including as an article, a speech, a leaflet or a letter.

Knowledge Organiser HT4: Face – The Play, by Benjamin Zephaniah

Key Vocabulary

Word	Definition	In a sentence
External (*adjective*)	Appearing on the outside of something, connected with a person's physical appearance rather than their personality	The **external** appearance of the house was not much to look at from the pavement, but it was beautifully decorated on the inside.
Internal (*adjective*)	Relating to the inside of something, connected with a person's personality or feelings rather than their physical appearance	He had few physical injuries or scars after the accident, but the **internal**, psychological scars lasted for years
Perception (*noun*)	Someone's point of view about something or their understudying of it	His **perception** of the situation was much more positive than his sister's.
Superficial *(adjective)*	Not looking deeply into a subject, showing only basic understanding or insight into something	He was no expert about 1990s fashion – his knowledge of it was only **superficial**.
Identity *(noun)*	How a person sees themselves or the image that they reveal to other people; the group or culture that they see themselves as being part of	He projects a totally different **identity** to his parents compared with the **identity** he projects with friends or when playing football.

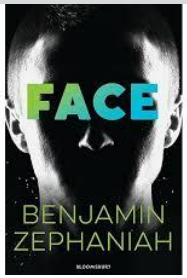
Context:

In 1995, youth dress codes included baggy silhouettes like oversized t-shirts, loose jeans, and flannel shirts, often paired with high-waisted styles, layered looks, and popular accessories like bandanas and backwards caps. Grunge fashion was also influential, featuring ripped jeans, combat boots, and distressed sweaters. Popular brands and styles included Gap, athletic wear, Converse, and character-themed shirts.

1995 youth culture was shaped by a blend of Britpop music, grunge fashion, and new technology like Windows 95. Fashion trends included the "sexy schoolgirl" look and a revival of 1970s styles, while alternative and rave culture continued to thrive, influencing music with the rise of drum 'n' bass and its associated club scene

Extension knowledge: you can enhance your understanding/skills by...

- Researching Benjamin Zephaniah and his work online
- Reading some of Benjamin Zephaniah's poems and/or the novel version of 'Face'



Stage Directions

Instructions written for the actors and director.

Props

The objects/items used to set the scene or used on stage by characters

Costume

The clothing worn by the characters

A good play has:

Suspense

Conflict

Tension

Development

Food & Nutrition: Y7 Term 2

Food & Nutrition Knowledge Organiser: Y7 Health, Safety & Hygiene

Keywords and Definitions

Cross contamination	the unintentional transfer of harmful bacteria from one person, object or place to another.
Hygiene	Cleanliness in washing hands, wearing aprons, tying hair back and washing up.

Knowledge

KNIFE SAFETY

- Never walk around with a knife.
- Hold by the handle and point it downwards.
- Use the correct bridge or claw grip.


Replace knives in the knife block when cleaned.

WEIGHING

1. Place the scales on a flat surface.
2. Turn the scales on.
3. Select 'g' for grams.
4. Place a bowl on the scales and press the on/off/zero button again so the display reads 0.
5. Add ingredients.

Store foods in the fridge at 5°C

CHOPPING BOARDS

RED - RAW MEAT/POULTRY

GREEN - SALAD AND FRUIT

WHITE - DAIRY AND BREAD

BROWN - VEGETABLES

BLUE - RAW FISH

YELLOW - COOKED MEAT/POULTRY

WASHING UP

Use hot, soapy water.

Use a dishcloth or brush to wash up.

Make sure everything is clean for the next person.

Tea towel to dry.

DO NOT PUT DIRTY EQUIPMENT ON THE DRAINING BOARD.

WHITE DIALS - HOB CONTROLS

BLACK DIAL- GRILL/TOP OVEN CONTROLS

BLACK DIAL- OVEN CONTROLS

ALWAYS PREHEAT YOUR OVEN

APRONS NEED TO BE WORN AND TIED.

Food & Nutrition Knowledge Organiser: Y7 Nutrition

Keywords and Definitions

CARBOHYDRATES	PROTEIN	FATS AND OILS	DAIRY PRODUCTS AND ALTERNATIVES	FRUIT AND VEGETABLES

Fibre – helps the body move food through the digestive system.

It is not digested by the body.

Sources include wholemeal breads, rice, pasta, fruit and vegetables.

Knowledge

Nutrient	Function (what it does in the body)
Carbohydrates	Needed for energy
Protein	Needed for growth, repair and maintenance of body cells
Fats & Oils	Needed for warmth, insulation and fat soluble vitamins
Vitamins and Minerals	Needed for bodily functions such as helping to fight infection, wound healing, making our bones strong and regulating hormones.
Water	Needed to keep us hydrated

Food & Nutrition Knowledge Organiser: Y7

Equipment


Measuring jug


Large mixing bowl


Sharp knife


Red chopping board (raw meat)


Black spoon


White spoon


Fish slice


Weighing Scales


Grater


Table knife


Fork


Colander


Whisk

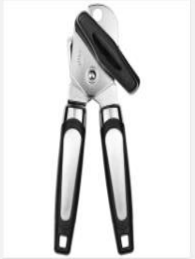

Sieve


Frying pan


Saucepan


Muffin tin


Baking tray


Can opener

Food and Nutrition Knowledge Organiser: Y7 Term 2

Key Words and Definitions

Food Poisoning Bacteria	Source	Symptoms	Time to Symptoms
Salmonella	Raw chicken, eggs	Stomach pain, diarrhoea, vomiting	6–72 hours
E. coli	Undercooked beef, dirty water	Severe stomach cramps, diarrhoea	1–8 days
Listeria	Soft cheese, deli meats	Flu-like symptoms	Days to weeks
Campylobacter	Raw poultry, unclean water	Diarrhoea, cramps, fever	2–5 days

⚠ **Cross Contamination**

When bacteria spread from one food/surface to another.

•**Examples:**

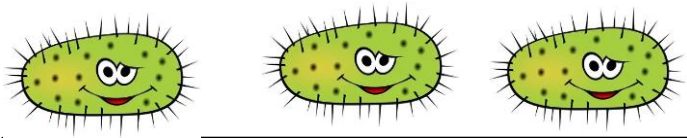
- Using the same chopping board for raw meat and vegetables.
- Not washing hands after handling raw chicken.

•**Prevention:**

- Use **separate equipment** for raw and cooked foods.
- Clean surfaces and **wash hands** thoroughly.
- Store raw meat **below** cooked food in the fridge.

Theoretical Knowledge

Temperature	What Happens
100°C	Boiling point – kills most bacteria
75°C+	Safe cooking temperature – kills bacteria
63°C+	Hot holding – keep cooked food above this temp
5°C – 63°C	**Danger Zone** – bacteria grow quickly here!
0°C – 5°C	Fridge – slows bacteria growth
-18°C	Freezer – bacteria become inactive (not killed)



Conditions for Bacterial Growth

Bacteria multiply quickly when these 4 conditions are right:

M.O.I.S.T.

•**M – Moisture** (e.g. watery foods like soup, meat)

•**O – Oxygen** (some need it, some don't)

•**I – Time** (the longer left out, the more they grow)

•**S – Suitable temperature** (5°C to 63°C = Danger Zone!)

•**T – Type of food** (high-protein foods like meat & dairy)

Food and Nutrition Knowledge Organiser: Y7 Term 2

Carbohydrates

•Carbohydrates are one of the **main nutrients** our bodies need.
•They give us **energy** to move, think and grow.

💪 Functions of Carbohydrates

•Provide the **main source of energy** for the body.
•Fuel the **brain and muscles**.
•Help the body to stay warm.

What Is Sugar?

•A **simple carbohydrate** that gives quick energy.
•Found **naturally in fruit and milk**.
•Added to sweets, cakes, biscuits, drinks.

Starchy carbohydrates (complex)	Bread, pasta, rice, potatoes, cereals
Sugary carbohydrates (simple)	Fruit, sweets, chocolate, cakes, fizzy drinks

⚠ Too Much Carbohydrate (Excess) Can Cause:

•**Weight gain** (if energy isn't used)
•**Tooth decay** (especially from sugary carbs)
•Increased risk of **Type 2 diabetes**
•Blood sugar spikes and crashes

🍭 Too Much Sugar Can Cause:

•Tooth decay 🦷
•Weight gain ⚖
•Energy crashes 😵

Pasta Type	Description
Spaghetti	Long, thin strings
Penne	Tube-shaped, diagonal ends
Fusilli	Spiral or corkscrew-shaped
Lasagne	Flat sheets for layering
Macaroni	Small curved tubes
Ravioli	Stuffed pasta parcels

Food & Nutrition Knowledge Organiser: Y7 Term 2

Skills

Burgers

Ingredients

125g mince (pork, beef, lamb, turkey)

1tsp herbs/spices to add to your mixture.

25g vegetables/fruits that you have chosen
Accompaniments of your choice: bacon, cheese, salad, bread bun, brioche bun

Method

1. Place the meat in a bowl
2. Add seasoning and herbs and mix well
3. Wet hands and shape the mixture into 2 patties.
4. Place on baking sheet
5. Bake for 15 mins
6. Check internal temperature (75 C)
7. Build your burger

Fajitas

Ingredients

2 tortilla wraps
1 lime or 2 tbs lime juice
1 red onion or 4 spring onions
¼ red pepper
¼ yellow pepper
1 tsp fajita seasoning
Guacamole or soured cream
Cheese (optional)

Method

1. Slice the onion and pepper.
2. Heat a tablespoon of oil in a wok or frying pan.
3. Add the onion and stir fry for 3 minutes.
4. Add peppers and any other veg and stir fry for a further 5 to 10 minutes, until cooked through.
5. Add the fajita seasoning and lime juice. Stir to coat the vegetables.
6. Place in a tortilla, add guacamole etc, and roll up.

Bread Sticks

Ingredients

250g Strong White Flour
7g Dried Yeast
½ tsp sugar
½ tsp salt

Method

1. Preheat Oven 220°C, GM7
2. Place flour in a bowl
3. At one edge of bowl add sugar and yeast
4. At the other edge add salt
5. Make a well in the centre of the flour and add approx. 100ml of warm water.
6. Mix with a knife adding more water until the mixture forms a dough.
7. Knead the dough for 5 mins
8. Let the dough rest for 5 mins
9. "Knock" the dough back and divide into 3 to 4 pieces
10. Shape into sticks. Brush with the garlic butter
11. Bake for 20 mins until golden and "hollow" sounding.

Food & Nutrition Knowledge Organiser: Y7 Term 2

Skills

Spaghetti Snack

Ingredients
60g spaghetti (or other pasta)
2 tablespoons olive oil
20g-40g cheese
Black pepper

Optional extras:
1 tablespoon of chopped herbs
½ crushed clove of garlic
Chopped tomatoes
1 tablespoon of pesto

Method
1. Put a large pan of water on to the hob to boil.
2. Add ½ tsp salt and the pasta and cook for about 10 minutes (check instructions on pasta packet.)
3. Grate the cheese.
4. When the pasta is cooked, drain it in a sieve and put it back in the pan.
5. Add the cheese and oil and stir through the pasta.
6. Add any extras.
7. Add black pepper and serve immediately.

Pasta Bake

Ingredients
150g pasta shapes
1 vegetable stock cube
1 tin chopped tomatoes
100 g cheese
1 tbs oil
Vegetables and protein of your choice

Method
1. Put a large pan of water on to boil.When boiling, add pasta. Boil for 8 to 10 minutes.
2. Meanwhile, chop the vegetables and grate the cheese.
3. Drain pasta in a colander and put to one side.
4. Place oil and vegetables in a pan. Cook for 5 – 10 minutes until soft, depending on the vegetables you are using.
5. Add vegetable stock cube and tomatoes to the pan. Allow sauce to thicken.
6. Remove from heat and stir in HALF the cheese.
7. Add your pasta and source of protein and stir well.
8. Place in your ovenproof dish and top with the remaining cheese.
9. Place under the grill for 10 mins to melt and brown the cheese.

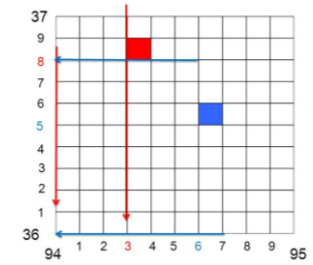
Breakfast Muffins

Ingredients
5 tablespoons sunflower/vegetable oil
150g carrots, grated
100g sugar (brown if possible)
100g self raising flour
½ tsp cinnamon
2 eggs
100g sultanas/raisins/mixed seeds
12 muffin cases

Method
1. Preheat oven 190 C, Gas mark 5.
2. Put muffin cases into a muffin tin.
3. Crack your eggs in a mixing bowl. Check for shell.
4. Add ALL OTHER ingredients to the bowl and mix.
5. Everything should be in the bowl together. This is known as the all in one method.
6. Spoon EVENLY into muffin cases.
7. Bake for 20-25 mins until firm to the touch and golden brown.

Geography: Y7 Term 2

Geography Knowledge Organiser: Y7 – London Calling!

Lesson	Core knowledge
Lesson 1 – How has London Grown over time?	• The capital city of London is in the South-East of England, on the banks of the River Thames. • London was founded by the Romans in 79AD. • The Great Fire of London in 1666 destroyed much of the old city. • During the Industrial Revolution, London's population exploded as people moved there to find work in factories. • Today, London is a wealthy city with a diverse population.
Lesson 2 – How has employment in London changed over time?	• **Primary employment** involves collecting raw materials e.g. farmer, miner • **Secondary employment** involves processing raw materials into manufactured goods e.g. factory worker, builder, baker. • **Tertiary employment** involves selling goods or providing services e.g. teacher, bus driver, shop assistant. • **Quaternary sector** involves IT and research e.g. computer programmer, scientist. • Employment structures have changed over time. In the past, there were many jobs in the primary and secondary sector. Today, the tertiary sector is the largest (80%) and primary sector is the smallest (2%).
Lesson 3 – What are the different zones of London?	 • Urban areas, such as London, have distinct zones. The Burgess Model can be used to explain this. • The **Central Business District (CBD)** is in the centre where important buildings, most shops and services are located. Transport routes meet here. Buildings can be tall, and people live in flats or apartments. • The **inner city** contains low quality, older terraced housing. Factories can be found there but some have now closed. • The **suburbs** feature semi-detached houses with gardens. • The **rural-urban fringe** is on the edge of the city where it meets the countryside. There are larger detached houses, more green space, golf courses, out-of-town shopping centres and airports.
Lesson 4 – How can 6 fig. grid references be used to locate places?	• **Read along the bottom, then up the side:** Always read the numbers along the bottom of the map first (eastings), then the numbers going up the side (northings) – just like going **along the corridor and up the stairs**. • **Split each square into 10 parts:** Imagine each big square on the map is split into 10 tiny parts across and 10 up, so you can be more exact when finding a place. • **Write 6 numbers:** A six-figure grid reference has **3 numbers from the bottom line** and **3 from the side line** – this helps you find an exact spot within the square. 
Lesson 5 – How deprived is London?	• **Deprivation** means the lack of essentials to lead a good life such as work, money, housing and services. • Data including life expectancy, unemployment rates, education, income levels, and housing prices show differences between areas. • **Knightsbridge** is a part of London where people have a very good quality of life, houses are very expensive, health and education levels are high, and people earn more money. However, **Newham** is a different part of London where people have a poorer quality of life, houses are cheaper, health and education levels are lower, and people earn less money, • An Environmental Quality Survey (EQS) can be used to judge the quality of an area. It includes criteria such as building maintenance, vandalism, noise levels, litter, traffic and green spaces. A radar diagram can be used to present and compare EQS data.

Geography Knowledge Organiser: Y7 – London Calling!

