Name:

Form:

Knowledge Organisers

Year 8 Term 3

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: Y8 Term 3

Art Knowledge Organiser: Year 8 Architecture – Term 3

Theoretical Knowledge

Ancient Egyptian architecture includes huge temples, pyramids, and tombs Egyptians built to honour their gods and pharaohs.

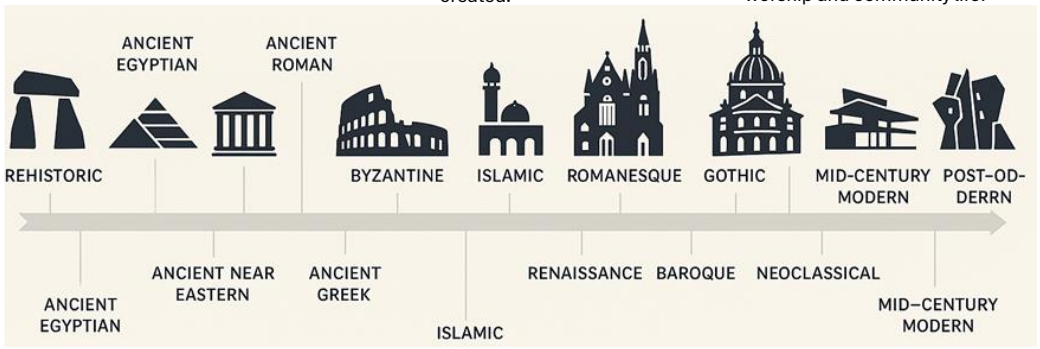
Ancient Roman architecture includes the strong, grand buildings, like arches, baths, and arenas that Romans built to show their power and make city life easier.

Byzantine architecture includes the beautifully decorated churches and buildings with big domes and glowing mosaics that the Byzantine Empire created.

Islamic architecture is beautifully patterned. This includes buildings, like mosques with domes, arches, and tall minarets, that Muslims created for worship and community life.

Gothic architecture is tall, dramatic churches with pointed arches, huge stained-glass windows, and sky-high towers built in medieval Europe.

Prehistoric architecture includes the very first homes and stone structures humans built long, long ago.



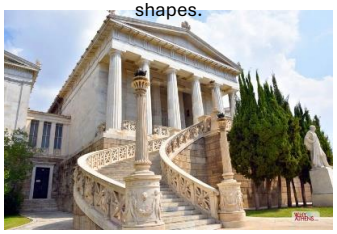
Postmodern architecture is playful, unusual buildings that mix old and new styles to stand out and break the rules.

Ancient Greek architecture means the grand temples and buildings with tall columns and perfect symmetry that the Greeks built to honour their gods.

Romanesque architecture means the sturdy, rounded-arch churches and castles built in medieval Europe that look thick, heavy, and fortress-like.

Baroque architecture means grand, dramatic buildings filled with curves, decoration, and a sense of movement that makes everything feel rich and theatrical.

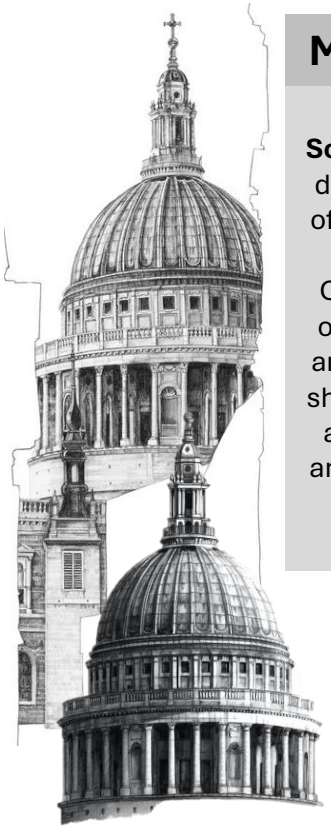
Neoclassical architecture means elegant, balanced buildings inspired by ancient Greek and Roman temples, with tall columns and clean, simple shapes.



Mid-century modern architecture has simple, clean-lined buildings with big windows and natural materials that became popular in the mid-1900s.

Art Knowledge Organiser: Year 8 Architecture – Term 3

Theoretical Knowledge



Minty Sainsbury

Minty Sainsbury is a **Scottish** artist who draws detailed **pencil pictures** of **buildings**. She studied architecture at Cambridge and was top of her class. She left her architecture job because she missed hand-drawing and became a full-time artist. **She loves drawing small architectural details.**

Sunga Park

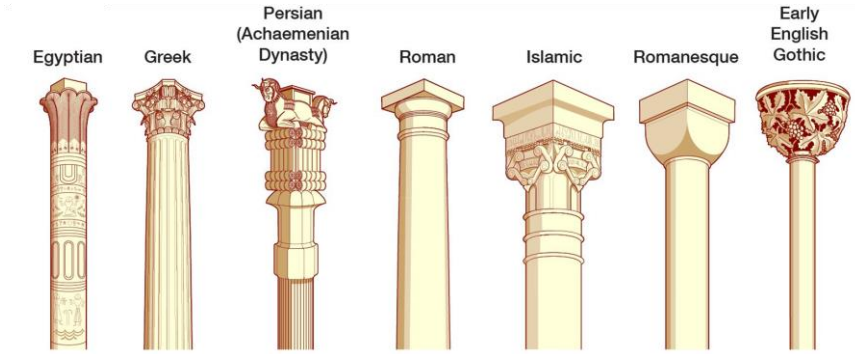
Sunga Park is a **Korean** watercolour artist who paints dreamy pictures of **buildings and places** from around the world. Before becoming an artist, she worked as a **graphic designer**, but she wanted more creativity in her life. **Traveling inspired** her, so she began sketching and painting the cities she visited.

Zaha Hadid

Zaha Hadid was an **Iraqi-British architect** known for her **bold**, **futuristic** buildings with **sweeping curves** and **flowing shapes**. Born in Baghdad in 1950, she studied mathematics and then **architecture**, eventually becoming one of the **most influential architects in the world.** She designed famous buildings like the London Aquatics Centre and the MAXXI Museum, and **she was the first woman to win the Pritzker Architecture Prize.**

Art Knowledge Organiser: Year 8 Architecture – Term 3

Theoretical Knowledge



Charcoal is a drawing material made from burnt wood, and artists use it because it **creates rich, dark lines and soft, smudgy shadows.** It's great for quick sketches and **expressive drawings** because it moves easily across the paper. You can blend it with your fingers or a tissue to make smooth shading, and you can also erase it to create highlights. Charcoal can be a bit messy, but that's part of what makes it fun and perfect for **bold**, **dramatic** artwork.

Christopher Wren

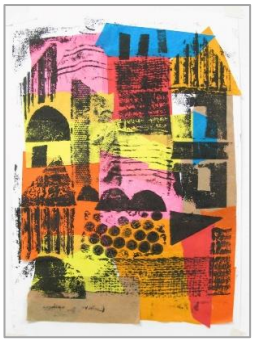
Christopher Wren was one of Britain's most important **architects**, famous for rebuilding London after the Great Fire of 1666. His greatest achievement **is St Paul's Cathedral**, known for its **huge dome** and **elegant classical style**. Wren **designed over 50 churches**, using features like columns, symmetry, and clean lines that helped shape the look of London as we know it today.

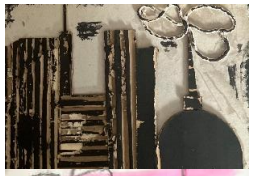
Form, Function and Aesthetic

In architecture, "form" means the shape and structure of a building — basically what it looks like. "Function" is what the building is made for, like whether it's a school, a shop, a house, or a museum. "Aesthetic" is about how nice the building looks, including its style, materials, colours, and decorative details. Architects have to think about all three so a building works properly, stands safely, and looks good.

Art Knowledge Organiser: Year 8 Architecture – Term 3

Theoretical Knowledge



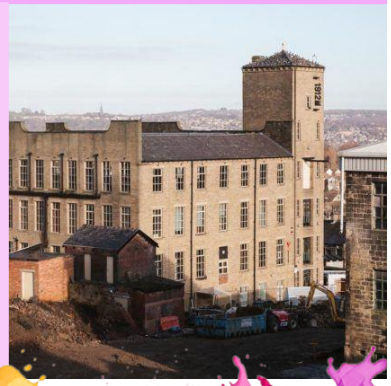


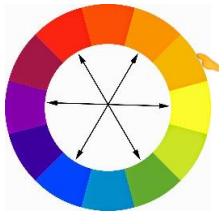
A **collagraph** is a type of artwork you make by gluing different textured materials onto a board (like cardboard) to build a raised surface. You might use things like **string, leaves, fabric, sandpaper, bubble wrap** — anything with texture. Once the board is dry, you roll ink or paint over it and then press paper on top to make a print.

Jeanette Barnes is an artist from London who makes huge, energetic drawings of cities. She loves drawing busy places like London with lots of buildings, movement, and people.

Sunny Bank Mills

Sunny Bank Mills is **an old textile mill** in Farsley (near Pudsey) that has been turned into a fun arts and community space. It used to make special cloth called worsted more than 100 years ago, but now it's **full of art galleries, workshops, studios, and a museum.** We create **collagraphs** by looking at the architecture of buildings, including mills!





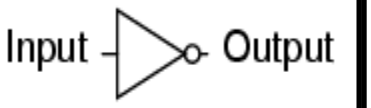
COLOUR THEORY

Key Term	Where they are on the Wheel	What they do	mood They Create
Harmonious	Next to each other	Blend smoothly	Calm, peaceful
Complementary	Opposite each other	High contrast	Bold, dramatic

Computing: Y8 Term 3

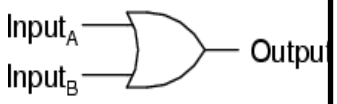
Boolean Logic Knowledge Organiser

NOT gate truth table



Input	Output
0	1
1	0

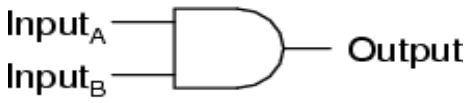
2-input OR gate



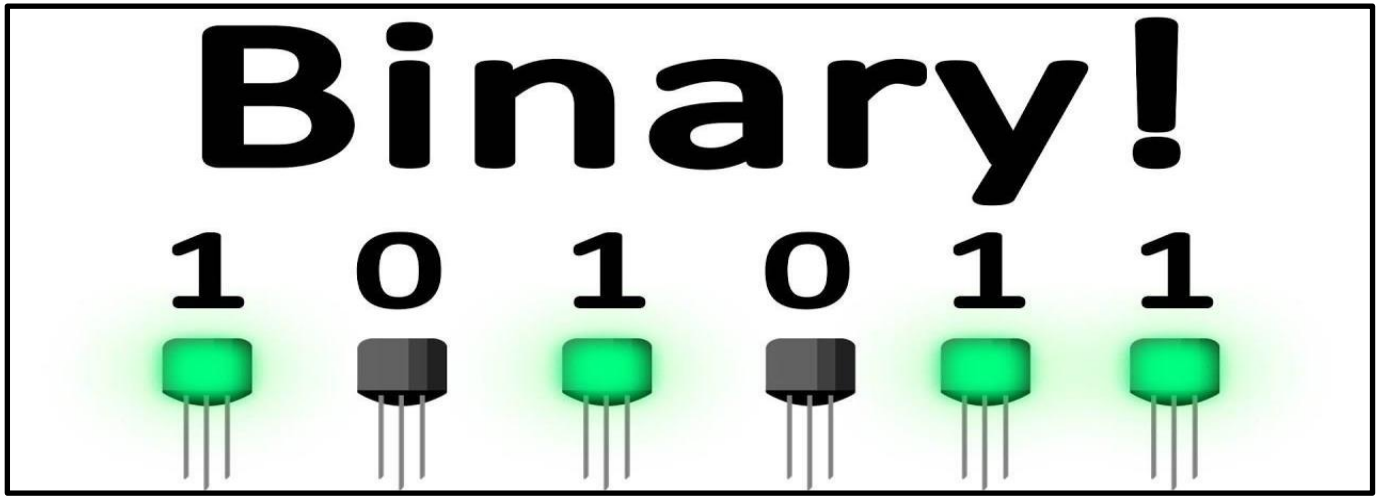
A	B	Output
0	0	0
0	1	1
1	0	1
1	1	1

Binary	**A series of 1s and 0s used for data and instructions represented by switches/ transistors.**
Boolean logic	**A form of logic centred around operations between combinations of 1s ad 0s.**
AND (Conjunction)	**A Boolean operation where both inputs must be a 1 for the output to be 1.**
OR (Disjunction)	**A Boolean operation where at least one input needs to be a 1 for the output to be 1.**
NOT (Negation)	**A Boolean operation where the output is the inverse of the input.**
Truth table	**A table which can be used to work out the output for different combinations of inputs being used with Boolean operators.**
Logic diagram	**A way to visualise how data passes through different gates.**

2-input AND gate



A	B	Output
0	0	0
0	1	0
1	0	0
1	1	1



Python Knowledge Organiser

What is a Python?

Python is a **text based programming language** that can be used to create small programs, web applications, games and even search engines like Google and YouTube!

Python is easy to learn and is agreat beginner language.

Variables

A variable is something that can be **used to store information**. The information that is stored can be changed.

Input statements

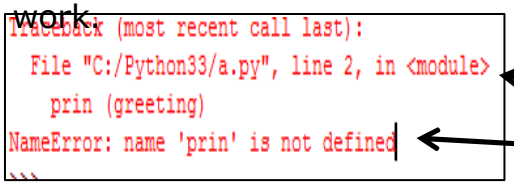
Using **var = input ()** we can ask a user to input some information.

We can then **print** this back to the console window.

userName is a **variable.** This means we can change the information stored. We can also name it whatever we want.

Syntax

Syntax is what we call the format that the code needs to be in, in order to be processed correctly.
If it is not in the correct format then the code will not work.



Python tells us where the error is and what type it is. Here it says the line the error is on
Here it says what type of error.

IF statements

IF statements can be used to select different options in a program depending on a condition. Also known as **selection.**

Executing a program

In order to run or **test** a program written in Python the user needs to go to **Run** and then **Run Module.**

Alternatively, you could press the **F5**button on the keyboard.

Print statements

In order to display text in the **shell** you need to use a **Print** statement.

Data types

Different types of data are stored in variables as different **data types**. There are **three** main data types: **String, Integer** & **Float**

String
A type of variable for storing **text**
"strings" **e.g.** "Hello World"

Integer
A type of variable for storing **whole numbers**
e.g. 10, 182, -44

Float
A type of variable for storing **decimal numbers**. Also known as a **real** number
e.g. 2.5, 5.05, 3.14

DT: Y8 Term 3

Design Technology Knowledge Organiser: Y8 Graphics Project Term 3

Theoretical Knowledge

Type of Graphic Design	What It Focuses On	Examples
Brand and Visual Identity Design	How a brand looks and feels	Logos, colour palettes, brand guidelines, business cards
Marketing and Advertising Design	Visuals that promote products, services, or messages	Posters, social media graphics, banners, leaflets, adverts
User Interface (UI) Design	The look and layout of digital products	App screens, website layouts, buttons, icons
User Experience (UX) Design	How easy and enjoyable a digital product is to use	Wireframes, user flow diagrams, prototypes
Packaging Design	Boxes, bottles, wrappers, and labels for products	Food packaging, beauty products, electronics
Motion Graphics and Animation	Graphics that move	Animated logos, explainer videos, social media animations
Illustration and Digital Art	Custom drawings or artworks used in designs	Book illustrations, character design, editorial artwork
Print Design	Physical, printed materials	Magazines, brochures, posters, menus, flyers
Environmental and Spatial Design	Large-scale designs that shape physical spaces	Exhibition graphics, signage, wall murals
Editorial and Publication Design	Layouts for long-form reading	Books, magazines, newspapers, reports

Design Technology Knowledge Organiser: Y8 Graphics Project

Theoretical Knowledge - Research

What is Graphic Design?

Why Is Graphic Design Important?
- Helps communicate ideas quickly and clearly
- Builds brand identity and personality
- Makes information easier to understand
- Influences how people feel, think, and act
- Enhances user experience in digital products

What Is Graphic Design?

Graphic design is the practice of creating visual content to communicate messages. Designers combine **images, colour, typography, layout, and illustration** to make information clear, engaging, and visually appealing.

Graphic design is used everywhere — from posters and packaging to mobile apps, websites, adverts, and branding. It blends **creativity**, **communication**, and **problem-solving**.

Key Skills in Graphic Design
- Visual communication
- Typography
- Colour theory
- Layout and composition
- Digital illustration
- Image editing
- Creative thinking and problem-solving
- Use of tools such as Adobe Illustrator, Photoshop, InDesign, Figma, and Canva

What Is Typography?

Typography is the way designers choose and arrange **fonts**, **sizes**, **spacing**, and **layout** to communicate a message effectively.

Design Technology Knowledge Organiser: Y8 Graphics Project Term 3

Theoretical Knowledge

Aspect	Explanation
Definition of Typography	The art and technique of arranging text so it is clear, readable, and visually appealing. It involves choosing and organising fonts, sizes, spacing, and layout.
Typefaces and Fonts	A *typeface* is a style of letters (e.g., Arial). A *font* is a specific version of that typeface (e.g., Arial Bold).
Hierarchy	Using different text sizes, weights, and styles to show which information is most important (e.g., title, sub-heading, body text).
Spacing	Adjusting the space between letters (**kerning**), lines (**leading**), and blocks of text (**tracking**) to improve readability.
Alignment	The positioning of text: left aligned, right aligned, centred, or justified. Alignment affects the structure and flow of the design.
Readability vs Legibility	**Legibility:** how easy it is to distinguish individual letters. **Readability:** how easy a block of text is to read as a whole.
Why Typography Matters	It sets the mood of a design, guides the viewer's attention, improves clarity, and helps communicate messages effectively.

Design Technology Knowledge Organiser: Y8 Graphics Project Term 3

Theoretical Knowledge

Different Font Types & Your Logo

SERIF FONTS

{Most classic fonts. Categorized by the little lines at the end of the letter's strokes. They can give your logo a sense of history and luxury. They are also great for paragraphs and fine print. }

SAN-SERIF FONTS

{Without serif. They tend to vary a lot between styles, but they are generally known to give your brand a clean, modern look. The thinner the lines the more high-end things tend to look feminine. }

SLAB FONTS

{Are great for headlines or bold logos. They have a lot of impact and can range from friendly to authoritative depending on the font}

Script Fonts

{Cursive style fonts. They can have a handwritten style that is great for more feminine brands or small businesses. A popular use for these are weddings and formal events.}

DECORATIVE FONTS

{highly stylized so you'll want to be careful how you use them. They are very versatile but can very easily get hard to read or understand. They shouldn't be used for large quantities of text.}

Design Technology Knowledge Organiser: Y8 Graphics Project Term 3

Theoretical Knowledge

BRANDING

Branding Element	Examples
Logos	Nike "Swoosh"; Apple logo; McDonald's golden arches
Colour Palettes	Coca-Cola (red & white); IKEA (blue & yellow); Spotify (green & black)
Typography (Brand Fonts)	Disney script font; BBC bold type; Google sans-serif font
Slogans / Taglines	Nike – *Just Do It*; Tesco – *Every Little Helps*; LG – *Life's Good*
Brand Imagery / Style	Apple minimalism; Innocent Drinks playful illustrations; Adidas sporty imagery
Packaging	Pringles tube; Toblerone triangular box; Innocent smoothie bottles
Brand Voice	Innocent – friendly & humorous; BBC – formal & trustworthy; Lush – ethical handwritten style
Mascots	Compare the Market meerkats; Tony the Tiger; M&M's characters

Drama: Y8 Term 3

DRAMA Knowledge Organiser: Key Vocabulary Y8 HT5

ANCIENT GREEK THEATRE
ANTIGONE by SOPHOCLES

HISTORY: Greek Theatre began in the 6th Century BCE in Athens with the performance of tragedy plays at religious festivals. These in turn inspired the genre of Greek comedy plays. The two types of Greek drama would be hugely popular, and performances spread around the Mediterranean. Aeschylus and **Sophocles** were the two most famous Greek playwrights.

What can you discover?
The History of Ancient Greek Theatre: Amphitheatre, masks & origins
The Greek Chorus with focus on unison, timing and voice work
The difference between Comedy and Tragedy
The aspect of the designer role within drama – costume, set design & lighting effects
The Story of Antigone

The Stage

Three Main Portions of Greek Theatre:

Skene – Portion of stage where actors performed (included 1-3 doors in and out)

Orchestra – "Dancing Place" where chorus sang to the audience

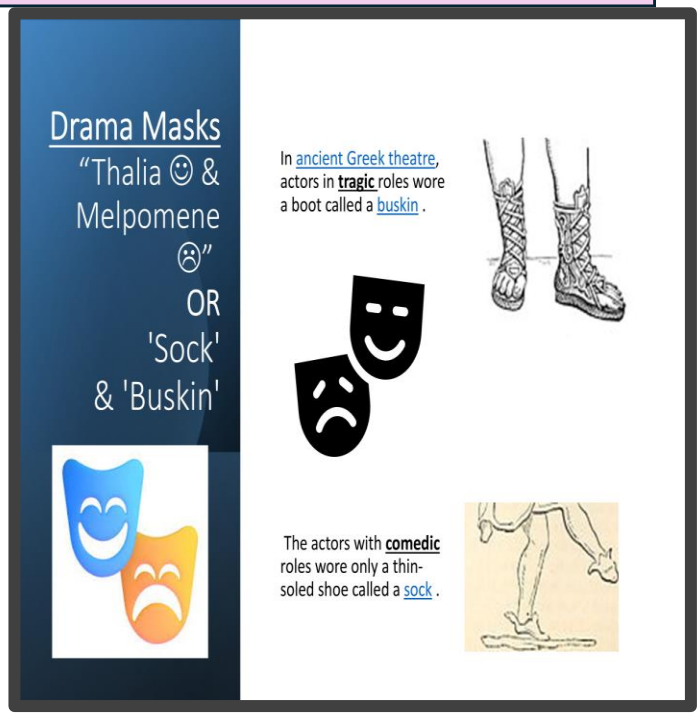
Theatron – Seating for audience

Parts of a Greek Theater

DRAMA Knowledge Organiser: Key Vocabulary Y8 HT6

ANCIENT GREEK THEATRE
ANTIGONE by SOPHOCLES

Key Vocabulary	Definition
Chorus	A group of performers who function as a commentary on action.
Choragos	The head chorus member who could enter the story as a character able to interact with others in the play
Comedy & Tragedy	The two principal dramatic forms of theatre in ancient Greece
Orchestra	'Dancing place' flat terrace where the chorus performed
Theatron	Slope, watching place, from which the word 'theatre' derived



English: Y8 Term 3

Knowledge Organiser: *The Woman in Black* by Susan Hill

Key Vocabulary	Definition	In a sentence
Haunt (*verb*)	Of a ghost: to appear somewhere; of an experience: to cause repeated suffering or anxiety.	The woman in black **haunts** Crythin Gifford. Arthur is **haunted** by his experience with the woman in black.
Isolation (*noun*)	The state of being distant or separate from other people and/or places.	The townspeople's refusal to talk about the woman in black increases Arthur's sense of **isolation**.
Foreboding (*noun*)	A worrying feeling that something bad is going to happen.	The abandoned mansion created a sense of **foreboding**.
Rational (*adjective*)	Guided by logic and facts rather than imagination and superstition.	As a lawyer, Arthur is **rational**.
Malevolent (*adjective*)	Wanting to cause harm, evil.	The woman in black's **malevolent** presence terrifies the people of Crythin Gifford.
Vengeful (*adjective*)	Wanting revenge; desiring to hurt someone to punish them	The woman in black is a **vengeful** ghost.

Key Terminology

Withholding information
When a writer keeps details from the reader.

Pathetic fallacy
When nature (usually weather) mirrors a character's emotions.

Protagonist
The main character.

Antagonist
The character in conflict with the protagonist (often a villain) .

Convention
A common feature of something, e.g. a gothic convention is an isolated setting.

Key settings

London – where Arthur Kipps begins and ends his story.
Crythin Gifford – a small town in Northeast England, near the coast.
Eel Marsh House – a lonely, desolate mansion where Mrs Drablow lived.
The Nine Lives Causeway – a narrow path connecting Eel Marsh House, which is on an island, to Crythin Gifford, which is on the mainland. The causeway can only be crossed when the tide is low.
The Graveyard and Church – where Mrs. Drablow is buried in Crythin Gifford. Arthur first sees the woman in black here at her funeral.

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

- Thinking about why Hill uses a framing story (Arthur narrating from the past as an older man)
- How Arthur changes across the text
- Considering the Edwardian (1901-1910) setting of the novel. What comments might Hill be making about the treatment of women? How are these points still relevant when Hill was writing (1983)?

Key characters

Arthur Kipps – a lawyer sent to sort out a Mrs Drablow's will and ends up haunted by the woman in black. As an older man, he writes down what happened to him.

Esme – (older) Arthur's wife.

Stella – (younger) Arthur's fiancée.

Alice Drablow – a woman who lived in Eel Marsh House and has recently died.

Samuel Daily – a wealthy man who helps Arthur and gives him a dog for safety.

Mr. Jerome – a man who is helping Arthur with his work in Crythin Gifford. He is very afraid of the woman in black.

The woman in black – a mysterious, ghostly woman who haunts Crythin Gifford and Eel Marsh House.

Keckwick – a driver who takes Arthur to the haunted house and says very little.

Spider – a brave dog that protects Arthur and senses danger before he does.

Food & Nutrition: Y8 Term 3

Food & Nutrition Knowledge Organiser: Y8 Nutrition

Keywords and Definitions

Carbohydrates (Starches and sugars)	Needed for energy	Starchy foods: bread, pasta, rice, cereals, oats
Protein	Needed for growth, repair and maintenance of body cells	Meat, fish, cheese, eggs, beans, pulses, nuts, tofu
Fats & Oils	Needed for warmth, insulation and fat soluble vitamins	Oils from vegetables, seeds and nuts. Butter.

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

Vitamin	Function (what it does in the body)	Source (the foods we get it from)
Vitamin A	Helps against infection; eye health; keeps skin healthy	Yellow, red and green vegetables, eggs, cheese, oily fish
B vitamins	Nervous system; releases energy from food.	Breakfast cereals, eggs, milk, meat, fish, mushrooms, oats, bananas
Vitamin C	Protects cells and keeps them healthy; maintains healthy skin, blood vessels, bones and cartilage.	Citrus fruits, strawberries, broccoli, potatoes
Vitamin D	Keeps bones, teeth and muscles healthy.	Oily fish, red meat, egg yolks, breakfast cereals
Vitamin E	Healthy skin and eyes; immune system and protects against illness and infection.	Nuts and seeds, vegetable oil, sunflower oil
Vitamin K	Needed for blood clotting and helping wounds to heal. Keeps bones healthy.	Leafy green vegetables such as broccoli and spinach, vegetable oils and cereal grains.

Mineral	Function (what it does in the body)	Source (the foods we get it from)
Iron	Making red blood cells which carry oxygen around the body.	Red meat, beans, nuts, dried fruit, breakfast cereals.
Calcium	Builds bones and keeps teeth healthy. Blood clotting.	Milk, cheese and other dairy foods. Green leafy veg, soya drinks, fish.
Magnesium	Turns food into energy	Spinach, nuts, wholemeal bread
Potassium	Controls balance of fluids in the body; helps the heart work properly.	Bananas, nuts, seeds, beans and pulses, fish, beef, chicken
Salt	Keeps level of fluids balanced in the body.	Small amounts from cheese, bread, meat products.