Lesson 6 – How do regeneration projects improve inner city areas?	• **Regeneration** refers to the process of improving areas that are run-down especially in older inner-city areas. • Stratford was regenerated because it was one of the poorest areas in London. 1 in 4 adults were unemployed and there were lots of old factories and empty buildings. • The Olympic Park Regeneration Scheme created thousands of new jobs, cleaned up polluted land and water pollution, provide places for sports and leisure activities, improved public transport such as a new Tube station, built new affordable homes and made the area safer from crime.
Lesson 7 – How can we solve the housing shortage in London?	• Housing Shortage: This happens when there aren't enough homes for all the people who need them. It can cause problems like high rent prices and too many people living in one house. • Brownfield Sites: These are pieces of land in cities that had buildings or factories on them before. It can cost more money to build on them again because the land might need cleaning, but they are close to the city centre and already have things like electricity and internet lines. • Greenfield Sites: These are areas of land that have never been built on before, usually found near the countryside. They are cheaper to build on, but building here can harm nature by removing green space, destroying homes for animals, and causing more flooding.
Lesson 8 – What are the causes and impacts of air pollution in London?	• In London, air pollution comes from lots of places like cars and buses, factories, heating homes with gas or wood, and building work • Air pollution can make people sick. It can cause asthma, lung problems, heart disease, and even leads to thousands of early deaths each year. • Air pollution also harms the environment. It can cause acid rain that damages plants and trees, and it adds gases to the air like carbon dioxide and methane, which make climate change worse. • We can help reduce air pollution by using buses and trains instead of cars, making rules for factories to release less pollution, and using cleaner energy like wind and solar power.
Lesson 9 – How is traffic congestion managed in London?	• **Traffic Congestion:** This happens when there are too many cars on the road, causing slow traffic and long delays. • **Congestion Charge:** In London, drivers have to pay £15 a day to drive into busy areas. This is to help reduce traffic and get more people to use buses, trains, or bikes instead. • **London Underground:** Also called "the Tube," this is a fast train that runs under the city. It helps take lots of cars off the road by carrying over a billion people each year. • **Bike Sharing (Boris Bikes):** These are bikes people can rent for short rides around the city. They help cut down on car use, keep the air cleaner, and are great exercise too!

History: Y7 Term 2

History Knowledge Organiser: Y7 HT3 - The Medieval Church

Keywords and Definitions

Key Terms	
Archbishop of Canterbury	The Head of the Church in England, appointed by the Pope in Rome.
Bishop	A senior member of the clergy. Usually un charge of a diocese.
Catholicism	The Christian Church which is followed by Catholics. Led by the Pope.
Clergy	Official members of the Church that can carry out duties such as marriages.
Diocese	A district under the care of a Bishop.
Doom Painting	A painting in medieval churches that showed the joys of heaven and the horrors of hell.
Heaven	Christians believe this is the home of God. It is where good people go when they die.
Hell	Christians believe this is the home of the Devil. Sinners go here when they die.
Heresy	A religious belief that went against the accepted form of Christianity.
Hierarchy	A system in which people are ranked according to their importance.
Indulgences	A payment to reduce the amount of time spent in purgatory.
Monastery	A building occupied by monks which varied in size. They were often found in remote places. As well as being a place to live and work they were also places where the sick and poor could be cared for by the monks.
Monk	Men that have taken the religious vows of poverty, chastity and obedience.
Nun	Women that have taken the religious vows of poverty, chastity and obedience.
Pilgrimage	A journey to the shrine of a great saint as a way of showing you were sorry for your sins.
Purgatory	A place that Catholics believe is between heaven and hell. People go there when they die to repent for their sins before they can go to heaven.
Priest	A Church minister that were meant to help people live good lives. They were not allowed to marry as they had to devote their lives to God. They could forgive people their sins.
Pope	The Head of the Catholic Church.
Tithe	A 10% tax that people had to pay to the Church. It could be paid in money, crops or equipment.

Knowledge

- In the Medieval period the Roman Catholic Church was the dominant form of Christianity in Britain.
- By 1100 most countries in Europe were Catholic though some people did follow Islam or Judaism.
- The Catholic Church had a clear hierarchy starting with the Pope and ending with village priests.
- There were also monks and nuns that lived apart from other people and dedicated their lives to God.
- The Pope was believed to be God's representative on Earth and therefore he could not be questioned.
- The Church was very rich and owed a lot of land.
- The Church also took care of people. Ministers performed marriages, baptisms and last rites when someone was about to die.
- The Church was responsible for storing many books including medical textbooks and helped preserve them.
- Christians would pay 10% of their earnings each year to the Church to support the clergy.
- Indulgences could be paid by rich people to help them get to heaven quicker.
- People believed that God controlled every part of their life including illnesses and success at work.
- Everyone had to go to Church on Sundays and holy days.
- The Church was there at important stages in life. Babies were baptised, marriage was special religious ceremony and the last rites were given to the dying.
- Religion shaped what went on during the year. People looked forward to feats on special holy days such as Christmas, Easter and Candlemas.

Candlemas: This holy day takes place 40 days after Christmas. Christians take candles to be blessed in Church and is a chance to eat pancakes.)

Heaven and Hell

Life after death was very important to medieval people. Catholics believed that if you followed the Church's rules and led a good life you would go to heaven. If you did not live a good life then you would go to purgatory or hell.

Most people could not understand the Church services because they were in Latin so doom paintings were used to help them understand and to show them what would happen if they did not follow the rules.

History Knowledge Organiser: Y7 HT3 – The Black Death

Keywords and Definitions

Key Terms	
Bubonic Plague	Was carried in the bloodstream of rats. Fleas bit the rats and become infected. They then hopped onto humans, bit them and passed on the disease.
Buboes	A symptom of bubonic plague and occur as painful swellings in the thighs, neck, groin or armpits
Humours	The body was a system of four fluid "humours": black bile, yellow bile, phlegm and blood. If the humours were in balance, then the body was in health. If the humours were in imbalance, then the person was sick.
Miasma	An unpleasant or unhealthy smell or vapour.
Pneumonic Plague	Scientists believe the bubonic plague mutated into a more virulent strain that passed easily from human to human. This was known as pneumonic plague. It was more deadly and was caught by breathing in the germs when an infected person coughed or sneezed.
Purging	the expulsion of food from the body by self-induced vomiting or the use of laxative

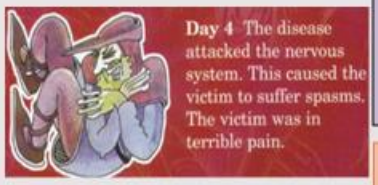
Consequences of the Black Death

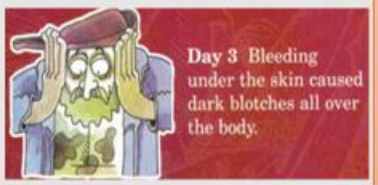
The lives of those who survived improved for many because:

1. Higher wages – Lords could not get enough labourers to work on their land so were prepared to pay higher wages. Sometimes they offered higher wages to peasants from other manors so they would work on their land instead.
2. No labour services – Peasants either stopped doing their work for the Lord or gave a low payment instead. Lords did not complain because they wanted to keep the peasants on the manors.
3. More land and low rents – Peasants were able to farm more land at lower rents because there was so much unworked land around.
4. More freedom – Peasants could now go and work for someone else.

Knowledge

Symptoms of the Bubonic Plague





- The Black Death arrived in England in 1348.
- It spread from Asia to Europe and then to England.
- In England over 1/3 of the population died – about 2 million people.
- Bubonic plague killed about 70% of patients. victims' symptoms first appeared 1-3 days after being bitten. They usually died 4-7 days later.
- Fleas multiply quickly in warm weather but die off in cold weather so bubonic plague spreads more quickly in the summer.
- The pneumonic plague attacks the lungs and is caught through breathing. Nearly 100% of people who caught this died.

Explanations for the plague

At that time doctors did not know about germs causing diseases, but people did have their own ideas about the Black Death. They believed it was caused by:
Religion: God punishing people.
Common beliefs: The humours in people's bodies being out of balance.
Supernatural: A strange alignment of the planets.
Bad air (or miasma) due to the human dung and filth lying in the streets of London. Other people believed that this impure air may have originated from poisonous fumes released by an earthquake or a volcano.
Common beliefs: In Europe, many people blamed the Jewish population, but the Jews had been expelled from England in the 13th century

Attempted cures and preventative measures:

To stop the plague, people:
Bad air: Lit fires and spread perfumes in the air to keep away the bad smells.
Religion: Prayed to God for forgiveness of their sins.
Common beliefs: Bled the sick and purged them to make them sick or empty their bowels to balance the humours.
Made a candle as tall as a man and burned it night and day.

History Knowledge Organiser: Y7 HT4 – The Peasants' Revolt, 1381

Keywords and Definitions

Key Terms	
Freemen	a person who is not a slave or serf.
Labour services	Work that peasants would do for the Lord of the Manor.
Peasants	a poor agricultural labourer.
Poll Taxes	a system of taxation whereby each taxpayer was taxed the same fixed sum.
Rebels	People who rise in opposition against a government or leader:
Serf	an agricultural labourer bound by the feudal system who was tied to working on their lord's estate
Villeins	Someone who rented land from the lord of the manor in the feudal system. They promised payments and services in return for land.

Causes

Why did the peasants revolt?

- They did not want to do **labour services** for the lord of the manor.
- The lords were trying to force wages down to the same as they were before the Black Death.
- They objected to paying **Poll Taxes** off 4 pence in 1377, 1379 and 1381.

Chronology: 1381

1. May: Villagers in Essex refused to pay **taxes** and attacked the tax collectors. They quickly won support from other villages in Kent and Essex.
2. 7 June: The rebels freed a priest called John Ball from prison in Kent. Ball had been imprisoned for saying that all men should be equal and free.
3. 12 June: he rebels arrived at Blackheath near London. Their leader was Wat Tyler.
4. 13 June: 14-year-old King Richard II went by river to meet the **rebels**. But there was so much confusion he did not land and there was no meeting.
5. The rebels entered London and burned down the Duke of Lancaster's house.
6. 14 June: The King talked to the rebels and agreed that all **villeins** should be freemen and all rebels would be pardoned. Meanwhile, some rebels attacked the Tower of London and murdered the Archbishop of Canterbury and other advisers of the King.
7. 15 June: The King met the rebels' leader, Wat Tyler, at Smithfield and Tyler was killed by one of the King's men. The King ordered the rebels to go home, repeating the promise that they would all become **freemen**. They went home.
8. Once the rebels had gone home, King Richard broke all the promises he had made. All over Essex and Kent, rebel leaders were rounded up and hanged. John Ball was found hiding in an old ruin. The King had his head cut off and fixed on London Bridge.

Long-term consequences

Although the peasants gained nothing at the time, it did make the rich and powerful more careful about how they treated the peasants. Within 50 years the peasants had got much of what they wanted, for example, the end of labour services and improved wages.

History Knowledge Organiser: Y7 HT4 - The Wars of the Roses

Key Term	Definition
Plantagenets	A royal dynasty that ruled England from 1154 to 1485.
Regent	Someone who rules in place of the King if he can't rule himself.
Illegitimate	A child who will not inherit the throne because they were born outside of a marriage.
Civil War	A war between groups in the same country
House of Lancaster	Half of the Plantagenet family, based in Lancaster. (Red Rose)
Dynasty	A bloodline of kings or rulers.
House of York	Half of the Plantagenet family, based in York. (White Rose)
Heir	The person next in line for the throne

Knowledge

House of York vs House of Lancaster

In the mid 1400s the two sides of the ruling Plantagenet family of England began to fight over the throne. Each side believed they were the legitimate rulers of the country. The House of Lancaster was represented by a red rose and York by a white rose. What became known as the Wars of the Roses was a series of civil wars fought between the two sides of the family between 1455 and 1485. During these 30 years the throne switched between the two sides several times.

Henry VI 1422 to 1461 (Lancaster)

He was the last Lancastrian ruler of England; Henry's reign was dominated by the Wars of the Roses. Known as the mad King, he kept having to take breaks from ruling. Regents often ruled when he was ill.

Edward IV 1461 to 1483 (York)

The first Yorkist king. Edward IV was a powerful warrior and a clever tactician. He defeated Lancastrian armies on many occasions. However, he was a better fighter than king and left an unstable succession when he died leaving two young sons behind.

Princes in the Tower and Richard III

Edward IV died leaving his two young sons, Richard 9 and Edward 12 to rule the country, as Edward V was too young their Uncle Richard ruled as a regent. Richard placed his nephews in the Tower of London for safety. Despite this Richard took the crown from his nephew and became King Richard III the boys mysteriously vanished shortly after.

Wars of the Roses Timeline

1. **1455-1461-** Lancastrian king Henry VI's poor rule causes conflict.
2. **1461**: Edward of York, Edward IV, proclaimed king in London. Henry VI (Lancastrian) goes into hiding.
3. **24 June 1465:** Henry VI (Lancastrian) captured and imprisoned in the Tower of London.
4. **21- 22 May 1471:** Henry VI was killed in the Tower of London. Henry Tudor, the last Lancastrian claimant to the throne, fled to France.
5. **9 April 1483:** Edward IV dies, his young son Edward V takes throne with his uncle Richard acting as regent.
6. **June 1483:** Richard imprisons his nephews in the Tower of London and makes himself King Richard III
7. **22 August 1485:** Battle of Bosworth. King Richard III killed, and the Lancastrian Henry Tudor became King Henry VII.
8. **1485**: Henry Tudor married Elizabeth of York thus uniting the two houses. This ended the Wars and began the Tudor dynasty.

Mathematics:

Y7 Term 2

Mathematics

Year 7 HALF TERM 3:

S2 Graphing data

In this chapter, students explore a variety of ways to represent and interpret data visually. They begin by creating and analysing pictograms and bar charts, developing skills in reading, constructing, and comparing categorical data displays. This extends to dual and composite bar charts, which help students compare multiple data sets effectively. Students then move to coordinate geometry by plotting points in the first quadrant, setting the foundation for understanding relationships between variables. They investigate scatter graphs to identify patterns and explore correlation, learning to describe and interpret positive, negative, or no correlation. The chapter introduces lines of best fit as a tool for summarising trends and making predictions from data. Students also work with time-series graphs to understand how data changes over time. Finally, they explore non-linear relationships, broadening their understanding of how data can be represented beyond simple linear models. Throughout, students develop critical thinking and analytical skills essential for working with data in real-world contexts.

N4 Fractions, decimals and percentages

In this chapter, students explore the interconnected concepts of fractions, decimals, and percentages to develop a flexible understanding of part-whole relationships. They begin with representing tenths and hundredths, using number lines and visual models to build a concrete sense of these fractions and their decimal equivalents. Students extend their knowledge to include fifths, quarters, eighths, and thousandths, using diagrams and number lines to compare and order values. The concept of percentages is introduced alongside fractions and decimals, highlighting their equivalence and practical use. Through a range of representations, students practice converting between simple fractions, decimals, and percentages, gaining fluency and confidence. They deepen their understanding by exploring equivalent fractions and interpreting fractions as divisions, reinforcing the relationship between these different numerical forms. Later in the chapter, students encounter more challenging problems involving fractions, decimals, and percentages greater than one, encouraging them to apply their skills in unfamiliar contexts and extend their reasoning.

Knowledge Organisers : Year 7 HT3 S2 Graphing data

Mathematics

What do I need to be able to do?