Food & Nutrition Knowledge Organiser: Y8 Nutrition

Knowledge

Deficiency: not having enough of something that is needed by the body

Vitamin	Symptoms of deficiency
Vitamin A	Dry eyes, night blindness, infertility, acne, infections
Vitamin B complex	Sore tongue, depression, pins and needles, depression
Vitamin C	Dry skin, nosebleeds, wounds take a long time to heal, bleeding gums
Vitamin D	Tiredness, bone pain, muscle weakness, depression
Vitamin E	Frequent infections, muscle weakness, vision problems.
Vitamin K	Bruising, heavy periods, excessive bleeding from cuts and wounds

Mineral	Symptoms of deficiency
Iron	Anaemia - tiredness and lack of energy shortness of breath, noticeable heartbeats, paler than usual skin, headaches
Calcium	Rickets (weak and soft bones, not growing properly) Osteoporosis (soft bones that break easily) Tiredness and muscle aches.
Magnesium	Vomiting, feeling sick, muscle weakness, tiredness
Potassium	High blood pressure, tiredness, constipation, kidney problems, cramps, abnormal heart rhythm
Sodium	Nausea, vomiting, headaches, confusion, drowsiness, cramps

Food and Nutrition Knowledge Organiser: Y8 Term 3

Key Words and Definitions

What Is Dairy?

Dairy products come from animal milk, usually from cows, goats, or sheep.

Examples: milk, cheese, yoghurt, cream, butter.

What Are Dairy Alternatives?

Dairy alternatives are **plant-based products** used instead of milk, cheese, or yoghurt.

They are great for people who are lactose intolerant, vegan, or have milk allergies.

Nutrient	Notes
Calcium	Many alternatives are **fortified** (added) with calcium
Protein	Soya milk is closest to dairy in protein content
Fat & Sugar	Some have added sugar/fats – check the label!
Vitamins	Look for **vitamin D & B12** (often added)

Theoretical Knowledge

Product	Made From	Used For
Soya Milk	Soya beans	Drinking, cereal, cooking
Oat Milk	Oats + water	Coffee, baking, cereal
Almond Milk	Almonds + water	Smoothies, cereal
Coconut Milk	Coconuts	Curries, baking, dairy-free cream
Rice Milk	Ground rice + water	Drinking, cooking
Plant-based yoghurt	Soya, coconut, oats	Snacks, breakfasts
Vegan cheese	Soya, nuts, oils	Pizza, toasties, cooking

What Is Lactose Intolerance?

Lactose is the natural sugar in milk.
Some people can't digest it properly – this is called lactose intolerance.

Symptoms of lactose intolerance:

- ✔ Bloating
- ✔ Stomach pain
- ✔ Diarrhoea
- ✔ Gas
- 🧬 It happens because their body doesn't make enough lactase (the enzyme that breaks down lactose).

Food & Nutrition Knowledge Organiser: Y8

Skills

Savoury Rice

Ingredients

1 onion
3 mushrooms
½ red pepper
150g long grain rice
1 stock cube
50g peas
2 x tsp curry powder

Method

1. Dissolve the stock cube in boiling water in a saucepan.
2. Add the rice.
3. Prepare all the vegetables – dice the pepper, slice the mushroom, dice the onion.
4. Add the vegetables to the pan of rice along with the curry powder.
5. Turn the heat down and simmer for 15 minutes.
6. Serve.

Chow Mein

Ingredients

150g medium egg noodles
dash toasted sesame oil
2 skinless chicken breast fillet
2 tbsp light soy sauce
1 tsp five-spice powder
1 tsp chilli sauce (optional)
1 tbsp cornflour
1 red pepper, seeds removed and thinly sliced
150g beansprouts
1 spring onion, sliced lengthways

Method

1. Cook the noodles in a pan of boiling water for 2–3 minutes, until al dente, or according to packet instructions. Drain, then rinse under cold running water and drain again. Drizzle with a dash of sesame oil and toss through to prevent the noodles from sticking to each other.
2. Put the chicken strips in a bowl and season with a dash of light soy sauce, the five-spice powder and chilli sauce, if using. Mix well, then lightly dust the chicken strips with the cornflour.
3. Heat a wok until smoking and add the groundnut oil, then add the chicken and stir fry for 3–4 minutes, or until the chicken is golden-brown and cooked through.
4. Add the red pepper and stir fry for 1 minute, then add the bean sprouts and spring onion and stir fry for 30 seconds. Stir in the cooked noodles and season with the soy sauce, a dash of sesame oil and freshly ground black pepper.
5. Pile the noodles onto a serving plate and serve immediately.

Lemon Curd

Ingredients:

2 lemons, washed
100g sugar
50g butter
2 eggs

Method

1. Zest the lemon – do not remove more than the yellow zest.
2. Cut the lemons in half and remove the juice.
3. Break the eggs in a saucepan and whisk gently.
4. Add the butter, sugar, lemon zest and lemon juice to the saucepan.
5. Place over a gentle heat and whisk continually.
6. Continue whisking until the mixture thickens (about 7 to 10 mins.) Pour into the warmed jar. When cooled, place in the fridge to set.

Food & Nutrition Knowledge Organiser: Y8

Skills

Fruit Tart

Ingredients

180g crumbled digestive biscuits
40g butter or margarine
200g cream cheese
120g lemon curd
Berries to decorate

Method

1. Melt the butter, then add the crushed biscuits. Press the mixture into the sides and bottom of a round tin or foil dish. Place in the freezer for about 10–15 minutes.
2. Mix the cream cheese and lemon curd and spread into the bottom of the chilled tart tin, covering the base evenly.
3. Arrange the fruit gently (so it doesn't sink in too much) on top of the cream cheese/lemon mixture in a decorative pattern.
4. Place the tart in the fridge. It does need to get properly cold in order to set enough for the tart to be unsprung and sliced

Fish Cakes

Ingredients

100g white fish/tin of mackerel, tuna or salmon
250g potatoes, cooked and mashed
15gmargarine
1 egg
Breadcrumbs
2 tbs flour

Method

1. Place the cold mashed potato and drained/flaked fish into a bowl. REMEMBER TO REMOVE ANY SKIN OR BONES. Season with salt and pepper.
2. Using a fork, mash the mixture together.
3. Divide the mixture into 6 pieces and shape into fish cakes. Coat each one in flour, then beaten egg and then breadcrumbs.
4. Heat a small amount of oil in a frying pan. Fry the fish cakes very gently, turning over once.
5. Drain on kitchen paper.

Low Fat Korma

Ingredients

1 chicken breast, skinless and boneless
OR cauliflower florets, red pepper, green beans, tin of chick peas etc
40g (1 1/2oz) natural yoghurt
1 medium onion, finely chopped
2 garlic cloves, finely chopped
2.5cm (1in) piece root ginger, peeled and grated
1 ½ tbsp korma curry paste
2 tbsp double cream
1 tsp soft brown sugar

Method

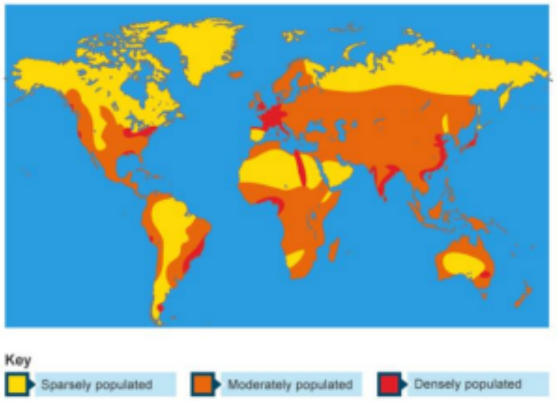
1. **Cut the chicken breasts/or the vegetables into bite-sized pieces, season well.**
2. **Heat the oil in a frying pan or wok over a medium heat. Add the onions, garlic and ginger and cook, stirring frequently, for 5 mins. Add the chicken and cook through until white.**
3. **Turn the heat down.**
4. **Add the curry paste and cook for another 2-3 mins. Add 100ml water and bring to the boil. Turn down the heat and simmer, uncovered, for 10-12 mins or until the liquid has reduced by half.**
5. **Stir in the yogurt, cream and sugar and cook for another 10 mins or until the chicken is tender** and cooked through, stirring all the while.

Geography: Y8 Term 3

Geography Knowledge Organiser: Population Y8

Population density

refers to the number of people living in an area. It is worked out by dividing the number of people in an area by the size of the area. If there are few people living in an area this means that it is **sparsely populated**, while a **densely populated** area has many people living there.



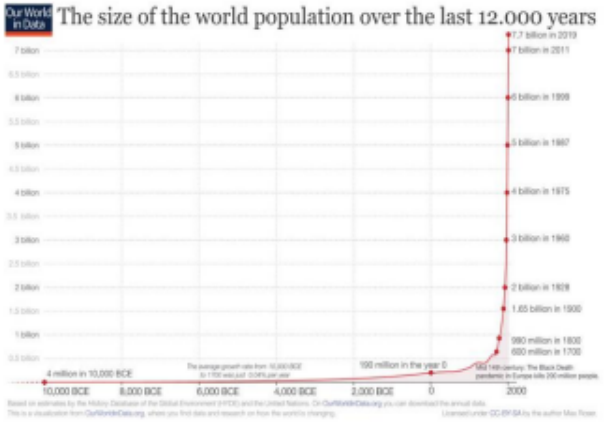
Population changes

The world's population has changed over time. During the 1st century AD, the world population was about 300,000 people. The current population is over 8 billion, and most of the growth has taken place within the last 100 years.

What causes population to change?

- births
- deaths
- migration

Overtime, as healthcare has improved, death rates have continued to fall. The introduction of vaccines has also helped to protect people from diseases. As a result**, life expectancy** has increased.



Factors affecting population density

Factors that can lead to dense populations include:

- flat or gently sloping land
- mild climate
- good soils
- lowland
- water
- good transport and communication links, e.g. ports
- places to work
- resources, e.g. coal, oil

Factors that can lead to sparse populations include:

- steep slopes
- harsh climate - very hot or very cold
- dense forest
- dry conditions
- isolated areas with poor transport links
- few jobs
- lack of resources

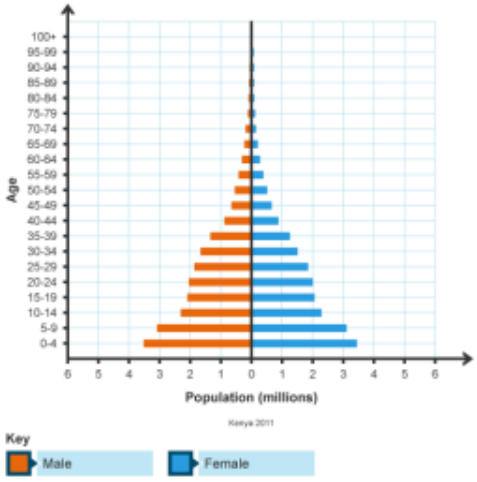
Population Pyramids

Population structures are shown using population pyramids. A population structure refers to the number of males and females in each age group that are found within a specific place.

What does this mean?

- A wide base means there are lots of young people, and suggests a **high birth rate**.
- A narrow base means a smaller proportion of young people, suggesting a **low birth rate.**
- A thin middle, short pyramid means a smaller ageing population, suggesting that there is not a **long-life expectancy.**

While improvements in healthcare have historically lowered death rates, increased access to contraception has lowered birth rates.



History: Y8 Term 3

History Knowledge Organiser: Y8 HT5 - Causes of WW1

Keywords and Definitions

Assassination – Murder of a public figure.
Colony – An area or country under the control of another.
Patriotism – Devotion and pride in ones country.
Trench – A Long Narrow Ditch.
Trench Warfare – Warfare that takes place in military trenches.
Long-Term Cause – Something that leads to an event over a long period.
Short Term Cause – Something that occurs close to the event.
Arms Race – Competition between nations for development and superiority of weapons.
Morale -The level of confidence, resilience, and determination among soldiers and civilians during a war.
Mobilization: The process of preparing and organizing troops and resources for combat.
Dreadnaught - A huge type of battleship.
Empire – A group of countries that are ruled over by one.
Propaganda – Information, often biased and misleading, used to promote a political cause.
Western Front – Fighting that took place from the Belgian Coast to the Swiss border.
Eastern Front – Fighting that took place around Germany, Austria-Hungary and Russia.

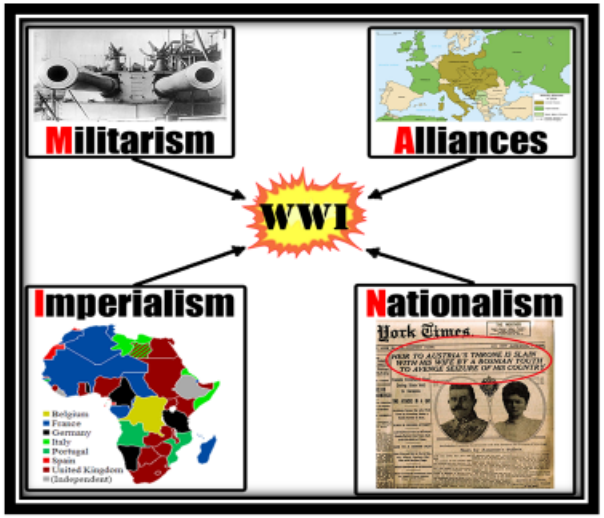
Schlieffen Plan
Designed by Alfred Von Schlieffen in 1905, it was a military plan to wage a successful two front war (against France and Russia). The German army would travel through neutral Belgium to attack France. Due to an old alliance (Treaty of London 1839) Britain declared war when Belgium were invaded in 1914.

Knowledge

Europe before World War I was a continent characterized by significant political, economic, and social transformations. It was a period marked by imperial competition, rising nationalism, complex alliances, and profound technological and industrial advancements. Tensions had been rising and the combination of several factors eventually led to the outbreak of the First World War in 1914.

Long-term causes of WW1

Militarism –
The idea that a nation should increase the size of their army and military capabilities so that it can protect or promote its interests. E.g. Anglo-German Naval Race between Britain and Germany.



Alliance System – An alliance is an agreement between two or more countries for mutual gain. Before 1914 there were two alliance systemin Europe, The Triple Alliance **1882** (Germany, Austria-Hungary and Italy) and the Triple Entente **1907** (Britain, France, Russia).

Imperialism – Claiming another territory as your own, adding to your empire. Owning more land brings wealth and trade. E.g. Germany wanted to expand its empire during the 1900s .

Nationalism –
Being proud and patriotic of your own ethnicity e.g. People in the Balkans wanted independence from the Austro-Hungarian empire.

Short-term cause of WW1

Assassination of Archduke Franz Ferdinand

- Franz Ferdinand was on a tour of Sarajevo, Bosnia – part of the Austro-Hungarian Empire.
- He and his wife Sophie was murdered by Gavrilo Princip – A member of the Serbian National group the Black Hand Gang.
- Austria-Hungary declared war on Serbia a month later.