- Step 1 Pictograms
- Step 2 Bar charts
- Step 3 Dual bar charts
- Step 4 Composite bar charts
- Step 5 Coordinates in the first quadrant
- Step 6 Scatter graphs
- Step 7 Correlation
- Step 8 Lines of best fit
- Step 9 Time-series graphs
- Step 10 Non-linear relationships

Keywords

Hypothesis: an idea or question you want to test
Sampling: the group of things you want to use to check your hypothesis
Primary Data: data you collect yourself
Secondary Data: data you source from elsewhere e.g. the internet/ newspapers/ local statistics
Discrete Data: numerical data that can only take set values
Continuous Data: numerical data that has an infinite number of values (often seen with height, distance, time)
Composite Bar Chart – A bar chart where each bar is split into parts to show sub-categories within a total
Coordinate – A pair of numbers (x, y) that shows a position on a graph
Scatter Graph – A graph that shows individual points plotted using coordinates, often to observe trends or patterns
Correlation – A measure of how strongly two variables are related, can be positive, negative, or none

Set up a statistical enquiry

Write a suitable hypothesis → Design a data collection sheet → Pros/ Cons of sampling → Pros/ Cons primary or secondary data → Discrete or continuous data?

Features of a data collection sheet

Grouped or ungrouped categories

Data Title	Tally	Frequency
	𝍸	

Total number of that group observed

Design and criticise a questionnaire

The Question - be clear with the question - don't be too leading/ judgemental

e.g How much pocket money do you get a week?

Responses – do you want closed or open responses? – do any options overlap? – Have you an option for all responses?

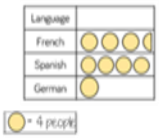
Zero option → ☐ £0 ☐ £0.01 - £2 ☐ £2.01 - £4 ☐ more than £4 ← More option

NOTE: For responses about continuous data include inequalities $< x \leq$

Pictograms, bar and line charts

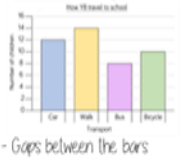
Represents quantitative data

Pictogram



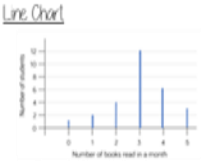
- Need to remember a key
- Visually able to identify mode

Bar Chart



- Gaps between the bars
- Clearly labelled axes
- Scale for the axes
- Title for the bar chart
- Discrete Data

Line Chart

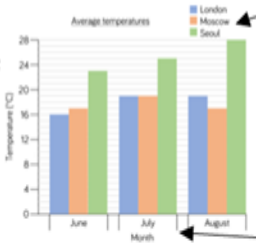


- Gaps between the lines
- Clearly labelled axes
- Scale for the axes
- Discrete Data

Multiple Bar chart

Compares multiple groups of data

- Clearly labelled axes
- Scale for axes
- Comparable data bars drawn next to each other

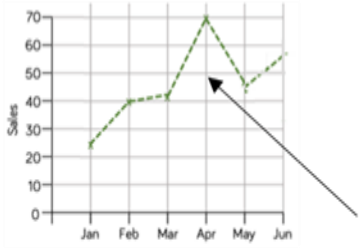


Key/ Colour code for separate groups of information

Gap between different categories of data

Time-Series

This time-series graph shows the total number of car sales in £1000 over time



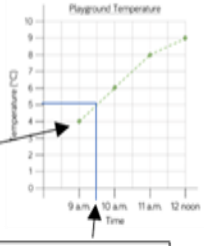
Look for general trends in the data. Some data shows a clear increase or a clear decrease over time.

Readings in-between points are estimates (on the dotted lines). You can use them to make assumptions

Draw and interpret line graphs

- Commonly used to show changing over time
- The points are the recorded information and the lines join the points

Line graphs do not need to start from 0



More than one piece of data can be plotted on the same graph to compare data

It is possible to make estimates from the line e.g. temperature at 9.30am is 5°C

Draw and interpret a scatter graph

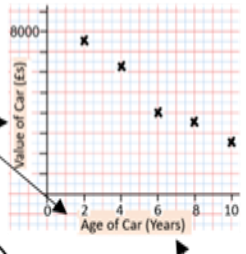
Age of Car (Years)	2	4	6	8	10
Value of Car (£s)	7500	6250	4000	3500	2500

- This data may not be given in size order
- The data forms information pairs for the scatter graph
- Not all data has a relationship

"This scatter graph shows as the age of a car increases the value decreases"

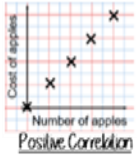
The link between the data can be explained verbally

All axes should be labelled



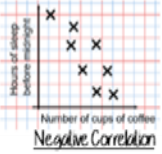
The axis should fit all the values on and be equally spread out

Linear Correlation



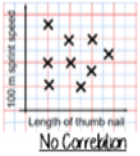
Positive Correlation

As one variable increases so does the other variable



Negative Correlation

As one variable increases the other variable decreases



No Correlation

There is no relationship between the two variables

Knowledge Organisers : Year 7 HT3
S2 Graphing data

Mathematics

S2 - GRAPHING DATA

Retrieval Practice

1) Reflect the shape in the mirror line.

2) Sketch the line $y = -x$.

3) What is the height of a triangle with an area of 48 cm^2 and a base of 8 cm?

4) Round 85 678 to 1 significant figure.

Sparx Maths

Extension work

Codes for related Independent Learning tasks on SPARX maths:
Click on 'Independent Learning' on home page then enter code in search box

Pictograms – U506
Bar Charts – U363 (Drawing), U557 (Interpreting)
Dual Bar Charts – Covered in U363/U557
Composite Bar Charts – Covered in U363/U557
Coordinates in the First Quadrant – U789
Scatter Graphs – U199 (Plotting), U277 (Interpreting)
Correlation – Covered in U277
Lines of Best Fit – U128
Time-Series Graphs – U590 (Drawing), U193 (Interpreting)

Careers Focus – Where could this take you?

I am a scientist who works for a **government agency**. I will analyse and interpret data to gain information on a variety of different subjects and problems. I will then produce papers for ministers to read to influence policies that are made by the government.

Topic Link

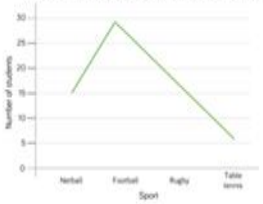
This topic links to:
Solve problems with line charts and bar charts, construct and interpret pie charts

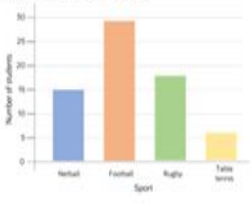
Additional Resources

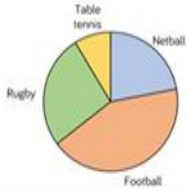
To further practice and develop your knowledge see Sparx clips above or https://corbettmaths.com/contents/

Self quizzing

Dora wants to use a diagram to represent the number of students that attended each after school sports club.







Which diagram best represents the information?
Why?

Challenge Activities

Dexter and Annie throw 20 rounds of 3 darts each.
They both have the same average score.
Dexter's scores have a range of 23
Annie's scores have a range of 8

Who is the more consistent player? Why?

Knowledge Organisers : Year 7 HT3
N4 Fractions, decimals and percentages

Mathematics

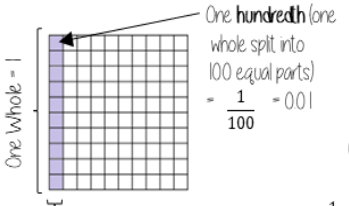
What do I need to be able to do?

Step 1 Represent tenths and hundredths
Step 2 Number lines with fractions and decimals
Step 3 Tenths, hundredths, fifths and quarters
Step 4 Eighths and thousandths
Step 5 Understand percentages
Step 6 Convert simple FDPs
Step 7 Fractions as diagrams
Step 8 Fractions on a number line
Step 9 Equivalent fractions
Step 10 Fractions as division
Step 11 Convert FDP
Step 12 FDP greater than 1 (E)

Keywords

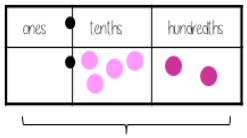
Tenths – One part when a whole is divided into ten equal pieces (0.1).
Hundredths – One part when a whole is divided into 100 equal parts (0.01).
Fraction – A number expressing parts of a whole, written as numerator/denominator.
Decimal – A way to write fractions using a decimal point and place value (e.g. 0.25).
Percentage – A fraction out of 100, shown with a "/" (e.g. 25/ = 25/100 = 0.25).
Number line – A straight line where numbers are placed in order, used to compare/visualise values.
Equivalent – Two expressions representing the same value (e.g. ½ = 0.5 = 50/).
Mixed number – A whole number plus a fraction (e.g. 1¾).
Diagram – Visual representations (e.g. pie, bar, shaded models) to show fractions.
Division – The operation of splitting into equal parts; fractions can represent division results.

Tenths and hundredths



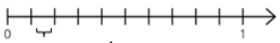
One **hundredth** (one whole split into 100 equal parts) = $\frac{1}{100}$ = 0.01

One **tenth** (one whole split into 10 equal parts) = $\frac{1}{10}$ = 0.1



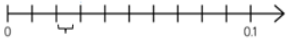
0 ones, 5 tenth and 2 hundredths
0 + 0.1 + 0.1 + 0.1 + 0.1 + 0.1 + 0.01 + 0.01
= 0 + 0.5 + 0.02
= 0.52

On a number line



One whole – split into 10 equal parts

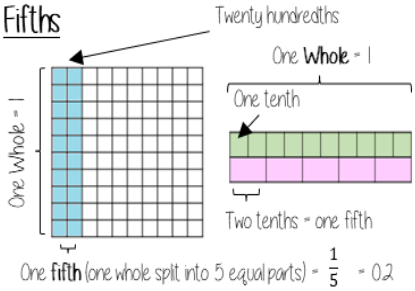
One tenth = $\frac{1}{10}$ = 0.1



One tenth – split into 10 equal parts

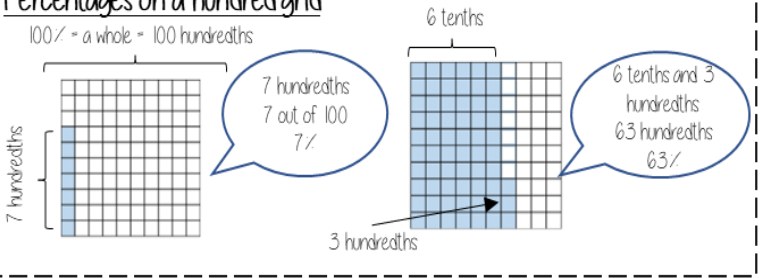
One hundredth = $\frac{1}{100}$ = 0.01

Fifths



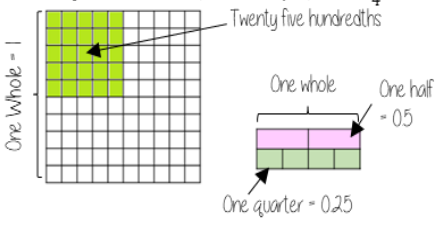
One **fifth** (one whole split into 5 equal parts) = $\frac{1}{5}$ = 0.2

Percentages on a hundred grid



Quarters

One **quarter** (one whole split into 4 equal parts) = $\frac{1}{4}$ = 0.25



Simple pie charts

A pie chart has 360° so all FDP calculations are out of 360

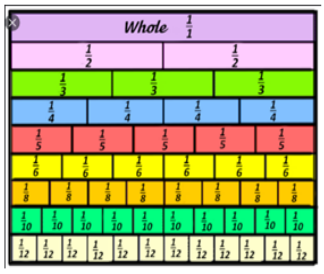
Split into 10 parts
= 10/ = 36°

Split into 2 parts
= 50/ = 180°

Split into 5 parts
= 20/ = 72°

Equivalent fractions

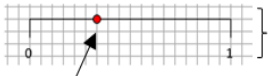
Represent equivalence with fraction walls



Fractions – on a diagram

The denominator is represented by EQUALLY sized parts – this is split into quarters

Fractions – on a number line



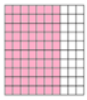
This point is at the 6th part
6 is the **numerator**

One whole split into 18 equal parts
18 is the **denominator**

$\frac{6}{18} \leftarrow \frac{3}{9} \leftarrow \frac{1}{3}$

Convert 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

This will give you the answer in the simplest form

× 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

Knowledge Organisers : Year 7 HT3
N4 Fractions, decimals and percentages

Mathematics

N4 - FRACTIONS, DECIMALS AND PERCENTAGES

Retrieval Practice

1) Round 23.72 to 1 significant figure

2) Which is greater 300 million or 30 billion?

3) Work out the size of each interval on the number line.

4) The range of a set of numbers is 30
The greatest number in the set is 60
Find the smallest number in the set.

Sparx Maths

Extension work

Codes for related Independent Learning tasks on SPARX maths:

Click on 'Independent Learning' on home page then enter code in search box

Represent tenths & hundredths – U600
Number lines with fractions & decimals – M958
Tenths, hundredths, fifths & quarters – M264, M553
Eighths & thousandths – U692, M939
Understand percentages – M553
Convert simple FDP – M264
FDP as diagrams – U874
FDP on a number line – M235
Equivalent FDP – M410
FDP as division – M939
Convert FDP – U888
FDP greater than 1 (E) – U888, M264 *(Extension content)*

Career Focus - Where could this take you?

A data analyst is like a detective for numbers. They look at lots of information and find hidden patterns or secrets that help companies and people make better decisions.

Topic Links

This topic links to:

- Fraction, decimals and percentages

Additional Resources

To further practice and develop your knowledge see:

- https://corbettmaths.com/contents/
  Number: 121-128

Self quizzing

On a number line, draw arrows to show the approximate position of:

- 0.65
- Three tenths
- Three hundredths
- $\frac{9}{10}$
- $\frac{9}{100}$
- $\frac{99}{100}$

Sort these cards into matching groups.

Sam has 12 dog treats and shares them out between his 5 dogs.

$5 \div 12$

$12 \div 5$

$\frac{5}{12}$ $2\frac{5}{2}$ $\frac{12}{5}$ $2\frac{2}{5}$

Julie has 5 pizzas and she shares them between 12 children.

Challenge Activities

What are the missing numbers?

$6.4 = 1 + \square$

$3\frac{2}{5} = 1 + \frac{\square}{5}$

Mathematics

Year 7 HALF TERM 4:

N5 Directed number

In this chapter, students develop a thorough understanding of directed numbers, beginning with their representation on number lines. They learn to compare and order positive and negative numbers, gaining confidence in recognising how values relate on both sides of zero. Students explore calculations that cross zero, building their understanding of how addition, subtraction, multiplication, and division work with negative numbers. The concept of zero pairs is introduced to help students visualise and simplify expressions involving directed numbers. The chapter progresses to performing operations with directed numbers—adding, subtracting, multiplying, and dividing—while also reinforcing the importance of order of operations in calculations involving negative values. Practical use of calculators is incorporated to support accuracy and efficiency.

Through visual aids, reasoning, and varied practice, students develop fluency in working with directed numbers across a range of contexts, preparing them for algebra and problem-solving involving negative values.

N6 Fractions and percentages of amounts

In this chapter, students strengthen their understanding of fractions and percentages in the context of finding amounts, reinforcing the connection between part, whole, and proportional reasoning. They begin by calculating a fraction of a given amount and then progress to using this to find the original whole. Visual models and bar representations are used to support conceptual understanding at each stage. The chapter then introduces finding percentages of amounts, both with and without a calculator. Students develop efficient mental and written methods for common percentages and learn to apply calculator techniques for more complex values. Percentage increase and decrease are introduced in practical contexts, helping students make connections to everyday problems involving discounts, mark-ups, and changes over time. Later steps extend learning to reverse percentage problems—where a percentage is used to find the original amount—and to calculations involving fractions and percentages greater than one. Throughout, students use structured reasoning and problem-solving strategies to build fluency and confidence in working flexibly between fractions, percentages, and whole-part relationships.

G1 Perimeter and Area

In this chapter, students develop skills in measuring and calculating the perimeter and area of various shapes, beginning with practical unit conversions between different metric lengths. They learn to find the perimeter of simple polygons and then extend this to compound shapes composed of multiple polygons. Students' progress to calculating areas of fundamental shapes including rectangles, parallelograms, triangles, and trapeziums, using formulae and visual reasoning to support their understanding. Emphasis is placed on solving real-world problems involving perimeter and area, encouraging students to apply their knowledge flexibly. The chapter concludes with opportunities to form algebraic expressions related to perimeter and area, supporting early algebraic thinking and problem solving. This combination of measurement, calculation, and algebraic representation prepares students for more advanced geometry and measurement concepts.

Knowledge Organisers : Year 7 HT4
N5 Directed number

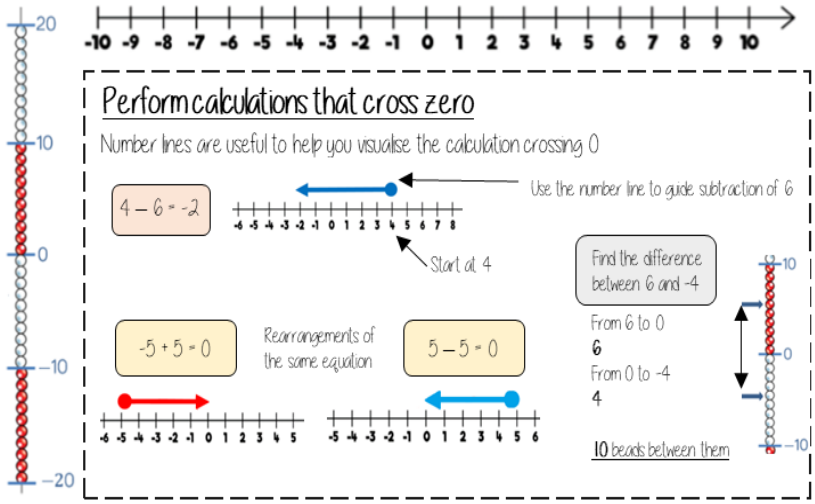
Mathematics

What do I need to be able to do?

Step 1 Directed number and number lines
Step 2 Compare, and order directed numbers
Step 3 Calculations that cross zero
Step 4 Directed number and zero pairs
Step 5 Add directed numbers
Step 6 Subtract directed numbers
Step 7 Multiply and divide directed numbers
Step 8 Order of operations with directed numbers
Step 9 Use a calculator with directed numbers

Keywords

Directed number: A number that has both size and direction — it can be positive (above zero) or negative (below zero).
Integer: A whole number that can be positive, negative, or zero.
Number line: A visual line used to show numbers in order, including negative numbers, zero, and positives.
Zero pair: A positive and negative number that cancel each other out to make zero (e.g. +3 and −3).
Additive inverse: A number that, when added to another, makes zero (e.g. the additive inverse of +5 is −5).
Compare: To decide if one number is greater than, less than, or equal to another.
Order: To arrange numbers from smallest to largest (ascending) or largest to smallest (descending).
Crossing zero: A calculation (like subtraction) that moves from positive to negative or vice versa.
BIDMAS/BODMAS: The rule for order of operations: Brackets, Indices, Division/Multiplication, Addition/Subtraction used when calculating with directed numbers.



Perform calculations that cross zero

Number lines are useful to help you visualise the calculation crossing 0

4 − 6 = -2

Use the number line to guide subtraction of 6

Start at 4

-5 + 5 = 0

Rearrangements of the same equation

5 − 5 = 0

Find the difference between 6 and -4

From 6 to 0
6
From 0 to -4
4

10 beads between them

Add directed numbers

= −1
= 1
Representations

2 + - 4 = -2

Zero pair
(-1 + 1 = 0)

Two "−1" left
= -2

8 + -3 = 5

Partitioning

8 + -3 = 5

5 + 3 + - 3 = 5

Partition the value to create a zero pair calculation

Generalisation
+ − = −

Subtract directed numbers

= −1
= 1
Representations

=
Representation for calculation

2 - - 1 = 3

"Subtract" – means take away or remove

Take away one

Start with the representation of 2

= 3

2 - - 3 = 5

= 5

Generalisation
− − = +

Multiply/ Divide directed numbers

-3 -3

Two representations of the same calculation

2 x -3 = -6

Negative, Negative calculation

-2 x -3

This is the negative of 2 x -3

The act of making counters into their negative is turning them over

-2 x -3 = 6

Divisions are the inverse operations

Evaluate algebraic expressions

a = 5
b = -4

$a^2 = 5^2$
$a^2 = 25$

$b^2 = (-4)^2$
$b^2 = 16$

With negative numbers the brackets are important so that it performs -4 x -4.

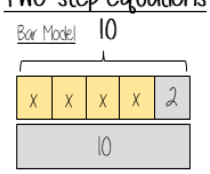
Brackets around negative substitutions helps remove calculation errors

2a − b = 2 x 5 − (-4) = 10 + 4 = 14

3b − 2a = 3(-4) − 2(5) = -12 − 10 = -22

Two-step equations

Bar Model

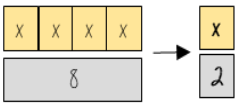


4x + 2 = 10

10 − 4x = 2

Representing the same question (use fact families)

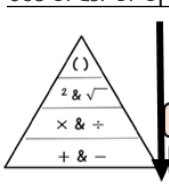
Function machine



x → x4 → +2 → 10

Inverse operations to find x

Use order or operations



Brackets
Indices or roots
Multiplication or division
Addition or subtraction

Brackets around negative substitutions helps remove calculation errors

Remember square roots have a positive and negative value

×	−3	−2	−1	0	1	2	3
−3	9	6	3	0	−3	−6	−9
−2	6	4	2	0	−2	−4	−6
−1	3	2	1	0	−1	−2	−3
0	0	0	0	0	0	0	0
1	−3	−2	−1	0	1	2	3
2	−6	−4	−2	0	2	4	6
3	−9	−6	−3	0	3	6	9

Knowledge Organisers : Year 7 HT4
N5 Directed number

Mathematics

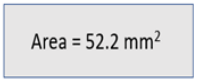
N5 - DIRECTED NUMBER

Retrieval Practice

1) What temperature is closer to 0, 3°C or −2°C?

2) Work out $33\frac{1}{3}\%$ of 600.

3) Find the length of the missing side of the rectangle.



4) Complete: $p + 7p \equiv 10p - \square$

Sparx Maths

Extension work

Codes for related Independent Learning tasks on SPARX maths:

Click on 'Independent Learning' on home page then enter code in search box

Directed numbers and number lines N501, N502
Compare and order directed numbers N503, N504
Calculations that cross zero N506 Directed number and zero pairs N505
Odd directed numbers N507 Subtract directed numbers N508
Multiply and divide directed numbers N509
Order of operations with directed numbers N510
Use a calculator with directed numbers N511

Career Focus - Where could this take you?

A data analyst is like a detective for numbers. They look at lots of information and find hidden patterns or secrets that help companies and people make better decisions.

Topic Links

This topic links to:
Order of operations
Four operations
Powers and roots

Additional Resources

To further practice and develop your knowledge see :
https://corbettmaths.com/contents/
Negative numbers 205

Anagrams

e s l r v n e

o c u m t t i v e m a

P c r t u o d

X e o n p s i e r s

Self quizzing

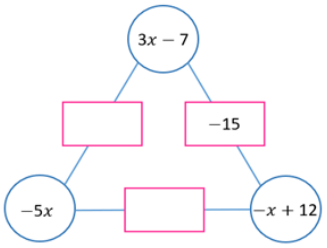
Calculate. Show each step of your working.

- $21 + 18 \div -3$
- $\frac{21 + 18}{-3}$
- $-3 \times 5 + 8 - 7$
- $3(5 + 8) - 7$
- $-6^2 + 14 \times 2$
- $(-6)^2 + 14 \times 2$
- $-3 + 4^2$
- $(-3 + 4)^2$

Challenge Activities

The value in the rectangle is the total of the expressions in the circles on either side.

Complete the missing numbers in the rectangles.



Knowledge Organisers : Year 7 HT4
N6 Fractions and percentages of amounts

Mathematics

What do I need to be able to do?

Step 1 Fraction of an amount
Step 2 Use a fraction to find the whole
Step 3 Percentage of an amount (non-calculator)
Step 4 Percentage of an amount (calculator)
Step 5 Percentage increase and decrease
Step 6 Use a percentage to find the whole
Step 7 Solve problems with fractions and percentages greater than 1 (E)

Keywords

Fraction – Part of a whole, written as numerator/denominator.
Whole – The total amount or complete quantity.
Percentage – A fraction out of 100, shown with "%".
Increase – When a quantity gets larger.
Decrease – When a quantity gets smaller.
Calculator – Using a device to perform calculations quickly.
Mental – Doing calculations in your head without tools.
Reverse – Finding the original amount from a given fraction or percentage.
Greater – Values larger than one whole (e.g., >100%).
Amount – The quantity or total being worked with.

Fraction of a given amount

Find $\frac{2}{5}$ of £205

The bar represents the whole amount

£205

£41 | £41 | £41 | £41 | £41

2 out of the 5 equal parts

2 x £41 = £82

£205 ÷ 5 = £41

Each part of the bar model represents £41

90

30 | 30 | 30

15 | 15 | 15

45

Use bar models for comparisons

$\frac{1}{3}$ of 90 = 30

$\frac{2}{3}$ of 45 = 30

$\therefore \frac{1}{3}$ of 90 = $\frac{2}{3}$ of 45

Use a fraction of amount

$\frac{2}{3}$ of a value is 70. What is the whole number?

70

35 | 35 | 35

70 ÷ 2 = 35

Each part of the bar model represents 35.

35 x 3 = 105

The whole number is 105

The wording of the question is important to setting up the bar model

$\frac{3}{4}$ of a number is 63

63

21 | 21 | 21 | 21

Find the whole

What is $\frac{1}{6}$ of the number?

84

14 | 14 | 14 | 14 | 14 | 14

Use the whole to find a given part

= 14

Find the percentage of an amount (Mental methods)

The **whole** represents 100%

10% = $\frac{1}{10}$ of the whole

0% 20% 40% 60% 80% 100%

10% = $\frac{1}{10}$ of the whole

50% = $\frac{5}{10}$ = $\frac{1}{2}$ of the whole

20% = $\frac{2}{10}$ = $\frac{1}{5}$ of the whole

5% = $\frac{1}{20}$ of the whole

Find 65% of 80

80

8 8 8 8 8 8 8 8 8 8

For bigger percentages it is sometimes easier to take away from 100%

Method 1:
65% = 10% x 6 + 5%
= (8 x 6) + 4
= 52

Method 2:
65% = 50% + 10% + 5%
= 40 + 8 + 4
= 52

Find the percentage of an amount (Calculator methods)

Using a multiplier

Find 65% of 80

Fraction, decimal, percentage conversion

65% = $\frac{65}{100}$ = 0.65 ← The multiplier

0.65 x 80 = 52

Using the percent button

Find 65% of 80

This brings up the % button on screen
You will see 65%

Type 65

Press SHIFT ((%)

Press × 80 and then press =

You can also use the calculator to support non calculator methods and find 1% or 10% then add percentages together

"of" can represent 'x' in calculator methods

Knowledge Organisers : Year 7 HT4
N6 Fractions and percentages of amounts

Mathematics

N6 - FRACTIONS AND PERCENTAGES OF AMOUNTS

Retrieval Practice

1) The area of a triangle is 40 cm^2.
Work out its perpendicular height if the base is 20 cm.

2) Work out 68×47

3) Find the sum of 86, 97 and 74

4) Simplify $3a^2 + 4a + 4a^2 - 2a$

Sparx Maths

Extension work

Codes for related Independent Learning tasks on SPARX maths:

Click on 'Independent Learning' on home page then enter code in search box

Fraction of an amount – M548
Use a fraction to find the whole – M549
Percentage of an amount (non-calculator) – M550
Percentage of an amount (calculator) – M551
Percentage increase and decrease – M552
Use a percentage to find the whole (E) – M553
Solve problems with fractions and percentages greater than 1 (E) – M554

Careers Focus – Where could this take you?

As a **mortgage advisor** I use percentages when calculating how much a mortgage will cost a potential to repay each month in order to pay back the full loan. These calculations are important to ensure the bank earns money and we don't lend people more money than they can afford to repay.

Topic Links

This topic links to:
Equivalent fractions

Some students will progress further and be able to:
Solve problems with fractions greater than 1 and percentages greater than 100%

Self quizzing

100%	
50%	50%

100%			
25%	25%	25%	25%

100%		
$33\frac{1}{3}\%$	$33\frac{1}{3}\%$	$33\frac{1}{3}\%$

Use the bar models to explain how you work out:

- 50% of 30
- 50% of 80
- $33\frac{1}{3}\%$ of 90
- 50% of 24
- 50% of 120
- $66\frac{2}{3}\%$ of 18

Draw a bar model that shows you how to work out 10% of a number.
What other percentages can you then work out?

Challenge Activities

Mo works out 17% of £84.10 on his calculator.

It says 14.297
Does this mean £14, £14.29 or £14.30?

Which answer would you choose?

Knowledge Organisers : Year 7 HT4
G1 Perimeter and Area

Mathematics

What do I need to be able to do?

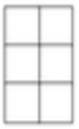
Step 1 Convert metric units of length
Step 2 Perimeter of a polygon
Step 3 Perimeter of a compound shape
Step 4 Area of rectangles and parallelograms
Step 5 Area of a triangle
Step 6 Area of a trapezium
Step 7 Solve problems with perimeter and area
Step 8 Form expressions with perimeter and area (E)

Keywords

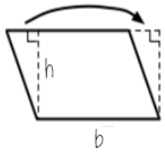
Convert – Changing units from one metric measurement to another.
Length – The measurement of how long something is.
Perimeter – The total distance around a shape.
Polygon – A flat shape with straight sides.
Compound – A shape made by combining two or more simple shapes.
Area – The amount of space inside a 2D shape.
Rectangle – A four-sided shape with opposite sides equal and all angles 90°.
Triangle – A three-sided polygon.
Trapezium – A four-sided shape with one pair of parallel sides.
Expression – A mathematical phrase involving numbers and/or variables.

Area – rectangles, triangles, parallelograms

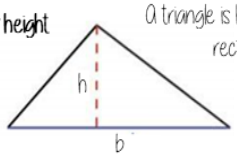
Rectangle
Base x Height



Parallelogram/ Rhombus
Base x Perpendicular height



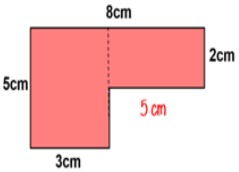
Triangle
½ x Base x Perpendicular height



A triangle is half the size of the rectangle it would fit in

Perimeter and Area

Area The amount of square units that fit inside the shape

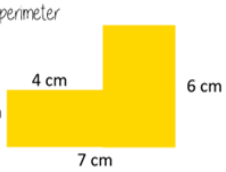


$Area = (5 \times 3) + (2 \times 5)$
$= 25cm^2$

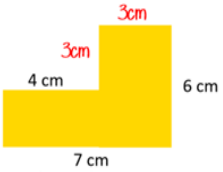
Tip - Always remember units. These units are squared for area. mm^2, cm^2, m^2, etc

Perimeter: The distance around the outside of the shape.

Find the perimeter



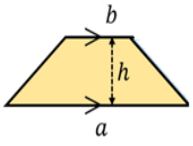
Step 1 – Find the missing lengths



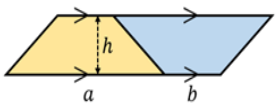
Step 2 – Add the lengths
3 + 4 + 3 + 3 + 6 + 7 = **26 cm**

Area of a trapezium

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



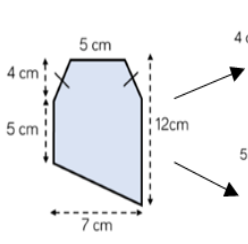
Why?