Gavrilo Princip was a member of a group called the Black Hand, a secret society committed to ending Austro-Hungarian rule in Bosnia and advocating for Slavic independence. Princip was a member of a group called the Black Hand, a secret society committed to ending Austro-Hungarian rule in Bosnia and advocating for Slavic independence.

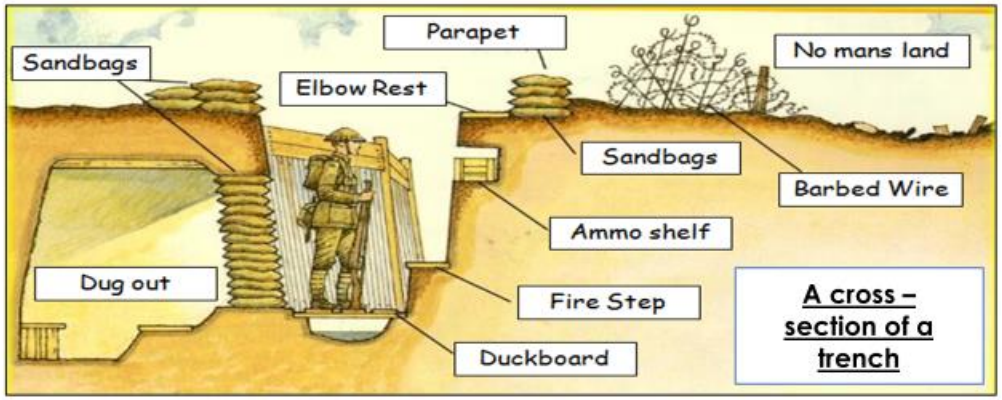
History Knowledge Organiser: Y8 HT6 - WW1

Keywords and Definitions

Armistice - An agreement made by opposing sides in a war to stop fighting; in World War I, the Armistice on November 11, 1918, marked the end of hostilities.
Empire Troops - soldiers from various parts of the British Empire (such as Australia, Canada, and India).
Recruitment - The process of enlisting new soldiers for the military, often through campaigns to encourage men to volunteer.
Conscription -The compulsory enlistment of individuals into the armed forces.
No Mans Land - The area between opposing trenches that was unoccupied and highly dangerous, as it was often under constant gunfire.
Stalemate - A situation where neither side in a conflict can make progress.
Massacre -The brutal and indiscriminate killing of a large number of people.
Christmas Truce - A series of unofficial ceasefires along the Western Front around Christmas 1914.
Homefront -The civilian populace and activities at home that support the military effort during a war.
Mobilization - preparing and organising an army.
Tank - An armoured fighting vehicle.

Knowledge

World War I was distinct due to advanced weaponry like machine guns, tanks, and chemical weapons, alongside trench warfare, causing a deadly stalemate and horrific conditions. The war's global scale involved many countries and colonies, leading to widespread civilian mobilization and economic strain. Mass mobilization resulted in millions of casualties. Politically, the war caused the collapse of several empires and the creation of new states, redrawing international borders. Extensive propaganda shaped public opinion and maintained war support, while media coverage brought brutal realities to the home front.



War at Sea (Naval Warfare)

Naval Battles: Important for controlling trade routes and supplies.
Blockades: Britain blocked German ports, causing shortages.
Submarines: German U-boats targeted Allied ships, including civilian vessels. This unrestricted submarine warfare brought the US into the war in 1917.

Trench Conditions

- **Rats and Lice –** Trenches were infested with rats who would feed off the dead. Poor hygiene also meant lice were everywhere.
- **Diseases –** Trench Foot was most common due to flooded trenches. Shell Shock (PTSD) was also common.
- **Weather –** Was extreme, summers were hot and winters freezing. Rain left trenches flooded.
- **Food –** Little variety so diets were poor and water was delivered in petrol cans.

WWI Medicine

Injuries: Shrapnel wounds, gas attacks, and infections were common.
Advances:

- Improvements in surgery and the use of antiseptics
- Development of plastic surgery
- Developments of prosthetics

Battles of WW1

Gallipoli (1915)
Location: Peninsula in Turkey.
Objective: Allies aimed to open a new front and capture Istanbul.
Outcome: Failed campaign with heavy losses, especially for Australian and New Zealand Army Corps (ANZAC).
The Battle of the Somme (1916)
Location: Northern France.
Objective: Allies to break through German lines.
Outcome: One of the bloodiest battles with over one million casualties. Showed the brutal reality of trench warfare.

Mathematics:

Y8 Term 3

Mathematics

Year 8 HALF TERM 5:

G5 Angles in parallel lines and polygons

In this chapter, students develop their geometric reasoning by exploring angle relationships in parallel lines and polygons. The chapter begins with a review of basic angle rules and notation, ensuring a strong foundation in the use of angles on a straight line, around a point, and in triangles. Students then investigate angles formed between parallel lines and a transversal, learning to identify and use alternate, corresponding, and co-interior angles to solve problems. As their confidence grows, they apply these angle facts to more complex diagrams, requiring multiple steps and logical deduction. The focus then shifts to special quadrilaterals, where students study their properties, including side lengths, angles, and the behaviour of diagonals. They apply this understanding to find missing sides and angles, using known geometric facts and reasoning. The final part of the chapter explores angles in polygons, including the calculation of exterior and interior angles and how these relate to the number of sides. Students apply this knowledge to regular polygons and use it to solve both numerical and reasoning problems. The chapter ends with opportunities to prove simple geometric facts, reinforcing logical thinking and precision

P1 Tables and probability

In this chapter, students build a deeper understanding of probability, developing the language, conceptual tools, and strategies to describe and analyse chance events. The chapter begins by introducing key probability vocabulary and the probability scale, enabling students to express the likelihood of outcomes using numerical values between 0 and 1. Students then learn to calculate the probability of single events and apply the principle that the sum of all probabilities in a given situation is 1, reinforcing their understanding of complete sample spaces. They explore how to conduct and interpret probability experiments, using results to inform judgments and predict outcomes. The chapter progresses to the construction and use of sample spaces, both for single and combined events, allowing students to find probabilities systematically. Visual tools such as two-way tables and frequency trees are introduced, helping students to organise data and extract probabilities in increasingly complex scenarios. Throughout the unit, students are encouraged to apply logical reasoning, work with real-life contexts, and use multiple representations to communicate their thinking. This structured approach helps lay the foundation for more formal statistical reasoning in future years.

Knowledge Organisers : Year 8 HT5

G5 Angles in parallel lines and polygons

Mathematics

What do I need to be able to do?

- **Step 1** Basic angles rules and notation
- **Step 2** Angles between parallel lines
- **Step 3** Alternate and corresponding angles
- **Step 4** Alternate, corresponding and co-interior angles
- **Step 5** Solve complex problems with angles in parallel lines
- **Step 6** Properties of special quadrilaterals and their diagonals
- **Step 7** Find sides and angles in special quadrilaterals
- **Step 8** Exterior angles of a polygon
- **Step 9** Interior angles of a polygon
- **Step 10** Interior angles in a regular polygon
- **Step 11** Prove simple geometric facts (E)

Keywords

Parallel: Straight lines that never meet
Angle: The figure formed by two straight lines meeting (measured in degrees)
Transversal: A line that cuts across two or more other (normally parallel) lines
Isosceles: Two equal size lines and equal size angles (in a triangle or trapezium)
Polygon: A 2D shape made with straight lines
Sum: Addition (total of all the interior angles added together)
Regular polygon: All the sides have equal length, all the interior angles have equal size

Basic angle rules and notation

Acute Angles
0° < angle < 90°

Right Angles
90°

Right angle notation

Obtuse
90° < angle < 180°

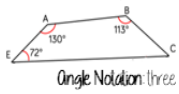
Reflex
180° < angle < 360°

Straight Line
180°

Vertically opposite angles
Equal

Angles around a point
360°

The letter in the middle is the angle
The arc represents the part of the angle



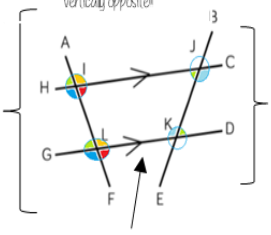
Angle Notation: three letters ABC
This is the angle at B = 113°
Line Notation: two letters EC
The line that joins E to C

Parallel lines

Still remember to look for angles on straight lines, around a point and vertically opposite!!

Lines OF and BE are **transversals** (lines that bisect the parallel lines)

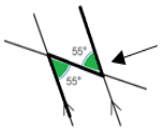
Corresponding angles often identified by their **"F shape"** in position



Alternate angles often identified by their **"Z shape"** in position

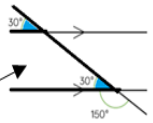
This notation identifies parallel lines

Alternate/ Corresponding angles

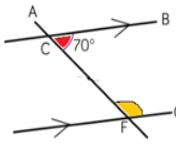


Because alternate angles are equal the highlighted angles are the same size

Because corresponding angles are equal the highlighted angles are the same size



Co-interior angles

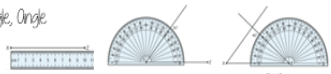


Because co-interior angles have a sum of 180° the highlighted angle is 110°

As angles on a line add up to 180° co-interior angles can also be calculated from applying alternate/ corresponding rules first

Triangles & Quadrilaterals

Side, Angle, Angle



Side, Angle, Side

Side, Side, Side

Properties of Quadrilaterals

Square
All sides equal size
All angles 90°
Opposite sides are parallel

Rectangle
All angles 90°
Opposite sides are parallel

Rhombus
All sides equal size
Opposite angles are equal

Parallelogram
Opposite sides are parallel
Opposite angles are equal
Co-interior angles

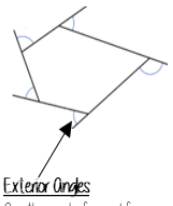
Trapezium
One pair of parallel lines

Kite
No parallel lines
Equal lengths on top sides
Equal lengths on bottom sides
One pair of equal angles

Sum of exterior angles

Exterior angles all add up to 360°

Using exterior angles



Exterior Angles
Are the angle formed from the straight-line extension at the side of the shape

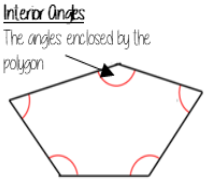
Interior angle + Exterior angle = straight line = 180°
Exterior angle = 180 − 165 = 15°

Number of sides = 360° ÷ exterior angle
Number of sides = 360 ÷ 15 = 24 sides

Sum of interior angles

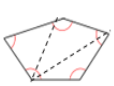
(number of sides − 2) x 180

Interior Angles
The angles enclosed by the polygon



This is an **irregular** polygon – the sides and angles are different sizes

Sum of the interior angles = (5 − 2) x 180



This shape can be made from three triangles
Each triangle has 180°

Sum of the interior angles = 3 x 180
= 540°

Remember this is **all** of the interior angles added together

Missing angles in regular polygons

Exterior angle = 360 ÷ 8 = 45°

Interior angle = $\frac{(8-2) \times 180}{8}$ = $\frac{6 \times 180}{8}$ = 135°

Exterior angles in regular polygons = 360° ÷ number of sides

Interior angles in regular polygons = $\frac{(\text{number of sides} - 2) \times 180}{\text{number of sides}}$

Knowledge Organisers : Year 8 HT5

G5 Angles in parallel lines and polygons

Mathematics

G5 - ANGLES IN PARALLEL LINES AND POLYGONS

Retrieval Practice

1) How many days are there in August?

2) Add together 3.6 kg and 850 g.

3) Write 140 000 in standard form.

4) Factorise fully $12x - 3xy$.

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

Basic angle rules and notation – M502, M818, M163, M331
Angles between parallel lines and a transversal – M606, U826
Alternate and corresponding angles – M606, U826
Alternate, corresponding and co-interior angles – U826
Solve complex problems with angles in parallel lines – M319, U655, U826
Properties of special quadrilaterals and their diagonals – M679, U732, U329
Find sides and angles in special quadrilaterals – M393, U329, U732
Exterior angles of a polygon – M653, U427
Interior angles of a polygon – M653, U427
Interior angles in a regular polygon – M653, U427
Prove simple geometric facts (F) – U471, U887

Careers Focus – Where could this take you?

A **CAD technician** uses software to create technical drawings and plans. They work alongside architects and design engineers to turn designs into accurate and detailed technical drawings in 2D and 3D models.

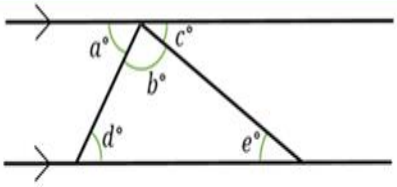
Topic Link

This topic links to:
Angles in triangles and quadrilaterals, Angles around a point, Angles on a straight line, vertically opposite angles.
Solving equations

Additional Resources

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

Self quizzing



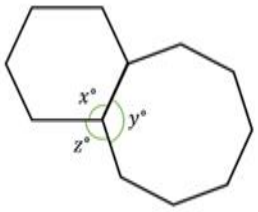
Complete the proof that angles in a triangle add to 180°

$a + b + c = 180°$ (Angles on a _____ add up to 180°)
$a = d$ (Alternate angles are _____)
$c =$ __ (_____ angles are _____)
So $a + b + c = d + b +$ _
So $d + b + e = 180°$

Challenge Activities

The diagram shows a regular hexagon and a regular octagon that meet at a common point.

Work out the values of x, y and z.



Knowledge Organisers : Year 8 HT5

P1 Tables and probability

Mathematics

What do I need to be able to do?

Step 1 Probability vocabulary
Step 2 The probability scale
Step 3 Probability of a single event
Step 4 sum of probabilities being equal to 1
Step 5 Probability experiments
Step 6 Sample spaces for 1 or more events
Step 7 Probabilities from sample space diagrams
Step 8 Two-way tables
Step 9 Probabilities from two-way tables
Step 10 Frequency trees
Step 11 Probabilities from frequency trees

Keywords

Probability – A measure of how likely an event is to happen, between 0 (impossible) and 1 (certain).
Event – A specific outcome or set of outcomes in a probability experiment.
Outcome – A possible result of a trial or experiment.
Sample Space – The complete set of all possible outcomes.
Experiment – A situation involving chance, used to observe outcomes.
Relative Frequency – The ratio of the number of times an event occurs to the total number of trials.
Two-Way Table – A table that displays data for two categories and helps calculate probabilities.
Frequency Tree – A diagram showing how often outcomes occur at each stage of a process.
Complementary Events – Two events that together cover all possibilities; their probabilities add up to 1.
Probability Scale – A visual scale from 0 to 1 used to show how likely events are.