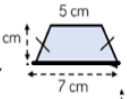


- Two congruent trapeziums make a parallelogram
- New length (a + b) x height
- Divide by 2 to find area of one

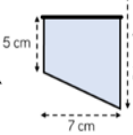
Compound shapes

To find the area compound shapes often need splitting into more manageable shapes first. Identify the shapes and missing sides etc. first.





Shape A - Isosceles trapezium



Shape B - nonstandard trapezium

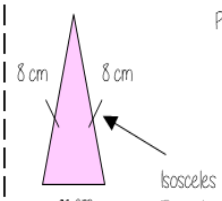
Shape A + Shape B = total area

$\frac{(5+7) \times 4}{2} + \frac{(5+8) \times 7}{2} = 24 + 45.5 = 69.5cm^2$

Units

Solve problems with perimeter

Perimeter is the length around the outside of a polygon



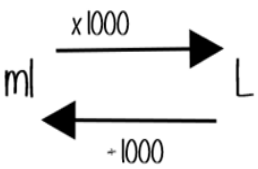
Isosceles Triangle notation

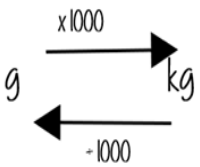
The triangle has a perimeter of 25cm
Find the length of x

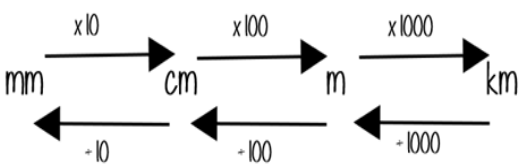
$8cm + 8cm + xcm = 25cm$
$16cm + xcm = 25cm$
$xcm = 9cm$

Metric conversions

Useful Conversions







Knowledge Organisers : Year 7 HT4
G1 Perimeter and Area

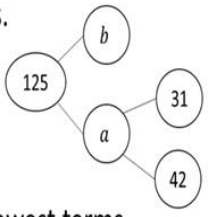
Mathematics

G1 - PERIMETER AND AREA

Retrieval Practice

1) Write three other facts equivalent to $18 \times 8 = 144$

2) Work out the missing numbers.



3) Write 70% as a fraction in its lowest terms.

4) How many sides has a hexagon?

Sparx Maths

Extension work

Codes for related Independent Learning tasks on SPARX maths:

Click on 'Independent Learning' on home page then enter code in search box

Convert metric units of length – U284
Perimeter of a polygon – U285
Perimeter of a compound shape – U286
Area of rectangles and parallelograms – U287
Area of a triangle – U288 Area of a trapezium – U289
Solve problems with perimeter and area – U290
Form expressions with perimeter and area (E) – U291

Career Focus - Where could this take you?

As an auditor, I have to make sure I understand lots of number skills and Identify patterns to make sure accounts make sense and comply with the law

Topic Links

This topic links to:

- Fraction, decimals and percentages

Additional Resources

To further practice and develop your knowledge see:

- https://corbettmaths.com/contents/
  Number: 121-128

Self quizzing

Find the area of each of these shapes.

Match the sets of cards that show equivalent expressions

$48d \div 4$

$\frac{36d^2}{3}$

$4d^2 \times 3d$

$3d \times 4$

$\frac{24de}{2e}$

$12d^3$

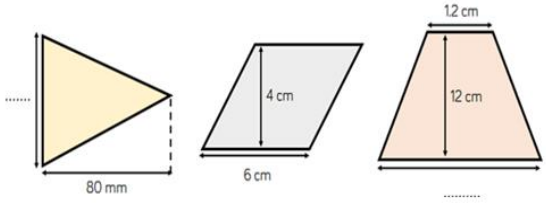
$6d^2 + 6d^2$

$2d \times 6d$

$d \times 3 \times 4d$

Challenge Activities

All these shapes have the same area.
Find the lengths of the missing sides.



MFL: Y7 Term 2

German Knowledge Organiser : Year 7 Topic 2 — My Family

Pets

ich habe	- I have
einen Goldfisch	- a goldfish
einen Hamster	- a hamster
einen Hund	- a dog
ein Kaninchen	- a rabbit
eine Katze	- a cat
eine Maus	- a mouse
ein Meerschweinchen	- a guinea pig
ein Pferd	- a horse
eine Schlange	- a snake
einen Wellensittich	- a budgie
kein Haustier	- no pets

Numbers 10-100

zehn	- ten
zwanzig	- twenty
einundzwanzig	- twenty-one
zweiundzwanzig	- twenty-two
dreiundzwanzig	- twenty-three
vierundzwanzig	- twenty-four
fünfundzwanzig	- twenty-five
sechsundzwanzig	- twenty-six
siebenundzwanzig	- twenty-seven
achtundzwanzig	- twenty-eight
neunundzwanzig	- twenty-nine
dreißig	- thirty
vierzig	- forty
fünfzig	- fifty
sechzig	- sixty
siebzig	- seventy
achtzig	- eighty
neunzig	- ninety
ein hundert	- one hundred

My Family

meine Mutter	- my mum
mein Vater	- my dad
Meine Eltern	- my parents
mein Großvater	- my grandad
meine Großmutter	- my grandma
meine Großeltern	- my grandparents
meine Oma	- my grandma
mein Opa	- my grandad
mein Bruder	- my brother
meine Schwester	- my sister
meine Brüder	- my brothers
meine Schwestern	- my sisters
meine Geschwister	- my siblings
ich bin Einzelkind	- I am an only child
mein Onkel	- my uncle
meine Tante	- my aunt
mein Cousin (male)	- my cousin
meine Cousine (female)	- my cousin

Hair & Eyes

Ich habe	- I have
…Haare	- …hair
schwarze	- black
braune	- brown
blonde	- blond
rote	- red
weiße	- white
kurze	- short
lange	- long
…Augen	- eyes
blaue	- blue
braune	- brown
grüne	- green

Traits

dick	- fat
schlank	- slim
frech	- cheeky
gemein	- mean
süß	- sweet
groß	- big/tall
klein	- small/short
intelligent	- intelligent
lustig	- funny
superlustig	- super funny

Months

Januar	- January
Februar	- February
März	- March
April	- April
Mai	- May
Juni	- June
Juli	- July
August	- August
September	- September
Oktober	- October
November	- November
Dezember	- December

Superpowers

Ich kann	- I can
fliegen	- fly
Fußball spielen	- play football
(schnell) laufen	- run (quickly)
lesen	- read
Rad fahren	- ride a bike
schwimmen	- swim
singen	- sing
springen	- jump
tanzen	- dance
klettern	- climb

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

Birthday

Ich habe am…Geburtstag – My birthday is on the

ersten	- first
zweiten	- second
dritten	- third
vierten	- fourth
fünften	- fifth
zwanzigsten	- twentieth
einundzwanzigsten	- twenty-first
dreißigsten	- thirtieth

GRAMMAR

	-en	haben	sein
ich (I)	-e	habe	bin
du (you)	-st	hast	bist
er (he)	-t	hat	ist
sie (she)	-t	hat	ist
wir (we)	-en	haben	sind
ihr (you all)	-t	habt	seid
sie (they)	-en	haben	sind

wohnen = to live
ich wohne = I live
du wohnst = you live
er wohnt = he lives
sie wohnt = she lives
wir wohnen = we live
ihr wohnt = you all live
sie wohnen = they live

Modal Verb: Kann/können
When you use kann or können, your next verb goes to the end of the sentence as an infinitive:
Ich kann Rad fahren (I can ride a bike)
Mein Hamster kann fliegen (My hamster can fly)
Meine Eltern können Fußball spielen (My parents can play football)

Stretch & Challenge

Ich/1 person kann	- I/1 person can
2+ people können	- 2+ people can

German Knowledge Organiser : Year 7 Topic 3 — Free-time

Sport

Ich spiele gern	- I like playing
Ich spiele sehr gern	- I really like playing
Ich spiele ziemlich gern	- I quite like playing
Ich spiele nicht gern	- I don't like playing
Fußball	- football
Badminton	- badminton
Basketball	- basketball
Handball	- handball
Tennis	- tennis
Volleyball	- volleyball

Free-time Activities

zeichnen	- to draw
singen	- to sing
Eis essen	- to eat ice cream
einkaufen gehen	- to go shopping
in den Park gehen	- to go to the park
ins Kino gehen	- to go to the cinema
in die Stadt gehen	- to go into town
Musik hören	- to listen to music
Sport machen	- to do sport
Xbox spielen	- to play xbox

Time Phrases

oft	- often
nicht so oft	- not so often
einmal pro Woche	- once per week
zweimal pro Monat	- twice per month
jeden Tag	- every day
jeden Morgen	- every morning
manchmal	- sometimes
immer	- always
nie	- never
am Wochenende	- at the weekend
am Abend	- in the evening
heute	- today

Hobbies

Rad fahren	- to ride a bike
Gitarre spielen	- to play guitar
lesen	- to read
schwimmen	- to swim
Skateboard fahren	- to ride a skateboard
Judo machen	- to do judo
fernsehen	- to watch TV
tanzen	- to dance
laufen	- to run
Fußball spielen	- to play football

Opinions

schrecklich	- terrible
langweilig	- boring
okay	- okay
nicht schlecht	- not bad
schlecht	- bad
gut	- good
cool	- cool
toll	- great
super	- super
fantastisch	- fantastic
schlimm	- terrible
lustig	- funny
gefährlich	- dangerous

Online Activities

mit Freunden chatten	- to chat with friends
Fotos machen	- to take photos
Filme sehen	- to watch films
Videos streamen	- to stream videos
Musik herunterladen	- to download music
Computerspiele spielen	- to play computer games
simsen	- to text
die Hausaufgaben machen	- to do homework
auf Instagram/YouTube	- on instagram./youtube
Influencer folgen	- to follow influencers

Stretch & Challenge

Bogen schießen	- to do archery
boxen	- to box
Karate machen	- to do karate
turnen	- to do gymnastics
joggen	- to jog
fechten	- to fence
Ski fahren	- to go skiing
Schlittschuh laufen	– to go ice skating

GRAMMAR

	fahren	sehen	lesen	essen
ich (I)	fahre	sehe	lese	esse
du (you)	fährst	siehst	liest	isst
er (he)	fährt	sieht	liest	isst
sie (she)	fährt	sieht	liest	isst
wir (we)	fahren	sehen	lesen	essen
ihr (you all)	fahrt	seht	lest	esst
sie (they)	fahren	sehen	lesen	essen

Subordinating Conjunctions
weil = 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)

Verb Second Rule
If your time phrase goes at the start of the sentence, you need to put your verb next.
Ich spiele Fußball → Jeden Tag spiele ich Fußball

Adverb: gern
gern = like
But it is an adverb, not a verb.
An adverb goes after a verb.
Ich gehe gern in den Park

Time Phrase Placement
You can put your time phrase at the start of the sentence, or directly after the verb.
Ich spiele jeden Tag Fußball.

Spanish Knowledge Organiser : Year 7 Topic 3 — School

Subjects

el español	- Spanish
el teatro	- Drama
la geografía	- Geography
la música	- music
la tecnología	- DT
el inglés	- English
la historia	- History
la informática	- ICT
el arte	- Art
las matemáticas	- Maths
las ciencias	- science
la religión	- R.E.

Describing Teachers

Mi professor/a de [español]	– my [Spanish] teacher
es	- is
estricto/a	- strict
simpático/a	- nice/friendly
tranquilo/a	- calm
paciente	- patient
gracioso/a	- funny
animado/a	- lively
Pesado/a	- annoying
loco/a	- crazy
justo/a	- fair

Breaktime

En el recreo	- at breaktime
hablar con amigos	- to speak with friends
comer	- to eat
estudiar	- to study
jugar al fútbol	- to play football
hacer los deberes	- to do homework
comprar comida	- to buy food
hacer deporte	- to do sport
en el comedor	- in the canteen
en el patio	- in the playground

Numbers 30-60

treinta	- thirty
treinta y uno	- thirty-one
treinta y dos	- thirty-two
treinta y tres	- thirty-three
treinta y cuatro	- thirty-four
treinta y cinco	- thirty-five
treinta y seis	- thirty-six
treinta y siete	- thirty-seven
treinta y ocho	- thirty-eight
treinta y nueve	- thirty-nine
cuarenta	- fourty
[illegible]cuenta	- fifty
[illegible]senta	- sixty

Opinions

Me gusta	- I like
Me encanta	- I love
No me gusta	- I do not like
No me gusta nada	- I do not like at all
Me gusta mucho	- I really like
Odio/detesto	- I hate
Mi asignatura favorita es	- my favourite subject is
Porque es	- because it is
Divertido	- fun
Interesante	- interesting
Aburrido	- boring
Guay	- cool
Genial	- great
Facil	- easy
Dificil	- difficult
Una basura	- rubbish
Tenemos muchos deberes	- we get lots of homework
El/la profe es simpático/a	- the teacher is nice/friendly
El/la profe es estricto/a	- the teacher is strict

Days of the Week

el/los…	- on
lunes	- Monday
martes	- Tuesday
miércoles	- Wednesday
jueves	- Thursday
viernes	- Friday
sábado(s)	- Saturday
domingo(s)	- Sunday

El fin de semana – on the weekends

Telling the time

Es/son(la una)..	- it is … o'clock
…y cinco	- five past
…y diez	- ten past
… y cuarto	- quarter past
…y veinte	- twenty past
…y veinticinco	- twenty-five past
… y media	- half past
…menos veinticinco	-twenty-five to
…menos veinte	- twenty to
…menos cuarto	- quarter to
…menos diez	- ten to
…menos cinco	- five to
A la/las (dos)	- at … o'clock
Al mediodía	- at midday

Stretch & Challenge

Quedar con amigos -to hang out with friends

Bromear	- to have a laugh
chatear	- to chat
Beber un zumo	- to drink juice

(yo bebo, él bebe, ella bebe)

GRAMMAR

	-ar	ser	hacer
yo (I)	-o	soy	hago
tú (you)	-as	eres	haces
Él/ella	-a	es	hace

jugar = to play ← [infinitive]

[conjugation]
yo juego – I play
tú juegas – you play
él juega – he plays
ella juega – she plays

Questions

¿Cuál es tu asignatura favorita?	- What is your favourite subject?
¿Qué tienes/estudias [el lunes]?	- What do you have [on Monday]?
¿Qué hora es?	- What time is it?
¿Cómo es tu professor [de español]?	- How is your [Spanish] teacher?
¿Qué haces durante el recreo?	- What do you do at breaktime?

Spanish Knowledge Organiser : Year 7 Topic 4 Free-Time & Hobbies

Sports (jugar)

Juego	- I play
al bádminton	- badminton
al baloncesto	- basketball
al fútbol	- football
al hockey	- hockey
al rugby	- rugby
al tenis	- tennis
al tenis de mesa	- table tennis
al ping-pong	- ping-pong
al voleibol	- volleyball
con mis amigos	- with my friends

Opinion Phrases

Me encanta	- I love
Me gusta	- I like
Me gusta mucho	- I really like
Me gusta un montón	- I really like
Me gusta bastante	- I quite like
No me gusta	- I don't like
No me gusta nada	- I don't like at all
Odio / detesto	- I hate

Time Phrases

a veces	- sometimes
a menudo	- often
todos los días	- every day
todas las tardes	- every evening
todo el tiempo	- all the time
una vez a la semana	- once per week
dos veces a la semana	- twice per week
el fin de semana	- on the weekend
raramente	- rarely

Sports (hacer)

Hago	- I do
judo	- judo
parkour	- parkour
ciclismo	- cycling
danza	- dance
gimnasia	- gymnastics
natación	- swimming
artes marciales	- martial arts

Online Activities

en mi ordenador	- on my computer
en mi móvil	- on my phone
jugar en línea	- to play online
chtear	- to chat
ver vídeoclips	- to watch video clips
descargar música	- to download music
enviar SMS	- to send texts
hablar con amigos	- to talk with friends
enviar correos	- to send emails
envío	- I send

Stretch & Challenge

hacer equitación	- to go horseriding
hacer esquí	- to go skiing
hacer snowboard	– to go snowboarding
hacer atletismo	– to do athletics
hacer kárate	- to do karate
hacer boxeo	- to go boxing
hacer escalada	- to go climbing
hacer charrería	- to do horseriding (Mexico)

Free-time Activities

quedar con amigos	- meeting with friends
ver la televisión	- watching TV
jugar a la PlayStation	- playing playstation
escuchar música	- listening to music
hacer la compra	- going shopping
hacer deporte	- doing sport
Jugar al fútbol	- playing football
llamar a mis amigos	- phoning my friends
bailar	- dancing
tocar un instrumento	- playing an instrument

Weather

cuándo…	- when…
hace calor	- it is hot
hace frío	- it is cold
hace sol	- it is sunny
hace viento	- it is windy
está nublado	- it is foggy
llueve	- it is raining
nieva	- it is snowing
en invierno	- in winter
en verano	- in summer
en primavera	- in spring
en otoño	- in autumn

GRAMMAR

	-ar	tener (to have)	ser (to be)	hacer (to do)
yo (I)	-o	tengo	soy	hago
tú (you)	-as	tienes	eres	haces
él (he)/ella (she)	-a	tiene	es	hace
nosotros (we)	-amos	tenemos	somos	hacemos
vosotros (you all)	-aís	tenéis	sois	hacéis
ellos/ellas	-an	tienen	son	hacen

Stretch & Challenge

veo – I watch
ves – you watch
ve– he/she watches
vemos– we watch
veis– you all watch
ven– they watch

Opinions

Follow opinion phrases with:

1. **el/la/los/las**

Me encanta el baloncesto(I love basketball)

2. **an infinitive**

Me encanta jugar al baloncesto (I love playing basketball)

Negatives

no= don't
no juego al fútbol
nunca= never
nunca hago natación

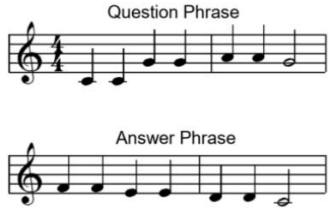
Music: Y7 Term 2

Form and Structure

Exploring Musical Structures

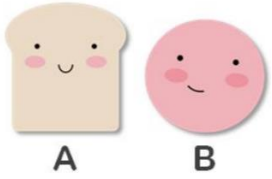
A. Question and Answer Phrases

Two short sections in a piece of music. The first **QUESTION PHRASE** is followed by the **ANSWER PHRASE** which in some way copies or answers the first – like a 'musical conversation'. The **MELODY** below shows the opening of "Twinkle Twinkle Little Star" - notice how the **QUESTION PHRASE** rises in **PITCH** and the **ANSWER PHRASE** descends in **PITCH**.



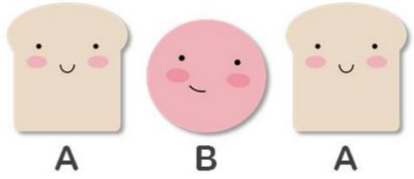
B. Binary Form

BINARY FORM (AB) describes music in two sections. The first section can be labelled "A" and the second section "B" (either or both sections may be repeated). The "B" section **contrasts** musically in some way to the first "A" section.



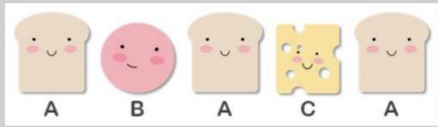
C. Ternary Form

TERNARY FORM (ABA) describes music in three sections. The first section can be labelled "A" and the second section "B" The "B" section **contrasts** in some way to the first "A" section which is then **repeated** after the "B" section again.



D. Rondo Form

RONDO FORM (ABACADA…) describes music where a main **theme** or **melody** "A" keeps returning between different contrasting sections "B, C, D…" (called **episodes**)

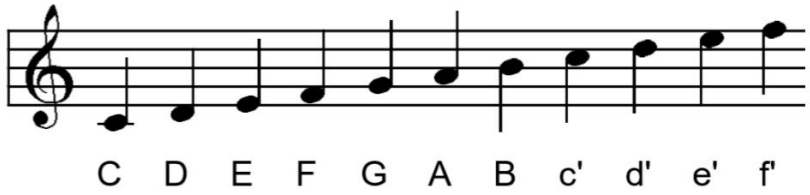


E. Key Words

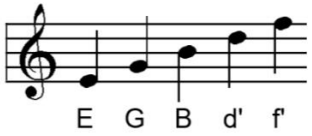
1. **FORM/STRUCTURE** – How a piece of music is organised into different sections or parts.
2. **PHRASE** – A short section of music, like a "musical sentence".
3. **MELODY** – The main **tune** of a piece of music. The melody often varies in **pitch** and "good melodies" have an organised and recognisable shape.
4. **PITCH** – The **highness** or **lowness** of a sound or musical note.
5. **TEMPO-** the speed of music (***largo***-slow, ***andante***- walking pace, ***allegro***-fast)
6. **DYNAMICS-** the volume of music (***piano***- quiet, ***forte***- loud, ***crescendo***-gradually getting louder
7. **TEXTURE**- the layers of music

F. Music Theory

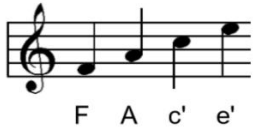
Treble Clef Pitch Notation



Treble Clef "Lines" Note Names
Remember:
Every Green Bus Drives Fast



Treble Clef "Spaces" Note Names
Remember:
FACE



Gamelan

Indonesian Gamelan

A. History and Origins of Gamelan Music

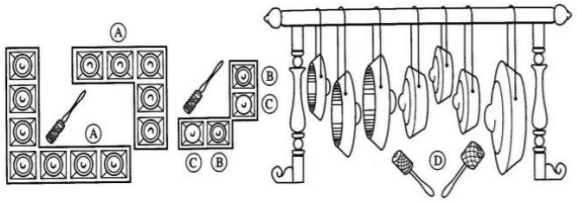
Gamelan Music is from **INDONESIA**, especially the two islands of Java and Bali. Gamelan is played at celebrations, religious events and entertainments such as shadow puppet plays and dance performances. Gamelan performances are very important in village life for bringing people together and expressing their feelings. The Gamelan is thought to be magical and spiritual – players treat their instruments with total respect and would never step over them as they believe they are tied to heaven and stepping over the instruments could break these ties. Gamelan music is handed down from generation to generation with children learning, watching and copying from their father's and elders. This is called the **ORAL TRADITION** where music isn't written down.

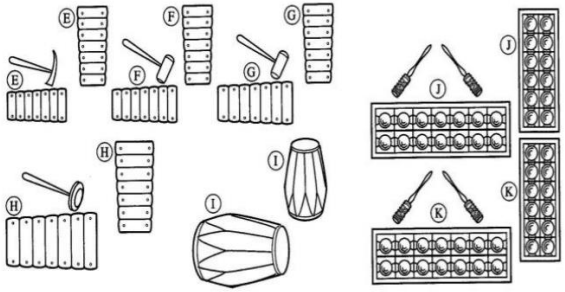
B. Musical Features of Gamelan Music

Gamelan music is made up of **SET PATTERNS** that each player has to learn. Sometimes a player or singer will have the chance to **ORNAMENT** or **DECORATE** a melody, but they are expected to follow quite strict rules. Gamelan music uses two types of SCALE. The **PELOG SCALE** made up of seven notes and the **SLENDRO SCALE** made up of five notes (**PENTATONIC SCALE**). The main **MELODY** is based on one of these two types of scale and is called the **BALUNGAN**. This melody is **REPEATED** over and over again to make a **CYCLIC MELODY** and is often performed by the **SARONS**. Other instruments such as the **BONANGS DECONRATE** this **BALUNGAN**. **GONGS** mark out the beginning of each **RHYTHMIC CYCLE** with the biggest gong playing the last beat of the cycle and smaller gongs marking out smaller sections, such as the halfway point. Drummers cue the performers like an orchestral conductor, keeping the players in time.

C. Instruments of the Gamelan

The word Gamelan means 'to hit with a hammer'. The Gamelan is made up mainly of **PERCUSSION INSTRUMENTS**. There are typically between 4 and 40 instruments. Generally, higher pitch instruments play more intricate parts and lower pitch instruments play simpler parts with fewer notes.





A, B, C, J & K = **Bonangs** (Rows of small gongs resting on ropes in a bed-like frame used for "elaborating" the core melody (**PEKING**)

D = **Kempul & Gongs** (These large metal discs hang on a wooden frame and provide the structure of Gamelan music dividing it into cycles)

E, F, G & H = **Sarons** (Types of metallophones which play the core melody. They have bronze keys fixed over a resonating box)

I = **Kendangs** (Sitting at the centre of the Gamelan, the drummer guides the rhythm and pace of the music, rather like a conductor.

D. Key words (musical elements)

1. FORM/STRUCTURE – How a piece of music is organised into different sections or parts.

2. PHRASE – A short section of music, like a "musical sentence".

3. MELODY – The main **tune** of a piece of music. The melody often varies in **pitch** and "good melodies" have an organised and recognisable shape.

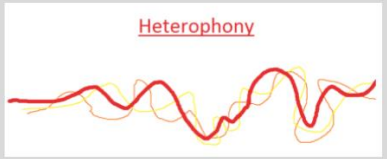
4. PITCH – The **highness** or **lowness** of a sound or musical note.

5. TEMPO- the speed of music (***largo***-slow, ***andante***- walking pace, ***allegro***- fast)

6. DYNAMICS- the volume of music (***piano***- quiet, ***forte***- loud, ***crescendo***- gradually getting louder

E. Texture (layers) of Gamelan Music

Gamelan music has a unique type of musical texture. Each piece is based on a **MELODIC SKELETON** (often the part for Bonangs) around which all the different parts are built. This is called a **HETEROPHONIC TEXTURE** – a type of imitative counterpoint featuring the simultaneous variation of the same melody. These variations might be subtle, such as the addition of ornaments, or more dramatic, such as playing the melody at a different speed or in a different key.



PE: Y7 Term 2

PE Knowledge Organiser: Y7 – 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

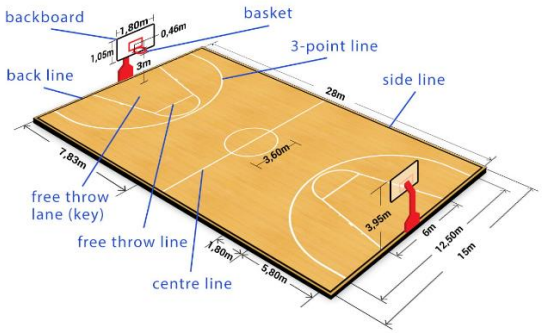
24 Second Rule: Whenever a team gains control of the ball they must attempt for a basket within 24 seconds

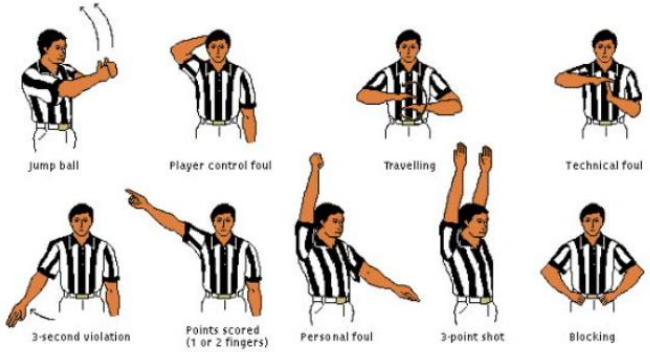
Basic Rules

- 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





PE Knowledge Organiser: Y7 – Basketball Techniques

1. Ball familiarisation: Grip and handling skills

Key Teaching Points (KTP's)
- Hand(s) on the ball
- Fingers spread wide pads of fingertips contacting surface
- Align fingers with seams of basketball for better control and stability
- Apply gentle pressure with fingertips to grip ball firmly without squeezing too tight

When would I need to be able to use this skill?
A good grip for playing basketball allows you to control the ball easily so that it has minimal movement when being held. It is important because it gives you better accuracy when shooting, passing and dribbling. If your holding is weak, the ball will move around in your hands, making it difficult to make accurate shots or passes.

2. Shooting: Set/form shot technique – BEEF

Key Teaching Points (KTP's)
- Balanced stance
- Elbow of shooting hand inline and under wrist / Non shooting hand at side of ball
- Eyes on target
- Follow through with continuous action from moment shot starts

When would I need to be able to use this skill?
Shooting is the most important skill in basketball. The skills of passing, dribbling, defense, and rebounding may enable you to get a high percentage shot, but you must still be able to make the shot. Tip: Remember 'BEEF' when shooting!

3. Bank shot and Offensive Rebounding

Key Teaching Points (KTP's)
- Face the basket at a angle and line up your dominant eye with rim of basket
- Release the ball with gentle flick of wrist
- Follow through with arm fully extended and aim for small top right/left corner of box on backboard for accuracy while maintain a steady posture

When would I need to be able to use this skill?
The Bank shot consists of action that occurs when an offensive player (attacker) shoots the basketball so that it makes contact with the backboard, particularly at a certain angle, before falling into the rim. Tip: Using the backboard to your advantage proves very useful if you are to be successful in scoring as many points for your team as possible!

4. Passing and Receiving to outwit opponent: Chest and Bounce pass

Chest Pass: Key Teaching Points (KTP's)
- Ball held thumbs behind, fingers alongside, wrists cocked back
- Pass with sharp extension of arms, wrists and fingers
- Arms follow through in direction of pass

Bounce Pass: Key Teaching Points (KTP's)
Starts from lower position than Chest pass
Ball skidded via floor to team-mate roughly 2/3rds of distance
Slower pass than the Chest pass

When would I need to be able to use this skill?
Good passing and catching are the essence of team play, the skills that make basketball such a beautiful team sport. Tip: Passing is the most neglected fundamental skill of the game…Tip: Practice, Practice, Practice!

5. Dribbling and Pivoting

Key Teaching Points (KTP's)
- Control by spreading fingers over top of ball
- Ball pushed firmly down using hand, wrist and arm to control height and speed of bounce. Keep ball below waist level and Keep Head up!
- Dribble with hand furthest away from defenders

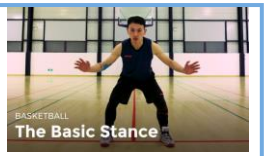
When would I need to be able to use this skill?
Dribbling allows you to move the ball by yourself. By dribbling you can advance the ball up the court and evade pressure by defenders. Tip: Every team needs at least one skilled dribbler who can advance the ball up the court on a fast break and protect it against defensive pressure. It could be you!

6. Introduction to Lay-up shooting

Key Teaching Points (KTP's)
- Basic action = Run / Jump up and towards the target and reach up
- Player takes ball in 2 hands with feet on floor
- Jump up towards the basket from left foot
- As jump made ball taken up to position above head and moved into right hand
- Release ball when shooting arm and hand at full stretch

When would I need to be able to use this skill?
A Lay-up shot is used near the basket while a player is on the move. To jump high on lay-ups you must have speed but also control on the last 3 or 4 steps of your dribble. Tip: Lay-ups contribute the most points to any game of school basketball so the more effective your technique the more successful you will be. Give a Lay-up a go!