Probability of a single event

Probability = number of times event happens

P(Blue) = $\frac{4}{10}$ ← There are 4 blue sectors; There are 10 sectors overall

= $\frac{2}{5}$

Probability notation P (event)

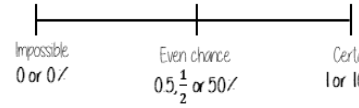
Probability can be a fraction, decimal or percentage value

$\frac{4}{10}$ = $\frac{40}{100}$ = 0.40 = 40%

total number of possible outcomes

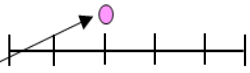
Probability is always a value between 0 and 1

The probability scale



The more likely an event the further up the probability it will be in comparison to another event (It will have a probability closer to 1)

There are 2 pink and 2 yellow balls, so they have the same probability



There are 5 possible outcomes
So 5 intervals on this scale, each interval value is $\frac{1}{5}$

Sum of probabilities

Probability is always a value between 0 and 1

The probability of getting a blue ball is $\frac{1}{5}$
∴The probability of **NOT** getting a blue ball is $\frac{4}{5}$

The sum of the probabilities is 1

The table shows the probability of selecting a type of chocolate

Dark	Milk	White
0.15	0.35	

P(white chocolate) = 1 – 0.15 – 0.35
= 0.5

Construct sample space diagrams

Sample space diagrams provide a systematic way to display outcomes from events

The possible outcomes from rolling a dice

The possible outcomes from tossing a coin

	1	2	3	4	5	6
H	1,H	2,H	3,H	4,H	5,H	6,H
T	1,T	2,T	3,T	4,T	5,T	6,T

This is the set notation to list the outcomes S =

In between the { } are a; the possible outcomes

S = { 1H, 2H, 3H, 4H, 5H, 6H, 1T, 2T, 3T, 4T, 5T, 6T}

Probability from sample space

The possible outcomes from rolling a dice

The possible outcomes from tossing a coin

	1	2	3	4	5	6
H	1,H	2,H	3,H	4,H	5,H	6,H
T	1,T	(2,T)	3,T	(4,T)	5,T	(6,T)

What is the probability that an outcome has an even number and a tails?

This is the set notation that represents the question P

P (Even number and Tails) = $\frac{3}{12}$

There are three even numbers with tails

There are twelve possible outcomes

Numerator: the event

Denominator: the total number of outcomes

In between the ( ) is the event asked for

	Car	Bus	Walk	Total
Boys	15	24	14	53
Girls	6	20	21	47
Total	21	44	35	100

The total number of items

Probability from two-way tables

P (Girl walk to school) = $\frac{21}{100}$ ← The event

The total in the set

Product Rule

The number of items in event a **X** The number of items in event b

Knowledge Organisers : Year 8 HT5
P1 Tables and probability

Mathematics

P1 - TABLES AND PROBABILITY

Retrieval Practice

1) Work out the missing values in the two-way table.

	Left-handed	Right-handed	Total
Girls	25	160	185
Boys	85		205
Total		280	

2) The table shows the ages of people in a golf club.

Age	18 – 29	30 – 49	50 – 69	70 +
Number of people	28	47	59	82

How many people are aged 50 or over?

3) $y = 5x$. Find y when $x = 40$

4) Work out the square of 16

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

Probability vocabulary – M655
The probability scale – M655, M938
Probability of a single event – M941, M938U
se the sum of probabilities being equal to 1 – M755
Probability experiments – U580, U166
Sample spaces for 1 or more events – M718, U104
Probabilities from sample space diagrams – M718, U104
Two-way tables – M899, U981
Probabilities from two-way tables – U981, U246
Frequency trees – U280
Probabilities from frequency trees – U280

Career Focus - Where could this take you?

I need to be able to read tables so I can build to specification

Topic Links

This topic links to:
- Listing outcomes, fractions.

Additional Resources

Corbettmaths

To further practise and develop your knowledge see:
- Videos: 245, 246, 319, 380

Self quizzing

Continue completing the table for rolling two regular dice and adding the numbers together.

+	1	2	3	4	5	6
1	2	3				7
2						
3						
4						
5						
6						

Work out,
- P(total is even)
- P(6 or 7)
- P(Number>4)
- P(0)
- P(prime number)
- P(square number)

These probabilities should be out of 36 as that's the total.

Challenge Activities

In a group of 45 people, 15 belong to a cricket club, 18 belong to a tennis club and 9 belong to both a cricket and a tennis club.
Draw a Venn diagram to represent this information.
A person is chosen at random from this group.
Find the probability that this person:
- belongs to a cricket and a tennis club
- belongs to a cricket or tennis club
- does not belong to a cricket club
- does not belong to either a cricket or a tennis club
- belongs to a tennis club but not a cricket club.

Mathematics

Year 8 HALF TERM 6:

G6 Circle

In this chapter, students are introduced to the key vocabulary and concepts related to circles, building towards calculating perimeter and area in both simple and compound shapes. The chapter begins with learning and using circle vocabulary accurately, including terms such as radius, diameter, chord, arc, sector, and tangent. Students then explore the concept of π (pi) as a ratio between a circle's circumference and diameter, deepening their understanding of this important mathematical constant. Using this knowledge, they learn to calculate the circumference of a circle, and then extend this to find the perimeter of parts of a circle, such as arcs and sectors. The focus then moves to the area of a circle, with students applying the formula and using reasoning to solve increasingly complex problems. They build on this by calculating the area of sectors, linking concepts of proportion and angle. Finally, students combine their skills to calculate both area and circumference and apply them in the context of compound shapes involving circles. Through these applications, they gain confidence in tackling real-world problems that require precision, reasoning, and multiple steps

S4 Graphs and charts

In this chapter, students explore how to represent data using a range of graphs and charts. It begins with pictograms and bar charts, reinforcing clear labelling and appropriate use of scales. Students then learn to use vertical line charts to display discrete data. They move on to drawing and interpreting pie charts, developing skills in working with proportions and recognising patterns. Line graphs are introduced to show trends in continuous data over time. Students learn to choose the most appropriate type of graph or chart based on the data and context, and to compare distributions using visual representations. The chapter ends with an important focus on identifying misleading graphs and understanding how poor design can affect interpretation. This work strengthens students' ability to communicate data effectively and critically assess the accuracy of graphical information.

A8 Sequences

In this chapter, students explore how sequences are formed, described, and represented using both words and algebra. The chapter begins with generating and describing terms in a sequence given a rule in words, helping students recognise patterns and understand how sequences progress. They then move on to generating sequences from simple algebraic rules, laying the foundation for understanding the structure and formation of number patterns. Students are introduced to the nth term of a linear sequence, learning how to describe and predict any term in a sequence using algebra. Finally, students tackle more advanced examples by generating sequences from complex algebraic rules, supporting the development of algebraic fluency and reasoning. This work prepares students for future topics involving functions and more complex patterns.

Knowledge Organisers : Year 8 HT6
G6 Circle
Mathematics

What do I need to be able to do?

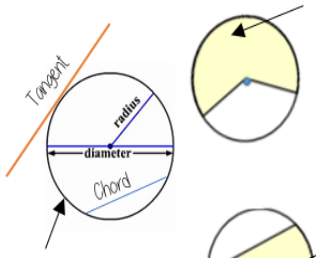
Step 1 Circle vocabulary
Step 2 Pi as a ratio
Step 3 Circumference of a circle
Step 4 Perimeter of parts of a circle
Step 5 Area of a circle
Step 6 Area of parts of a circle
Step 7 Area and circumference of a circle
Step 8 Perimeter of compound shapes with circles
Step 9 Perimeter and area of compound shapes with circles

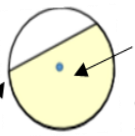
Keywords

Radius – The distance from the centre of a circle to any point on its edge.
Diameter – A straight line passing through the centre of a circle, touching both sides; twice the radius.
Circumference – The distance around the edge of a circle.
Pi (π) – A special number (approximately 3.14159) representing the ratio of a circle's circumference to its diameter.
Arc – A part of the circumference of a circle.
Sector – A 'slice' of a circle, like a piece of pie.
Area of a Circle – The space inside a circle, calculated using πr^2 or πr^2.
Perimeter – The total distance around a shape, including curved and straight edges.
Compound Shape – A shape made from two or more simple shapes, such as rectangles and circles.
Segment – A part of a circle separated by a chord (a straight line between two points on the circle).

Parts of a circle

Sector (part of the circle made from two radii)





Segment (part of the circle made from a chord)

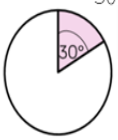
An arc is a part of the circumference

Fractional parts of a circle

A circle is made up of 360°

Formula to remember:
Area of a circle = πr^2
Circumference of a circle = πd or $2\pi r$

30° represents $\frac{30}{360}$ of a full circle



$\frac{30}{360} = \frac{1}{12}$

The fraction of the circle is as $\frac{\theta}{360}$

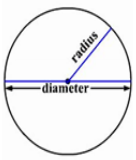
θ represents the degrees in the sector

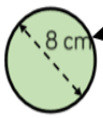
$\frac{270}{360}$ of a full circle (in degrees)
$\frac{6}{8}$ of a full circle (in equal parts)
$\frac{3}{4}$ of a full circle

Area of a circle (Non-Calculator)

Read the question – leave in terms of π or if $\pi \approx 3$ (provides an estimate for answers)

Area of a circle
$\pi \times \text{radius}^2$





Diameter = 8cm
∴ Radius = 4cm

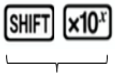
$\pi \times \text{radius}^2$
$= \pi \times 4^2$
$= \pi \times 16$
$= 16\pi \text{ cm}^2$

Find the area of one quarter of the circle

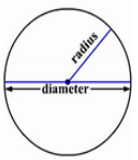
Radius = 4cm

Circle Area = 16π cm²
Quarter = 4π cm²

Area of a circle (Calculator)



Area of a circle
$\pi \times \text{radius}^2$



How to get π symbol on the calculator

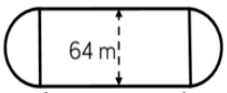
It is important to round your answer suitably – to significant figures or decimal places. This will give you a decimal solution that will go on forever!

Compound shapes including circles

Circumference
$\pi \times$ diameter

Compound shapes are not always area questions.
For Perimeter you will need to use the circumference

Spotting diameters and radii



This dimension is also the diameter of the semi circles.

Arc lengths = $\pi \times 64$
$= 64\pi$

Don't need to halve this because there are 2 ends which make the whole circle

Arc lengths + Straight lengths = total perimeter

$= 64\pi + 150 + 150$
$= (300 + 64\pi)$ m
OR = 501.1 m

Still remember to split up the compound shape into smaller more manageable individual shapes first

Knowledge Organisers : Year 8 HT6
G6 Circle

Mathematics

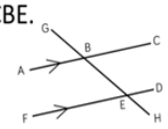
G6 - CIRCLES

Retrieval Practice

1) What is the size of the angle made when two perpendicular lines intersect?

2) Find the sum of the interior angles of an octagon.

3) Name the angle alternate to ∠CBE.



4) Estimate the answer to 826 × 19.7

Vocabulary check: Circumference

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

Circle vocabulary – M595, U767
Circumference of a circle – M169, U604
Perimeter of parts of a circle – U221
Area of a circle – M231, U950
Area of parts of a circle – U373
Area and circumference of a circle – M169, M231, U604, U950
Perimeter of compound shapes with circles – U604, U221
Perimeter and area of compound shapes with circles – U604, U221, U373, U950

Career Focus - Where could this take you?

I am an architect who builds design plans for offices, buildings and homes. My key responsibilities include using the client's preferences, needs and ideas to create well-designed structures, providing clients with cost estimates, designing construction plans using specifications and scaled drawings

Topic Link

This topic links to: Properties of shapes, Recognise types of 2D shapes, substitution, order of operations

Additional Resources

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

Anagrams

e c n e r e f m u c r i c

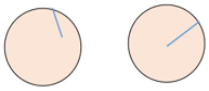
u i s d a r

c e t s o r

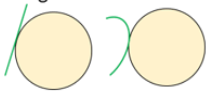
Self quizzing

Give reasons for why each diagram is/is not an example of the keyword.

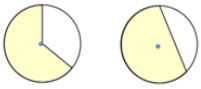
Radius



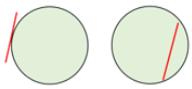
Tangent



Sector

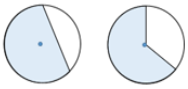


Chord



Arc

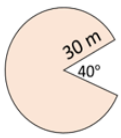
Segment



Challenge Activities

Explain each term of the following calculation to find the perimeter of this shape.

$$\frac{320}{360} \times 2\pi \times 30 + 30 + 30$$



Calculate the answer to 1 decimal place.

Knowledge Organisers : Year 8 HT6
S4 Graphs and charts

Mathematics

What do I need to be able to do?

Step 1 Pictograms and bar charts
Step 2 Vertical line charts
Step 3 Draw pie charts
Step 4 Interpret pie charts
Step 5 Line graphs
Step 6 Choose the most appropriate graph or chart
Step 7 Compare distributions using graphs
Step 8 Misleading graphs and charts

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)
Spread: the distance/ how spread out/ variation of data
Average: a measure of central tendency – or the typical value of all the data together
Proportion: numerical relationship that compares two things

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?

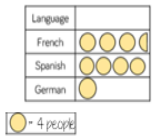
Zero option → ☐ £0 ☐ £0.01 - £2 ☐ £2.01 - £4 ☐ more than £4 ← More option

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

Pictograms, bar and line charts

Represents quantitative data

Pictogram

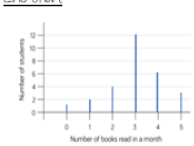


- Need to remember a key
- Visually able to identify mode

Bar Chart

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

Line Chart



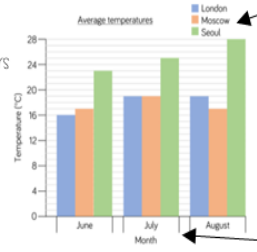
- Gaps between the lines
- Clearly labelled axes
- Scale for the axes
- Discrete Data

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

Draw and interpret Pie Charts

Remember a circle has 360°

Type of pet	Dog	Cat	Hamster
Frequency	32	25	3

There were 60 people asked in this survey (Total frequency)

$\frac{32}{60}$ "32 out of 60 people had a dog"

This fraction of the 360 degrees represents dogs

$\frac{32}{60} \times 360 = 192°$

Use a protractor to draw This is 192°

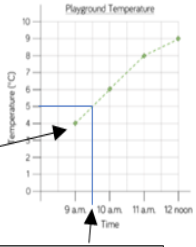
Multiple method
0s 60 goes into 360 – 6 times
Each frequency can be multiplied by 6 to find the degrees (proportion of 360)

Represents quantitative, discrete data

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

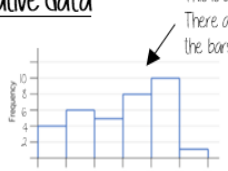
It is possible to make estimates from the line e.g. temperature at 9.30am is 5°C

Grouped quantitative data

Time (minutes)	Frequency
$0 \leq t < 5$	4
$5 \leq t < 10$	6
$10 \leq t < 15$	7
$15 \leq t < 20$	8
$20 \leq t < 25$	10
$25 \leq t < 30$	1

"More than or equal to 25 and less than 30 minutes"

This is a frequency diagram There are no gaps between the bars



The use of inequalities shows that this will be a frequency diagram

Grouping the data is useful if there is a large spread of data to begin with

Find and interpret the range

Difference between the biggest and smallest values

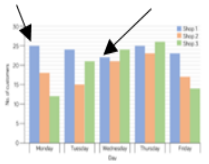
The range is a measure of **spread**

A smaller range means there is less variation in the results – it is more consistent data

A range of 0 means all the data is the same value

Shop 1 highest value

Shop 1 lowest value



Shop 1 has the smallest range – this indicates it has a more consistent flow of customers each week

Range of customers = 25 – 22 = 3 (Shop 1)

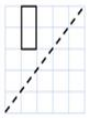
Knowledge Organisers : Year 8 HT6
S4 Graphs and charts

Mathematics

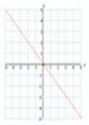
S4 - GRAPHS AND CHARTS

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

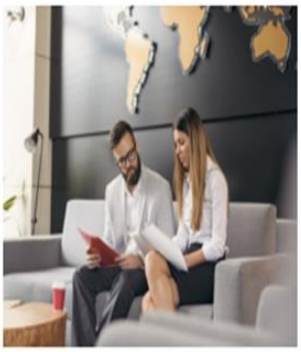
Codes for related Independent Learning tasks on SPARX maths:

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

Pictograms and bar charts – M644, M460, M738
Vertical line charts – M140, M183
Draw pie charts – M574
Interpret pie charts – M165
Line graphs – M140, M183
Choose the most appropriate graph or chart – M440
Compare distributions using graphs – U507, U520

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

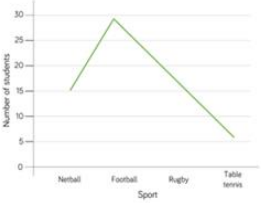
This topic links to:
Solve problems with line charts and bar charts, construct and interpret pie charts

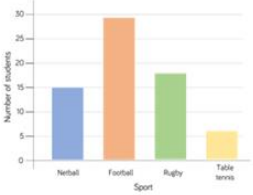
Additional Resources

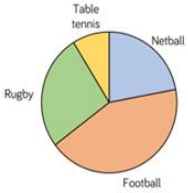
To further practice and develop your knowledge see Sparx clips above or https://corbettmaths.com/contents/

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 8 HT6
A8 Sequences

Mathematics

What do I need to be able to do?

Step 1 Generate and describe a sequence given a rule in words

Step 2 Generate a sequence given a simple algebraic rule

Step 3 nth term of a linear sequence

Step 4 Generate a sequence given a complex algebraic rule (E)

Keywords

Sequence: items or numbers put in a pre-decided order

Term: a single number or variable

Position: the place something is located

Linear: the difference between terms increases or decreases (+ or -) by a constant value each time

Non-linear: the difference between terms increases or decreases in different amounts, or by x or ÷

Difference: the gap between two terms

Arithmetic: a sequence where the difference between the terms is constant

Geometric: a sequence where each term is found by multiplying the previous one by a fixed non zero number

Linear and Non Linear Sequences

Linear Sequences – increase by addition or subtraction and the same amount each time

Non-linear Sequences – do not increase by a constant amount – quadratic, geometric and Fibonacci

- Do not plot as straight lines when modelled graphically
- The differences between terms can be found by addition, subtraction, multiplication or division

Fibonacci Sequence – look out for this type of sequence

0 1 1 2 3 5 8 ...

Each term is the sum of the previous two terms

Sequences from algebraic rules

This is substitution!

$3n + 7$ — This will be linear - note the single power of n. The values increase at a constant rate

$3n^2 + 7$ — This is not linear as there is a power for n

$2n - 5$ → Substitute the number of the term you are looking for in place of 'n'

eg

1st term = $2(1) - 5 = -3$

2nd term = $2(2) - 5 = -1$

100th term = $2(100) - 5 = 195$

Checking for a term in a sequence

Form an equation

Is 201 in the sequence $3n - 4$?

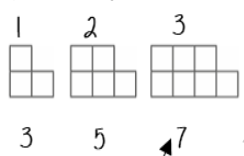
$3n - 4 = 201$ ← Term to check

Algebraic rule

Solving this will find the position of the term in the sequence. ONLY an integer solution can be in the sequence.

Sequence in a table and graphically

Position: the place in the sequence



"The term in position 3 has 7 squares"

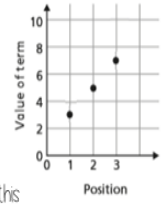
Term: the number or variable (the number of squares in each image)

In a table

Position	1	2	3
Term	3	5	7

+2 +2

Graphically



Because the terms increase by the same addition each time this is **linear** – as seen in the graph

Complex algebraic rules

Misconceptions and comparisons

$2n^2$ — 2 times whatever n squared is

eg

1st term = $2 \times 1^2 = 2$

2nd term = $2 \times 2^2 = 8$

100th term = $2 \times 100^2 = 2000$

$(2n)^2$ — 2 times n then square the answer

eg

1st term = $(2 \times 1)^2 = 4$

2nd term = $(2 \times 2)^2 = 16$

100th term = $(2 \times 100)^2 = 40000$

$n(n + 5)$

eg

1st term = $1(1 + 5) = 6$

2nd term = $2(2 + 5) = 14$

100th term = $100(100 + 5) = 10500$

You don't need to expand the expression

Finding the algebraic rule

This is the 4 times table → 4, 8, 12, 16, 20....

$4n$

7, 11, 15, 19, 22 ← This has the same constant difference – but is 3 more than the original sequence

$4n + 3$

This is the constant difference between the terms in the sequence

$4n + 3$

This is the comparison (difference) between the original and new sequence

Knowledge Organisers : Year 8 HT6
A8 Sequences

Mathematics

A8 - SEQUENCES

Retrieval Practice

1) Which is an expression?

$12 = a + b$ $\quad v = u + at$ $\quad 3n + 7$

2) Solve the equation $12 = 4(x - 1)$

3) List the possible outcomes when three coins are flipped.

4) Share £300 in the ratio 1 : 2 : 3

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

Generate and describe a sequence given a rule in words – M381, M241
Generate a sequence given a simple algebraic rule – M166, M991
nth term of a linear sequence – M991, U498
Generate a sequence given a complex algebraic rule (E) – U530, U958

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:

- Adding, Subtracting, Science and Multiplication.

Additional Resources

To further practice and develop your knowledge see:
https://corbettmaths.com/contents/
Number: 286-290

Self quizzing

Match these sequences and rules, working out the missing number.

Sequence A 6, 10, 14, 18...	$4n - 2$
Sequence B 1, 5, 9, 13...	$4n + 2$
Sequence C 9, 13, 17, 13...	$4n + 5$
Sequence D 2, 6, 10, 14...	$4n -$ ___

Challenge Activities

The rule for the number of sticks needed to make the n^{th} triangle in this pattern is $2n + 1$

Why does the number of sticks go up two each time you add a triangle? Why is there a "+1" in the rule?

MFL: Y8 Term 3

French Knowledge Organiser : Year 8 Topic 4

Relationships

Personality Traits

Adorable	- adorable
amusant(e)	- funny
embêtant(e)	- annoying
drôle	- funny
gentil(le)	- nice
intelligent(e)	- intelligent
paresseux/paresseuse	- lazy
patient(e)	- patient
sympa	- kind
bavard(e)	- chatty
responsable	- responsible
travailleur/travailleuse	- hard-working
sensible	- sensitive
fort(e)	- strong
méchant(e)	- mean/naughty

Relationships

se dire tout	- to tell each other everything
se dire des secrets	- to tell each other secrets
se disputer	- to argue
s'entendre	- to get on
s'entendre bien (avec)	- to get on well with
respecter	- to respect
dépendre de	- to depend on
aider	- to help
critiquer	- to criticise
encourager	- to encourage

Daily Routine

se lever	- to get up
je me lève	- I get up
se laver	- to get washed
se changer	- to get changed
prendre le petit déjeuner	- to have breakfast
arriver au collège	- to arrive at school
rentrer à la maison	- to return home
faire les devoirs	- to do homework
dîner	- to have dinner
se coucher	- to go to bed
sortir (je sors)	- to go out (I go out)

Clothes

porter	- to wear
un manteau	- a coat
un chapeau	- a hat
un pantalon	- trousers
des baskets	- trainers
un pull	- a jumper
des chaussures	- shoes
une jupe	- a skirt
un tee-shirt	- a t-shirt
une chemise	- a shirt

Opinions on Clothes

beau/belle	- beautiful
cool	- cool
long/longue	- long
court(e)	- short
spécial(e)	- special
sportif/sportive	- sporty
practique	- practical
inutile	- useless
à la mode	- fashionable
traditionnel(le)	- traditional

GRAMMAR

Past Tense:

1. avoir
2. 'er' -> é

Example: regarder (to watch) -> **j'ai** regard**é**

Irregular Past Tense:

faire – j'ai **fait**
lire – j'ai **lu**
aller – **je suis allé(e)**
boire – j'ai **bu**

Vouloir - conditional

Je voudrais
Tu voudrais
Il voudrait
Nous voudrions
Vous voudriez
Ils voudraient

Family Members

mon grand-père	- my grandfather
ma grand-mère	- my grandmother
mon père	- my father
ma mère	- my mother
ma tante	- my aunt
mon oncle	- my uncle
ma soeur	- my sister
mon frère	- my brother
mon cousin	- my male cousin
ma cousine	- my female cousin
ma demi-soeur	- my half sister
mon demi-frère	- my half brother
mes parents	- my parents
mes grands-parents	- my grandparents

In the Future

à l'avenir	- in the future
avoir [deux] enfants	- have [two] children
se marier	- to get married
voir le monde	- to see the world
travailler	- to work
avoir une grande famille	- to have a big family
être riche	- to be rich
étudier à l'université	- to study at university
être indépendant(e)	- to be independent
acheter une grande maison	- to buy a big house

Colours

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

In the House

la chambre	- bedroom
la chambre d'amis	- guest room
la cuisine	- kitchen
la salle à manger	- dining room
la salle de jeux	- games room
la salle de bains	- bathroom
la salle de séjour/le salon	- living room
les toilettes	- toilet
le bureau	- office
le jardin	- garden

Past Tense Time Phrases

Hier	- yesterday
hier soir	- last night/yesterday evening
lundi dernier	- last Monday
la semaine dernière	- last week
le mois dernier	- last month
le week-end dernier	- last weekend
l'été dernier	- last summer
avant-hier	- the day before yesterday
l'année dernière	- last year
il y a [cinq] jours	- [five] days ago

House Rules

il (ne) faut (pas)	- you must (not)
être calme	- to be calm
manger ensemble	- to eat together
écouter de la musique forte	- to listen to loud music
fumer	- to smoke
mentir	- to lie
faire les tâches ménagères	- to do house chores
ranger la chambre	- to tidy the bedroom
utiliser le portable à la table	- to use phones at the table
courir	- to run
se batter	- to fight

German Knowledge Organiser : Year 8 Topic 4

Relationships

Personality

alt	- old
jung	- young
stark	- strong
schön	- beautiful
sportlich	- sporty
hässlich	- ugly
laut	- loud
faul	- lazy
lieb	- kind
nett	- nice
verrückt	- crazy
geduldig	- patient
ungeduldig	- impatient
gemein	- mean
frech	- cheeky

Relationships

sich verstehen	- to get along
ich verstehe mich gut mit	- I get along well with
Ich verstehe mich nicht gut mit	- I don't get along well with
Wir verstehen uns gut	- we get along well
Wir verstehen uns nicht gut	- we don't get on well
Ich streite mich mit	- I argue with
Wir streiten uns	- we argue
sich streiten	- to argue

Future Plans

ich werde	- I will
ich möchte	- I would like
Kinder haben	- to have children
ein Haus kaufen	- to buy a house
ein Auto kaufen	- to buy a car
heiraten	- to marry
]Medizin] studieren studiern	- to study [Medicine]
in [Leeds] wohnen	- to live in [Leeds]
um ide Welt reisen	- to travel around the world
einen guten Job haben	- to have a good job

Daily Routine

sich anziehen	- to get dressed
sich duschen	- to have a shower
sich entspannen	- to relax
die Hausaufgaben machen	- to do homework
ins Bett gehen	- to go to bed
lernen	- to revise
fernsehen	- to watch TV
frühstücken	- to have breakfast
Abendessen essen	- to eat dinner
zur Schule gehen	- to go to school

Past Tense Time Phrases

gestern	- yesterday
am Wochenende	- on the weekend
vorgestern	- the day before yesterday
letzte Woche	- last week
letztes Wochenende	- last weekend
neulich	- recently
vor [zwei] Tagen	- [two] days ago
letzten Monat	- last month

Past Opinions

Meiner Meinung nach war es	- In my opinion it was
Ich glaubte, es war	- I believe, it was
Ich fand es	- I found it
eine Zeitverschwendung	- a waste of time
eine Geldverschwendung	- a waste of money
großartig	- amazing
nervig	- annoying
klasse	- super
am besten	- the best
anstrengend	- tiring
furchtbar	- terrible
unvergesslich	- unforgettable

Activities with Family

ein Instrument üben	- to practise an instrument
Karten spielen	- to play cards
einen Film sehen	- to watch a film
im Schwimmbad schwimmen	- to swim in the pool
im Restaurant essen	- to eat at a restaurant
Sport machen	- to do sports
die Museen besuchen	- to visit museums
einkaufen gehen	- to go shopping
fernsehen	- to watch TV
zusammen reden	- to talk together

Future Tense Time Phrases

morgen	- tomorrow
am Wochenende	- at the weekend
übermorgen	- the day after tomorrow
nächste Woche	- next week
nächstes Wochenende	- next weekend
nächsten Monat	- next month
später	- later
in [zwei] Jahren	- in [two] years

Music: Y8 Term 3

Knowledge Organiser: Year 8 Music

Computer and Video Game Music

Early Computer and Video Game Music

SOUND EFFECTS (an artificially created sound used to emphasise certain actions within games),
8-BIT MUSIC (a style of electronic music which used simple melodies made sound chips in vintage computers, consoles and arcade machines) **SYNTHESISER** technology.
SAMPLING (digitally encoding music or sound and reusing it as part of a composition or recording) began in the 1980's allowing sound to be played during the game, making it more realistic and less "synthetic-sounding".