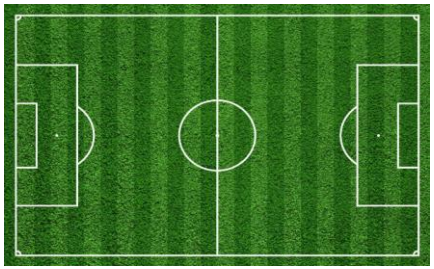
7. Defence: Basic stance and Rebounding



Key Teaching Points (KTP's)
- Defensive position between opponent and basket
- Knees bent, feet flat on floor and shoulder width apart, weight evenly balanced
- Face opponent, with head up and back straight
- When dribbler moves, adjust position by sliding action to respond to opponent

When would I need to be able to use this skill?
For defense, you must be able to quickly move in any direction and change direction while maintaining balance if you are going to defend your basket well and not allow opposition players time on the ball.

PE Knowledge Organiser: Y7 – Football Overview



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.
- Each team will have a designated captain.

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
- Chip
- Space
- Volley/half volley
- Distribution
- Foul
- Direct/ Indirect
- Goal-kick
- Offside
- Opposition
- Awareness
- Penalty

PE Knowledge Organiser: Y7 – Football Techniques

1. Ball control: Touch and familiarity

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

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

Ball control is essential for accurate passing, maintaining possession and creating scoring opportunities. Players need good ball control to receive passes accurately, navigate through tight spaces, evade defenders, and progress the ball. Tip: Practice control with both feet to master this skill!

2. Passing: Short pass/instep and follow through

Key Teaching Points (KTP's)

- Approach
- Body shape
- Contact. Part of ball and foot
- Weight, accuracy and follow through

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

Passing is the ability to pass the ball to another teammate. It is important that you are able to pass accurately over short and long distances. Tip: Kicking the ball harder or softer to make it easy to receive makes a good passer!

3. Dribbling: footwork and awareness

Key Teaching Points (KTP's)

- Slow in
- Bend knees
- Technique = Feint/disguise
- Change direction/pace

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

Dribbling is the ability to keep and have control of the ball. This will help you keep the ball when opponents are near, and also help you move fast when running up the pitch or away from defenders.

4. Turning with the ball: Slow in and accelerate out

Key Teaching Points (KTP's)

- Slow in
- Bend knees
- Feint/disguise
- Technique (Type of turn)
- Ball out of feet
- Accelerate away

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

Turning is all about changing direction. It helps players keep possession and allows them to create, exploit and even deny space. Tip: Watch professionals when you can!

5. Shooting: Stance, contact and follow through

Key Teaching Points (KTP's)

- Non kicking foot along-side the ball
- Part of foot / Part of ball
- Head steady
- Follow through = end-product

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

Shooting is the ability to shoot at the goal in a way which makes it hard to save or stop. When you have a chance to score it is important that you shoot the ball in an area which makes it hard to save. Tip: aim to one side of the goalkeeper!

6. Tackling: Block technique

Key Teaching Points (KTP's)

- Plant non-tackling foot firmly on the ground (firm anchor)
- Inside of the foot is used for tackling (not toe)
- Full weight of the body behind the ball
- Head down over the ball

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

The block tackle is an essential skill for winning the ball back in football. It is mainly used when confronting an opponent head on and it is important to complete it with good timing and technique to prevent injury or fouls. Tip: Watch the ball at all times. Do not be distracted by opponents' trickery!

7. Goalkeeping: Starting position and denying space

Key Teaching Points (KTP's)

- Starting position/body position
- Movement of feet, into line, down line
- Decision – stand up */or* advance to attacker's feet
- Recover and then distribute ball

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

Saving is the ability to stop a shot from going into the goal. When an opponent has the ball and wants to shoot, you may have to save the shot if it is on target. Tip: Put pressure on the opponent by coming off the goal line and making yourself as big as possible.

PE Knowledge Organiser: Y7 – Gymnastics Overview

Key Terms/Vocabulary

- Straddle
- Pike
- Tuck
- Point of contact
- Balance
- Entry
- Exit
- Handstand
- Headstand
- Inversion
- Centre of gravity
- Innovative
- Transition
- Locomotion
- Dynamics
- Refinement
- Cartwheel
- Jump
- Take off
- Landing
- Action
- Creative
- Levels
- Rehearsal
- Aesthetics
- Symmetric
- Asymmetric
- Extend/ Extension
- Flexed/ Flexion

Tips for building your sequence

- Consider your sequence to be a sentence.
- You need a clear start and end position.
- Include all the actions you have learnt (Rolls, Jumps, inversions, balances)
- Use locomotion to travel to and from different equipment.
- Plan transitions for entry and exit into different actions
- Don't forget your shape, can you refine it?
- Which dynamics do you use?
- When you have planned it REHEARSE REHEARSE REHEARSE

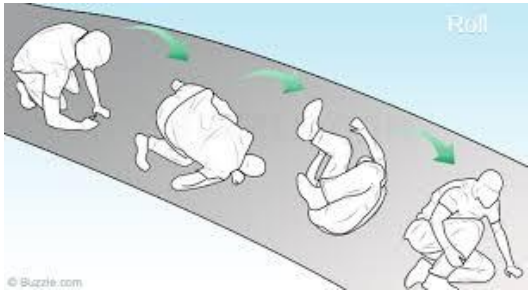
Performance and Assessment

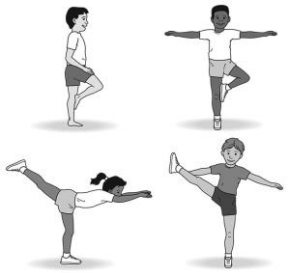
As an audience you must be respectful of others, performing can be nerve racking, so let's celebrate everyone's success.

- 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. Make sure you are working in a space.





PE Knowledge Organiser: Y7 – Gymnastic Techniques

Shape: Pike, Tuck, Straddle, Star, straight

Key Teaching Points (KTP's)

•Straight: Reach up tall with a straight back and arms above the head.

•Star: Legs, arms and back straight with knees and feet pointing to the side.

•Tuck: Round the back. Keep knees together and tight to the chest.

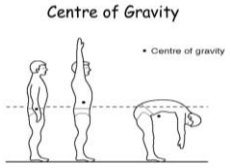
•Pike: Keep back straight at 90° to straight legs. Stretch arms up.

•Straddle: Keep back straight at 90° to wide straight legs. Stretch arms out.

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

When holding a balance or inversion, or rolling shape can make the skill more aesthetically pleasing. Shape can make a routine look more refined. These skills are also good for improving your posture in all sports and daily routines in life.

Balance: Points of contact and centre of gravity



Key Teaching Points (KTP's)

- Hold your centre of gravity over the point of contact
- Find a stable position and hold for 3-8 seconds.
- Weight towards the ball of the foot using your toes to push on to balance

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

To hold a position with poise and control. Balance should be combined with shape to make it interesting to look at. The base of a balance is key to the position being held. Balance is useful in all sports to stay on your feet. Balance is a good life skill as it uses your core strength to hold posture and remain in an upward position.

Rolls: Rocking, rolling, entry and exit

Key Teaching Points (KTP's)

- Entry: Hands on floor shoulder width apart
- Chin on chest
- Transfer weight from feet to hands
- Straighten legs whilst bend arms

Exit: Knees and feet together

- Tuck position, feet near bottom

KTPs for each roll vary. Please see Resources

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

Entry and exit of the rolls are crucial and can be forgotten. Rolls to consider are teddy bear, forwards, backwards, pencil. A side roll can be used for safe landings and falls.

Inversion: Headstands, Handstands and Cartwheels

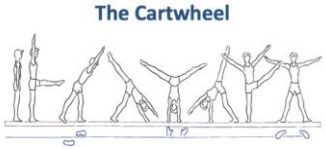
Key Teaching Points (KTP's)

Headstand:

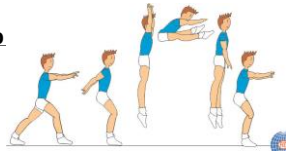
- Triangle base with Hands and head.
- Lift the Centre of gravity/mass (knees to elbows)
- Slowly come out of tuck to extend legs upwards

Handstand:

- Step in with lunge
- Hands on the floor with fingers spread pointing forwards
- Swing trail leg upwards into inverted position
- Back straight, eyes on fingers
- Return to start position



Jumps: 5 types of jump



Key Teaching Points (KTP's)

- **5 types of jump** (2-2, 2-1, 1-2,1-same, 1 – other)
- Plan take off foot/feet
- Bend knees on take off and landing

Tuck – hands to shins of legs, knees flexed and into chest.

Star – legs remains under the torso but out from central body line, arms out to a V shape

Pike – knees extended, legs raised in front, rich for feet, arms straight

Straddle – legs out in front of you but open, arms reach out in front for feet.

Transition: How can we move from one action or place to the next/ Travel.

Key Teaching Points (KTP's)

- Transition must be smooth and flow from one action to the next
- Actions should link together
- Routine should not stop or break down

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

A smooth transition and good locomotion ensure a sequence is fluent and smooth. It is important we plan the other parts of our sequence not just the action. How can I get to that next place or position? Consider how a change of dynamics can make the movement look more interesting. Think of your sequence like a sentence!

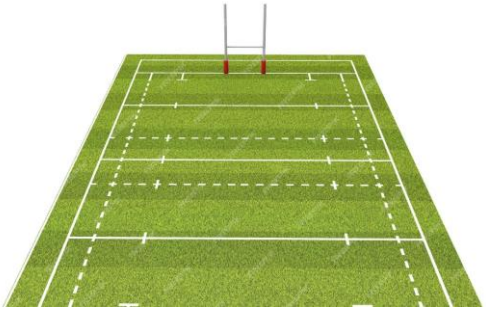
PE Knowledge Organiser: Y7 - Rugby Overview

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
- Knock-on
- Line break
- Offload
- Play-the-ball
- Tackle count
- Touchline
- Tryline
- Dummy runner

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.

PE Knowledge Organiser: Y7 - Rugby Techniques

1. Ball familiarisation: Grip and handling skills

Key Teaching Points (KTP's)
- Spread fingers wide
  Fingers on seams thumbs at the side.
  Ideally the ball in finger tips not palm

When would I need to be able to use this skill?
Rugby league players need a good grip on the ball to keep control when running, passing, and scoring, especially in wet or muddy conditions. A secure grip helps prevent fumbles and allows players to make accurate passes and catch the ball under pressure from opponents

2. Catching in rugby

Key Teaching Points (KTP's)
- Hands High to receive the ball
  W for high catches, basket for low catches
  Eyes on the ball, body in line of flight of the ball.

When would I need to be able to use this skill?
Rugby players need to be able to catch the ball to keep possession and continue their team's attack. Good catching skills allow players to receive passes, catch high kicks, and avoid turnovers, helping their team move up the field and create scoring opportunities.

3. Passing in rugby

Key Teaching Points (KTP's)
- Correct grip
- Hands lead the pass and point to target
- Ball travel in front of the body from the hip

When would I need to be able to use this skill?
Rugby players need to be able to pass the ball to move it across the field and create opportunities to break through the opposition's defence. Accurate passing keeps the game flowing, helps maintain possession, and allows teammates to advance toward the try line possible!

4. Playing the ball

Key Teaching Points (KTP's)
- Touch the ball with your foot and roll is backwards
- Ball rolls smoothly.
- Snap knees to chest (from the tackle) Sweep, touch

When would I need to be able to use this skill?
In rugby league, "playing the ball" is when a player gets up and rolls the ball back with their foot after being tackled. This allows the game to continue smoothly and gives their team a chance to restart their attack, keeping possession and moving forward

5. Carry and fending off defenders

Key Teaching Points (KTP's)
- Two hands on the ball before contact
- Tuck the ball in when bracing for contact
- Protect the ball with non ball carrying arm

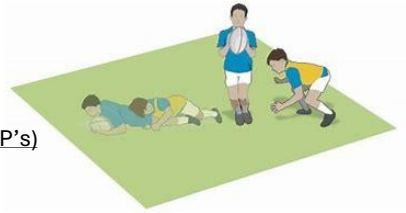
When would I need to be able to use this skill?
Rugby players carry the ball and fend off defenders to maintain possession and gain ground toward the try line. Fending off defenders with their hand helps them break through tackles, creating more opportunities to advance and score for their team.

6. Introduction to Upright Tackle

Key Teaching Points (KTP's)
- Split the attacker by putting their front foot between the attacker leg
- Arm to wrap around the ball side
- Other arm wrap around

When would I need to be able to use this skill?
In rugby league, an upright tackle is when a defender holds the ball carrier in a standing position to stop their movement and prevent them from passing. This type of tackle helps control the ball carrier, limits play options, and often slows down the attacking team's momentum.

7. Side Tackle



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.

Religious Studies: Y7 Term 2

Religious Studies Knowledge Organiser: Y7 HT2 Judaism

Keywords and Definitions

Key Word	Definition
Synagogue	A Jewish place of worship.
Torah	The most important part of the Jewish Bible containing laws and teachings.
Abraham	Founder of Judaism who made a covenant with God.
Covenant	A sacred promise or agreement between God and the Jewish people.
Moses	A prophet who led the Israelites out of slavery in Egypt.
Prophet	Someone chosen by God to speak on His behalf.
Messiah	A future king who will bring peace.
Messianic Age	A future time of global peace when the Messiah arrives.
Tanakh	The Jewish Bible (Torah, Nevi'im, Ketuvim).
Talmud	A collection of discussions interpreting the Tanakh.
Mitzvot	The 613 commandments Jews follow.
Kashrut	Jewish food laws.
Kosher	Food that meets Jewish dietary laws.
Shabbat / Sabbath	The Jewish day of rest from Friday sunset to Saturday sunset.
Bar Mitzvah	Coming-of-age ceremony for a Jewish boy (age 13).
Bat Mitzvah	Coming-of-age ceremony for a Jewish girl (age 12–13).
Rosh Hashanah	The Jewish New Year festival.
Yom Kippur	The holiest day in Judaism, focused on fasting and forgiveness.

Knowledge

- Abraham is the founder OF Judaism
- The covenant was a promise between him and God
- God tested Abraham in different ways. One way he was tested was to sacrifice his son

- Mitzvot are the 613 laws that Jews live by.
- Jewish food laws are kashrut.
- The three main food laws are that Jews:
- Can't eat certain meats
- Can't mix meat and dairy
- Must follow strict rules about food preparation

- A synagogue is a Jewish place of worship housing the Torah scroll
- Orthodox Jews are traditional Jews who follow all the rules of Judaism
- A Rabbi is a religious leader in the synagogue

- The Tanakh is the Jewish Bible. The Tanakh is divided into three sections:
- Torah (laws)
- Nevi'im (stories from the Prophets)
- Ketuvim (poems and writings)

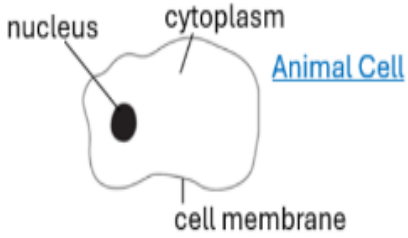
- Moses is a descendant of Abraham.
- The Jews (Israelites) were being forced to work for the Egyptians as slaves.
- Moses saved the Israelites and took them to the promised land
- He was given the 10 commandments by God
- The fourth commandment is to honour the Sabbath.
- Shabbat/Sabbath starts on a Friday at sunset and ends on Saturday at sunset.

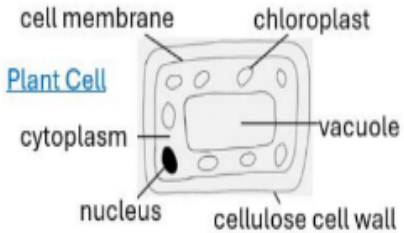
Science: Y7 Term 2

SCIENCE Y7 ORGANISMS KNOWLEDGE ORGANISER

1. Cell Structure

- The cell is the basic structural/functional unit – all organisms are made from cells.

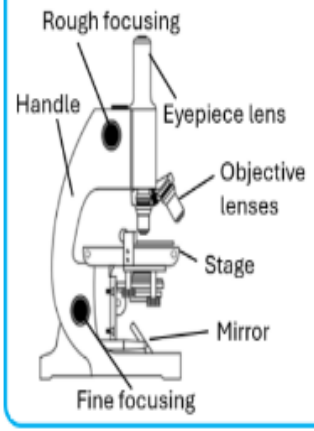




2, Diffusion

- Substances move from where there are a lot of them, to where there is not that much. This is called diffusion.

3. Microscopy



After placing the slide on the stage.

We look down the eye piece lens and adjust the rough focussing.

We always start from the lowest objective lens first and then adjust the fine focussing to sharpen the image.

4. Cell Adaptations

- Some cells are specialised, this mean they are adapted to do a specific job.

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

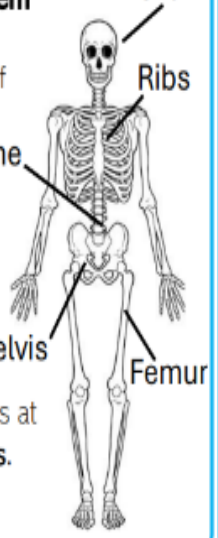
Red Blood Cell
No nucleus – more room to carry oxygen

White Blood Cell
Produces antibodies

5. Skeletal System

The four functions of the skeleton are:

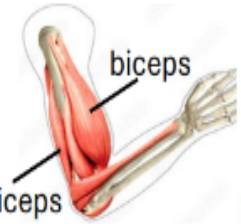
- Support
- Flexibility
- Movement
- Blood cell production



The skeleton bends at points called **joints.**

6. Muscle System

Cell → Tissue → Organ→ Organ System

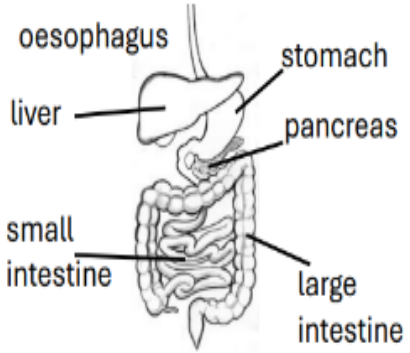


When the biceps contract, they shorten. The triceps are pulled longer as they relax. This moves the arm up.

Muscles work in pairs

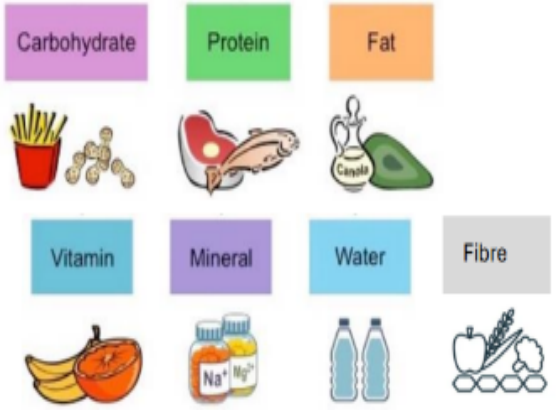
7. Digestive system

Digestion is the break down of **large, insoluble** molecules into **small, soluble** molecules. Enzymes catalyse this reaction.



8. Diet and Nutrition

- A **balanced diet** is all of the correct nutrients in the correct amounts.



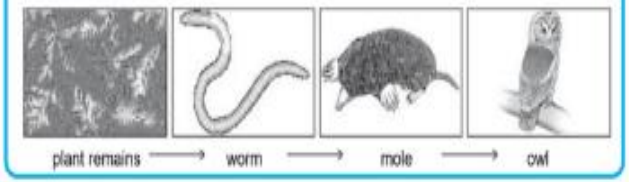
SCIENCE Y7 ECOSYSTEMS KNOWLEDGE ORGANISER

1. Habitats

- A habitat is a place where something lives.
- Animals compete for food, nutrients, space and mates.
- Plants also compete for light and carbon dioxide.

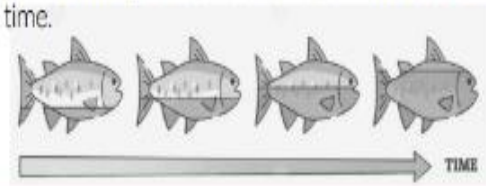
2. Food Chains

- Producer – makes its own food by photosynthesis
- Primary Consumer – eats the producer
- Secondary Consumer – eats the primary consumer
- Arrows – point in the direction of energy flow



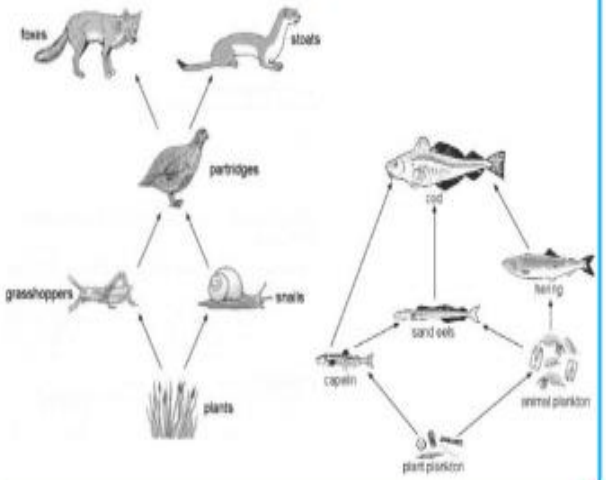
3. Bioaccumulation

- This is the build up of toxic chemicals in the food chain over time.



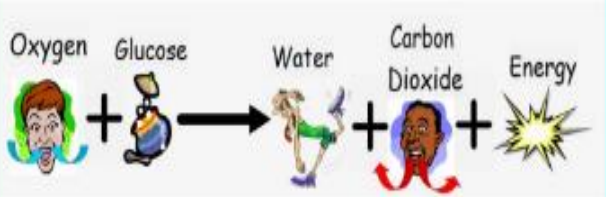
3. Food Webs

- Food chains interconnect to form webs



4. Aerobic Respiration

- Aerobic respiration happens in all cells.



- Energy released is used for:
  - Temperature control
  - Movement
  - Building large molecules

5. Anaerobic Respiration

- This is respiration without oxygen.

- Lactic acid causes pain which we call a stitch and leads to muscles becoming stiff and tired

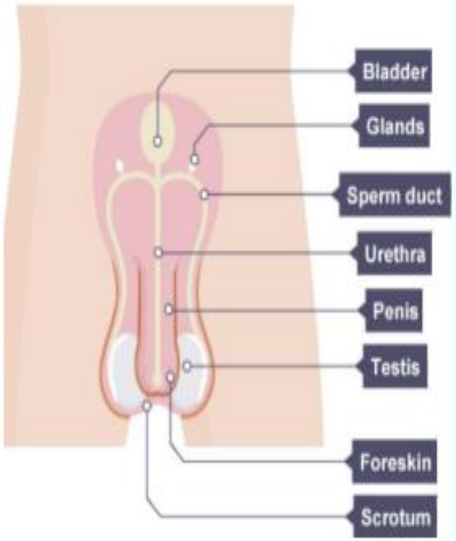
6. Fermentation

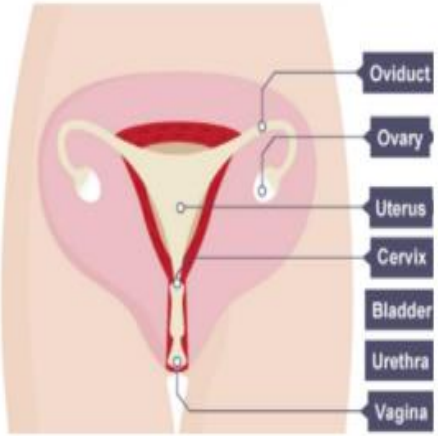
- Yeast respire without using oxygen, this is a form of anaerobic respiration.

- Fermentation is used to make bread and beer/wine

SCIENCE Y7 GENES KNOWLEDGE ORGANISER

1. Reproductive Systems



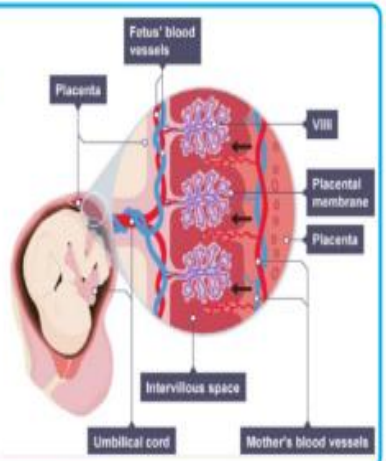


2. Fetal Development

The fetus relies upon its mother for:

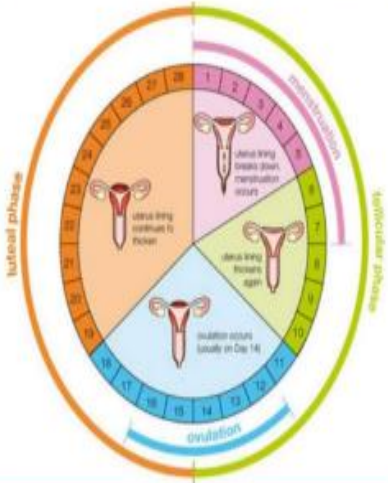
- protection against bumps and temperature changes
- oxygen
- for nutrients - food and water
- removal of waste substances.

The fetus is protected by the uterus and a liquid called amniotic fluid.

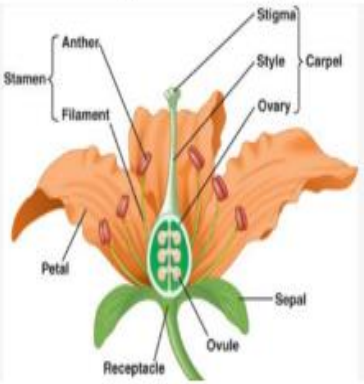


3. Menstruation

- The female cycle is 28 days long. From day 1-7 the uterus lining breaks down, this is called a period. The lining builds back up and around day 14 – ovulation happens. This is the release of an egg from the ovary.



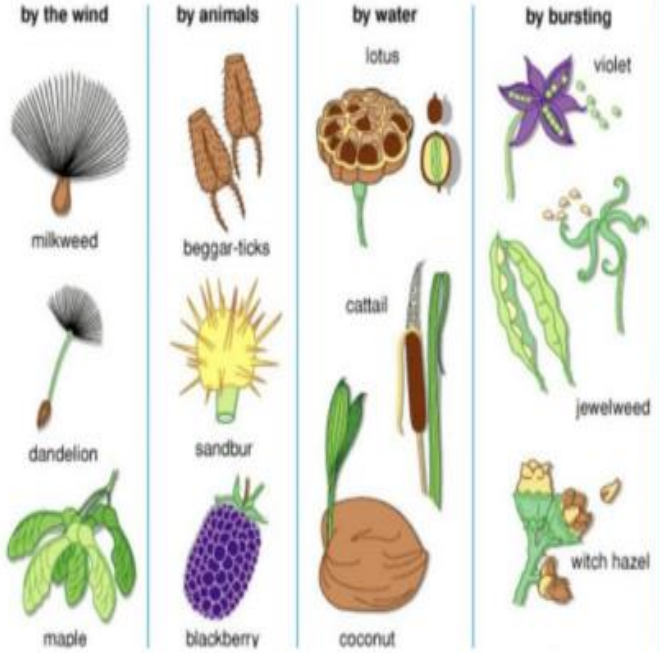
4. Plant Reproductive System



When pollen lands on the stigma, it grows a pollen tube to the ovule. The nucleus is released into the pollen tube and fertilizes the ovule. This then forms a seed.

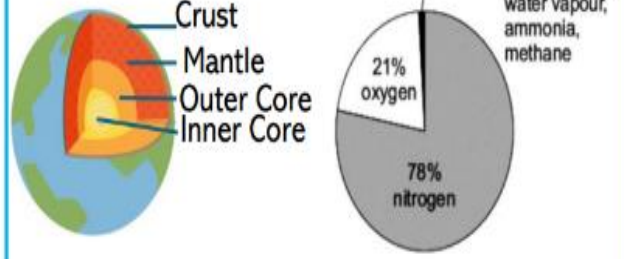
5. Seed Dispersal

Seeds can be dispersed (spread out) a number of different ways. The aim is to be as far away from the parent plant as possible so that resources like mineral ions, light energy and space do not need to be shared.



SCIENCE Y7 EARTH KNOWLEDGE ORGANISER

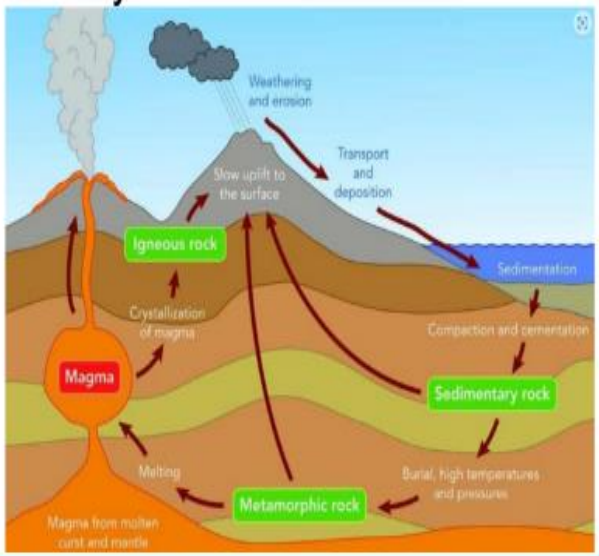
1. Earth and Atmosphere



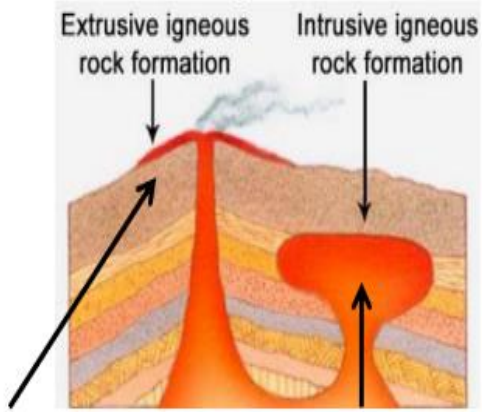
2. The Rock Cycle

Weathering – Bits break off rocks due to physical/biological and chemical weathering
Erosion – Rocks wear away to become smaller and rounder
Transportation – Bits of rock move to water
Sedimentation – Bits of rock settle on the floor of the sea as sediment
Burial and Compression – Layers are buried and water is squeezed out, salt cements the layers
Sedimentary Rocks (Layers/Fossils)
Heat and Pressure – Layers are changed by further pressure and heat
Metamorphic Rocks (Layers/crystals)
Melting and Cooling – Rocks melt and then cool forming crystals
Igneous Rocks (Crystals)

3. Rock Cycle



4. Intrusive/Extrusive Igneous



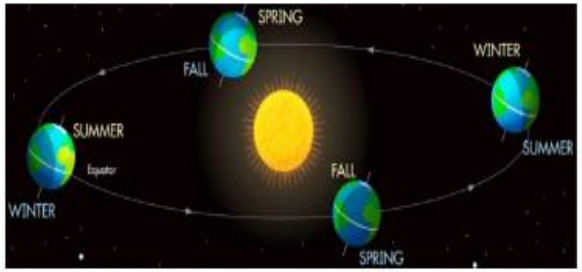
Cool **outside** the volcano **quickly**, have **small** crystals

Cool **inside** the volcano **slowly**, have **large** crystals

5. Day, Night and Seasons

The Earth rotates anticlockwise on its axis. This takes 24 hours – 12 hours is spent facing the sun (day-time) and 12 hours is spent facing away from the sun (night-time)

Seasons : The reason for the seasons is that the Earth is titled on its axis.



The moon blocks the light of the Sun from the Earth

The moon is in the Earth's shadow.