Key musical elements

TEXTURE- how sound is layered:
POLYPHONIC many layers playing at different times
HOMOPHONIC layers moving at the same time
PITCH – The highness or lowness of musical note.
TEMPO- the speed of music (largo-slow, andante- walking pace, allegro-fast)
DYNAMICS- volume of music (piano- quiet, forte- loud, crescendo- getting louder

How Computer and Video Game Music is Produced

Fully-orchestrated **SOUNDTRACKS** are now popular. The composer uses **MUSIC TECHNOLOGY** to create the score, it is then played by an **ORCHESTRA** and then digitally converted and integrated into the game. It sounds **CINEMATIC**. Video game **SOUNDTRACKS** have become popular and are now commercially sold and performed in concert with some radio stations featuring entire shows dedicated to video game music.

How Computer and Video Game Music is used within a Game

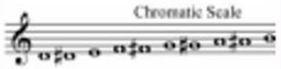
CUES- knowing when a significant event was about to occur.
Video game music is often heard over a game's title screen, options menu and bonus content as well as during the entire gameplay.
SET THE SCENE- to bring out feelings such as suspense, joy, sadness, or excitement.
INCREASE TENSION AND SUSPENSE *e.g. during battles and chases*, when the player must make a decision within the game.
ENHAMCES FOCUS: For some players, music can help block out distractions and improve concentration, especially in repetitive or less complex games.

Musical Features of Computer and Video Game Music

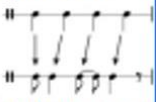
JUMPING BASS LINE
Where the bass line often moves by **LEAP** (**DISJUNCT MOVEMENT**) leaving 'gaps' between notes

STACCATO ARTICULATION
Performing each note sharply and detached from the others. Shown by a dot.

CHROMATIC MOVEMENT
Melodies and bass lines that ascend or descend by semitones.



SYNCOPATION
Accenting the weaker



beats of the bar to give an "offbeat" jumpy feel to the music.

Character Themes in Computer and Video Game Music

Characters within a video game can also have their own **CHARACTER THEMES** or **CHARACTER MOTIFS.** These can be manipulated, altered and changed – adapting the elements of music – **ORCHESTRATION** (the act of arranging a piece of music for an orchestra and assigning parts to the different musical instruments), **TIMBRE, SONORITY, TEXTURE, PITCH, TEMPO, DYNAMICS** – depending on the character's situation or different places they travel to within the game.

PE: Y8 Term 3

PE Knowledge Organiser: Y8 – Athletics Overview

What is Athletics?

- Athletics is a collection of sporting events across a number of disciplines, including running, jumping and throwing events.
- Athletics is a collection of sporting events that consist of three main areas:
- track events
- field events
- combined events
- Athletics is often associated with the Olympics. However, it is not just for elite athletes. Each week athletes also compete at national, county, school or club level events which can be held indoors or outdoors.
- Athletics events are very specialised and often do not require a full combination of fitness

Key Terms/Vocabulary

- High Jump
- 100m
- 200m
- 800m
- 1500m
- 4x100m relay
- Shot Putt
- Discus
- Long Jump
- Run Up
- Reaction Time
- Arm Swing
- Chin, Knee, Toe
- Clean Palm, Dirty Neck
- Communication
- Baton
- Approach
- Rotation
- Take off
- Flight
- Landing
- Stance
- Grip
- Preparation
- Movement
- Release
- Recovery
- Hips to Lips
- Fosbury Slop
- Scissor Kick

Scoring

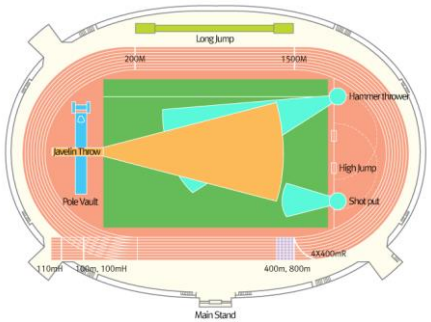
Scoring Success in athletics is not judged on points or goals, but rather on times and distance.

- **Track events**– these races are started with an electronic pistol which is only sounded again on a false start. In races that are very close, officials use a digital line-scan camera across the finish line to give them a photo finish picture. The clock stops when an athlete has passed through the finish line.
- **Jumping events**– these events are measured from the front edge of the take-off board to the first mark made in the sand by the athlete. The distance is always measured to the nearest centimetre and athletes will always be given a minimum of three jumps.
- **Throwing events**– these events are measured from the front edge of the throwing line to the first mark made in the ground by the implement. The distance is always measured to the nearest centimetre and athletes will always be given a minimum of three attempts

Officials

An athletics competition requires a large number of volunteers each day. These include:

- Starter – this person starts all track events
- Starter's marshals – these people line up competitors in correct order ready for starting
- Timekeepers – these volunteers provide official times for all track competitors
- Place judges – these helpers ensure the correct order of positions are given
- Field event judges– these judges measure, record and let athletes know when it is safe to compete
- Relay judges– these make sure runners at change overs are in the correct lane and within the changeover box



Health and safety in Athletics:

Throwing events:

- Keep well away from a person throwing.
- Stand in the safety zone when your partner is attempting a throw
- Wait until everyone has thrown collect your equipment.
- Do not walk past a person who has throwing equipment in their hand.

Running events:

- Ensure the track is fully clear before running
- Ensure that shoe laces are ALWAYS tied before running

General Safety:

- Ensure that all Jewellery is removed before performing any event.
- Ensure that correct kit is always worn – including the correct footwear. Ensure you are always warmed up before participating in any athletics activities

Key Skills – Links to components of fitness

- **Speed-** Especially for running events e.g. 100m/200m/400m sprints and hurdles.
- **Cardiovascular endurance** –Especially for long distance activities e.g. 1500m. Strength – For throwing and jumping events.
- **Co-ordination**– To be able to move different body parts in different events/ to be able to aim a throw in a certain direction
- **Power**– To be able to put in power behind throwing events/excelling of the ground.
- **Muscular endurance** – for all events to allow the muscles to keep working during an event to avoid them getting fatigued.

PE Knowledge Organiser: Y8 – Athletics Events

Sprints – 100m

Key Teaching Points (KTP's)

- Drive arms and legs (hips to lips)
- Start low and slowly rise up to roughly 30m mark
- Lunge/dip towards finish line (chest crossing line is key point)

What is the men's and women's world record?

Men's World Record – Usain Bolt – 9.58 seconds

Women's World Record – Florence Griffith-Joyner – 10.49 seconds

Shot Putt – Side on throw

Key Teaching Points (KTP's)

- Side on stance with feet shoulder width apart – non throwing shoulder pointing towards the target
- Push shot rather than throw it
- Rotate hips and shoulders during the throw, finishing with chest facing the target

What is the men's and women's world record?

Men's World Record – Ryan Crouser – 23.56 metres

Women's World Record – Ilona Slupianek – 22.45 metres

Middle Distance/Pacing (800m/1500m)

Key Teaching Points (KTP's)

- Begin at a steady pace that you can maintain
- Try to keep a consistent pace with even strides through the middle section of the race
- Finish strong, the final 200m-300m increase your speed up a sprint

What is the men's and women's world record?

Men's World Record – David Rusdisha 1:40.91 (minutes/seconds)

Women's World Record – Nadezhda Olizarenko – 1:53.43 (minutes/seconds)

4x100m Relay

Key Teaching Points (KTP's)

- Baton should be held at the bottom
- Baton starts in right hand then passed to left hand of 2nd runner, right hand of 3rd runner then left hand of 4th runner
- Outgoing runner starts when incoming runner reaches the check mark

What is the men's and women's world record?

Men's World Record – Jamacia – 36.84 seconds

Women's World Record – USA – 40.82 seconds

Discus – ½ rotation throw

Key Teaching Points (KTP's)

- Stand side-on, feet shoulder width apart with the discus flat in the palm of the throwing hand
- Turn the hips and shoulder rotating through half a turn – keep the discus arm long and wide to build momentum
- Release the discus out in front at shoulder hight with a smooth flick of the wrist.

What is the men's and women's world record?

Men's World Record – Mykolas Alekna – 74.35 metres

Women's World Record – Gabriele Reinsch – 76.8 metres

High Jump – Fosbury Flop technique

Key Teaching Points (KTP's)

- Curved run up (take off leg next to the bar)
- Plant the take-off foot firmly, drive the opposite knee and arms up and push explosively up
- Turn your back to the bar as you push up off the floor, lift your hips high then bring your head, shoulders, legs and feet over the bar.

What is the men's and women's world record?

Men's World Record – Javier Sotomayor – 2.45 metres

Women's World Record – Stefka Kostadinova – 2.09 metres

Long Jump – Run up and Take off

Key Teaching Points (KTP's)

- Build speed during run up, staying tall with eyes looking forward
- Use a consistent number of strides so you hit the board accurately
- Swing both arms and legs up after the take off to create lift when moving into the jump

What is the men's and women's world record?

Men's World Record – Mike Powell – 8.95 metres

Women's World Record – Galina Chistyakova – 7.52m

PE Knowledge Organiser: Y8 – Cricket Overview

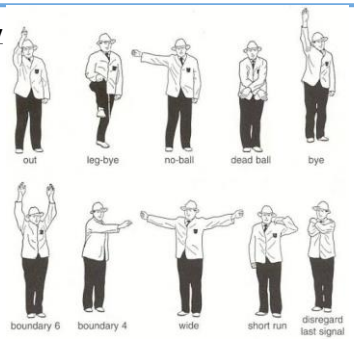
Which ways can a batsman be given out?

A batter is declared out if

- The bowler knocks off the bails of the stumps with a delivery.
- A fielder or wicketkeeper catches the ball directly off the bat and before it hits the ground.
- The umpire believes that the bowler's ball would have hit the stumps if the batter had not obstructed the ball with their pads. This is known as leg before wicket (or LBW).
- They are going for a run but do not make the batting crease before fielding team knocks off the cricket stumps.
- The wicketkeeper stumps them.
- They knock over their stumps while playing a shot or avoiding a delivery.
- The umpire believes the batter has purposely obstructed a fielder who is about to take a catch or attempt a run-out.
- There are other, less common ways of being out in cricket, but these are quite rare such as
  - Timed Out
  - Hit the ball twice
  - Handling the ball

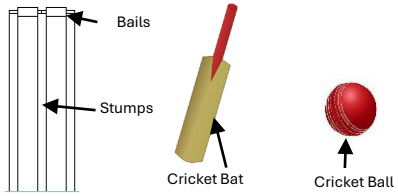
Key Terms/Vocabulary

- Batting
- Bowling
- Fielding
- Catching
- Throwing
- Wicket Keeping
- Wicket
- Crease
- Stumps
- Running between the wickets



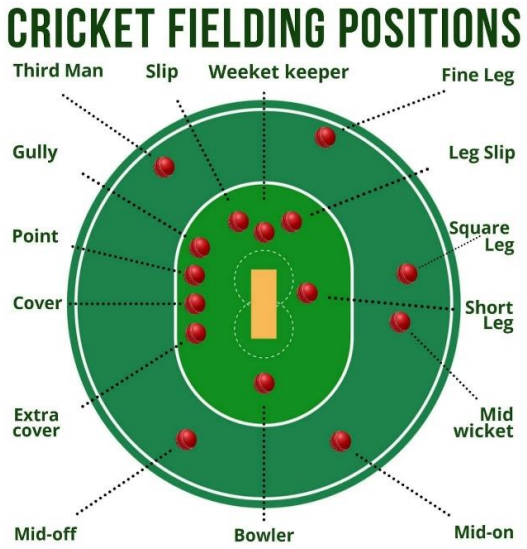
Basic Rules

- The winning team in cricket is the side that scores the most runs, although in some situations a draw is recorded if they both get the same number of runs.
- scores the most runs, although in some situations a draw is recorded if they both get the same number of runs.
- A cricket team consists of 11 players and they take it in turns to bat and bowl.
- The bowler must not throw the ball, but bowl the ball overarm at the stumps, which are at either end of a 22-yard area called a wicket.
- The end of an innings is called when 10 of the 11 batting team are given out or the required amount of overs have been bowled. At this point, both teams swap over.



Scoring System

The aim for the batter in cricket is to try to score as many runs as possible throughout their innings.
To score a run requires the batter to strike the ball and run to the opposite end of the pitch while their batting partner runs in the other direction.
It is also possible to score runs without running the length of the pitch, if a batter can hit the ball past the boundary line (four runs) or over the line without bouncing (six runs).



PE Knowledge Organiser: Y8 – Cricket Techniques

Fielding: Chasing/receiving & throwing at the stumps

Key Teaching Points (KTP's)

- 2 hand pick up (get low to the ground)
- Side on when throwing the ball
- Non-throwing hand pointing towards the target

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

When fielding and you are throwing the ball at the stumps to run the batter out or if you are throwing the ball into the bowler or wicket keeper to run the batter out. The quicker you are at retrieving the ball and the more accurate the throw at the stumps or to the bowler/wicket keeper, the more chance of running the batter out.

Batting: Defensive shots – Positive batting

Key Teaching Points (KTP's)

- Head towards the ball
- Front foot to the pitch of the ball
- Soft hands to prevent ball reaching fielders

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

When the bowler is bowling a number of good balls (on the stumps), the batter needs to find a way to score runs without getting out. This would be when you play defensive shots but try to defend the ball into a gap where a run can be scored.

Batting: On/off drives

Key Teaching Points (KTP's)

- Head towards and over the ball
- Front foot to the pitch of the ball
- Extend hands through the ball to generate power

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

The bowler might be bowling very straight but not pitching the ball in the right area (too full). This means the batter can look to score runs playing straight (reduces the risk of getting out) by playing on/off drives.

Batting: Pull shot

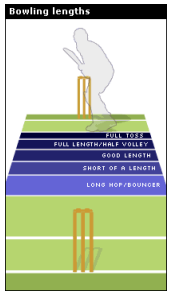
Key Teaching Points (KTP's)

- Head in line with the ball
- Feet move back and across
- Bat path from high to low

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

When the bowler bowls the ball and it pitches too short it will come up to chest/head height on the batter – the pull shot allows runs to be scored from this ball by aiming to hit the ball for 4 or 6. between backward square leg and mid wicket.

Bowling: Line and length



Key Teaching Points (KTP's)

- Straight bowling arm
- Side on towards the batter (weaker shoulder leading towards batter)
- Bowling arm brushing ear

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

Bowling the correct line and length allows the bowler to build pressure on the batter by reducing the number of balls they can score from. If a bowler can bowl a good line and length consistently then the batting team will score less runs collectively.

Bowling: Line & length – bowling to a field

Key Teaching Points (KTP's)

- Run up needs to be in a straight line
- Jump/gather action off dominant leg
- Pull non bowling arm down (like a leaver) to generate pace)
- Follow through action (after the ball has been bowled) to maintain momentum.

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

By controlling where you bowl the ball a field can be set to support this. 6 fielders can be put on the off-side if the bowler can consistently bowl outside off-stump. This can be used tactically to bowl away from the area where the batter scores the majority of their runs.

Wicket Keeping: Receiving ball from seam

Key Teaching Points (KTP's)

- WK stays low for as long as possible
- WK rises with the ball to keep eyes level
- Hands must be together to ensure the ball can be caught

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

When receiving the ball as a wicket keeper from the bowler. The wicket keeper can receive the ball if the batter leaves it or mises the ball or they can catch the ball if the batter hits it. By following the KTP's the wicketkeeper can keep their eyes level with the ball and make sure they are Balanced when catching the ball

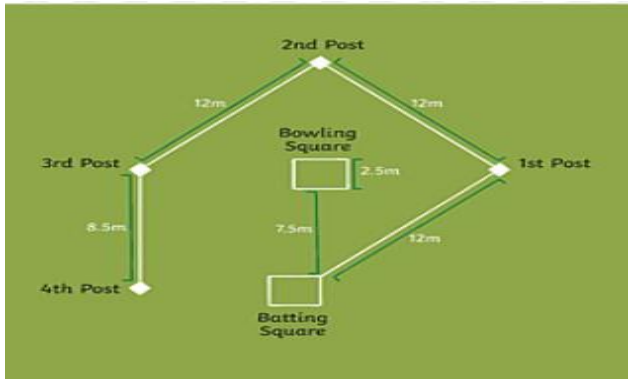
PE Knowledge Organiser: Y8 – Rounders

Which ways can a batsman be given out?

- **Caught:** A fielder catches the ball directly from the bat before it touches the ground.
- **Stumped:** A fielder touches the post the runner is heading to with the ball (or the hand holding the ball).
- **Running Inside:** The runner runs on the inside of the posts rather than the outside.
- **Overtaking:** A runner overtakes another runner on the track.
- **Losing Contact:** The runner loses contact with the post while the bowler has the ball in the square (and the ball is "live").

Key Terms/Vocabulary

•**Backstop:** The "wicket-keeper" of rounders who stands behind the batter.
•**No Ball:** An illegal delivery (too high, too low, wide, or bounces).
•**Long Barrier:** A defensive fielding position used to stop a rolling ball.
•**Follow Through:** The continuation of a throwing or batting motion after release/contact.
•**Stumping:** Touching a post with the ball to get a runner out.



Basic Rules

•**The Teams:** A game is played between two teams of 9 players (substitutes can be used to a maximum of 15).
•**The Objective:** The winning team is the one that scores the most **Rounders** after a set number of innings or a set period of time.
•**The Delivery:** The bowler must bowl a **legal underarm delivery** to the batter. This ball must pass them below the top of the head and above their knee. Not be wide or at the body.
•**Running the Track:** Once the ball is bowled (whether hit or not), the batter must run to at least 1st post. They must stay in contact with the post to be "safe." If contact is lost they should run to the next post. The running area must be left clear by fielders, who can enter this space to retrieve the ball but must get out the way of the runner. The batter must run on their first good ball hit or not.
•**No-Ball Penalty:** If a bowler delivers **2 consecutive no-balls** to the same batter, the batting team is awarded a **1/2 Rounder penalty score**.
•**Dead Ball:** The ball is "dead" when it is returned to the bowler's square. Runners must stop at the post they are at or approaching.
•**Score:** If hit – ½ on 2nd base and 1 rounder on 4th. If not hit – ½ rounder on 4th. Half can be given for instruction or 2 no balls
•**Hit behind:** If the ball is hit behind the line of the front of the batting square the batter can only run to 1st – until the ball crosses this line and back in to play when they can run and still score as normal.

Scoring System

In Rounders, the scoring system rewards both hitting power and tactical running. A batter scores a **full Rounder** if they hit the ball and reach the fourth post in one continuous circuit before the next ball is bowled. If the batter reaches the fourth post but **did not hit the ball**, they are awarded a **half-rounder**. Additionally, a **half-rounder** is scored if the batter hits the ball and successfully reaches the second post before being stumped out. Defensive errors by the fielding team can also result in scores; for example, the batting team receives a **penalty half-rounder** if the bowler delivers two consecutive no-balls to the same batter, or if a fielder obstructs a runner's path on the track. If a game ends in a tie, the team with the fewest number of outs is usually declared the winner.

PE Knowledge Organiser: Y8 – Rounders Techniques

1. Throwing and catching under pressure/ with accuracy

Key Teaching Points (KTP's)

- **Throwing (Advanced):**
  - Create **power from trunk rotation** for longer throws.
  - Choose correct throw (**overarm for distance, underarm for speed/accuracy**).
  - Hit the "**golden triangle**" (between chest and shoulders) when aiming at a teammate.
- **Catching:**
  - Move feet before hands.
  - Use reverse/orthodox cup depending on ball height.
  - Judge flight early ("**read the ball not the thrower**").

When would I need to use this skill?

Throwing the ball back into the game towards bases. Throwing the ball to a base as backstop. Catching team-mates throws.

2. Bowling and Backstop

Key teaching points (KTP's):

- **Bowling:**
  - Ball must travel between knee and head height.
  - Take 2 steps into the throw, start with same foot as arm used.
  - Release near front knee for accuracy.
  - Use controlled rhythm for repeatability.
  - Add **spin/variation** (Y8 progression).

- **Backstop:**
  - Stands behind batter, aligned with bowler and batter.
  - Gives hands as a target for the bowler
  - Catches the ball from bowl or one bounce
  - Retrieve ball quickly if dropped
  - Reads batter's body language before ball is hit and try indicate to team

When would I need to use this skill?

To bowl the ball to opposition, or underarm throw to bases. Retrieve the ball quickly and send it back into the game.

3. Batting: Technique and placement

Key Teaching Points (KTP's)

- **Directional Stance:** Adjust feet and shoulder alignment toward the target gap (Deep 2nd or Deep 4th) before the ball is released.
- **Timing the Swing:** Level bat path to meet the ball at the peak of its bounce for maximum placement control.
- **Extension & Placement:** Fully extend the arm through the ball to generate power into the deep field, "outwitting" the close fielders.
- **Weight Transfer:** Shift weight onto the front foot toward the direction of the hit to keep the ball low and away from the reach of the Bowler/1st Post.

When would I need to use this skill?

By varying the height and speed, you disrupt the batter's timing. A high-arced ball is harder to hit with power than a flat, fast one.

4. Rules of the game: Runner and scoring

Key Teaching Points (KTP's) for Officials

- **Touching the Post:** Ensure physical contact with the post(with hand or bat) to be considered "safe."
- **Running the Track:** Maintaining an efficient line around the outside of the posts to minimize distance.
- **Decision Making:** Identifying when to stay at a post (if the ball is at the next base) versus when to risk a run for arounder.
- **Obstruction Awareness:** Understanding that fielders cannot block the running track and runners cannot impede a fielder's view.

When would I need to use this skill?

When on the batting team – to run whether I hit the ball or not, knowing when to score.

5. Fielding: Ground ball, chasing ball

Key Teaching Points (KTP's)

1. **The Long Barrier:** Knee down to the ground, creating a wall with the leg and hands.
2. **Attack the ball:** Move toward the ball to reduce the runner's time.
3. **The Lunge & Pivot:** Lunge to pick up a moving ball, pivot on the lead foot to face the target.

When would I need to use this skill?

When the ball is hit into space. The quicker you retrieve and return the ball to the "active" post or the bowler, the less chance the batter has of reaching 2nd or 4th post.

6. Fielding: Backing up the bases

Key Teaching Points (KTP's)

- **Anticipation:** As soon as the ball is hit, fielders not directly involved in the primary play must move to a position 2-3 meters behind the "target" post.
- **The Safety Net:** Positioning yourself in a direct line with the thrower and the post-player to catch any balls that are missed or overthrown.

When would I need to use this skill?

When fielding and not on a base. I can move to back up other bases – even as bowler and backstop.

7. Game Play and tactics: Outwit and opponent

Key teaching points (KTP's)

- **Reading the Field:** As a batter, identify where the weakest fielders or largest gaps are before the ball is bowled.
- **Bowling Strategy:** Using a "mix" of deliveries (e.g., two fast flat balls followed by a Donkey Drop) to disrupt the batter's rhythm.
- **Fielding Shifts:** Moving fielders closer or deeper depending on the strength and "pull" (hitting direction) of the specific batter.
- **The "Half-Rounder" Rule:** Understanding when to stop at 2nd post to secure a half-rounder versus risking the run to 4th.

When would I need to use this skill?

Anytime during the game when completing one of these relevant roles. This is your contribution to your teams success!

Religious Studies: Y8 Term 3

Religious Studies Knowledge Organiser: Y8 HT3 Human Rights

Keywords and Definitions

Humanism	**Non-religious, and ethical life stance that emphasizes human reason, empathy, and scientific inquiry to understand the world and solve problems**
Human rights	Universal, and fundamental rights belonging to every person simply because they exist, regardless of nationality, gender, race, or religion.
Human rights abuse	The wrongful treatment, denial, or infringement of basic, universally recognized rights
Morals	The wrongful treatment, denial, or infringement of basic, universally recognized rights
Ethics	Moral principles that govern a person's behaviour or the conducting of an activity.
Human trafficking	Modern slavery and a serious human rights violation
Discrimination	The unjust treatment of different categories of people, especially on the grounds of ethnicity, age, sex, or disability.

- Human Rights cannot be taken away without a good legal reason
- The Universal Declaration of Human Rights has 30 articles
- The United Nations helps protect human rights worldwide
- Governments are responsible for protecting human rights
- Schools teach human rights to promote equality and respect
- Human rights include freedom, safety, equality, and dignity
- Many charities and organisations work to protect human rights
- Human rights help prevent war and conflict

Knowledge

UNITED NATIONS

United Nations (UN) is a group of countries from around the world that work together to keep peace, protect human rights, and help solve global problems like poverty, climate change, and disasters. They create rules, provide aid, and encourage countries to cooperate so everyone can live more safely and fairly.

When were Human Rights created?

- Millions of people were killed and treated unfairly during World War II.
- The world wanted to stop this from happening again, therefore, countries agreed to create rules to protect people.
- Human rights were made to protect people from harm, ensure equality and fairness, give people freedom, stop discrimination, and promote peace around the world.
- Modern human rights began after World War II in 1948 when the United Nations created the Universal Declaration of Human Rights. This document listed the basic rights that all people around the world should have and is still used today to protect people's rights.

Why are human rights important?

Human rights are important because they protect people and make sure everyone is treated fairly and safely. They help stop discrimination, violence, and unfair treatment, and ensure people have freedoms like education, safety, and speaking their opinions. Human rights help create a fair and peaceful society where everyone is respected.

AMNESTY INTERNATIONAL

Who is amnesty international?

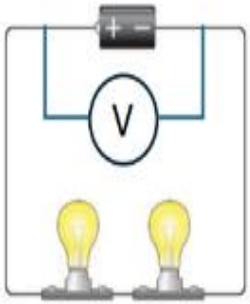
Amnesty International is a worldwide organization that works to protect human rights. It investigates unfair treatment, speaks out against injustice, and campaigns to make sure people are treated fairly and safely. Amnesty International encourages people to take action, such as signing petitions and raising awareness, to help defend the rights of others around the world.

Science: Y8 Term 3

SCIENCE Y8 ELECTRICITY/MAGNETISM KNOWLEDGE ORGANISER

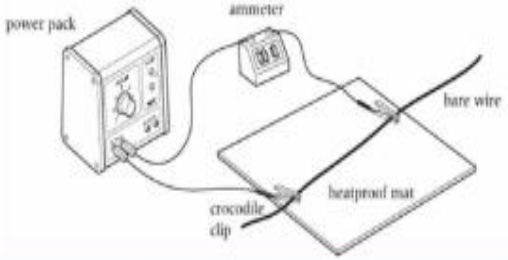
1. Potential Difference

- The difference in voltage between two places in a circuit.
- Voltage is measured with a voltmeter.



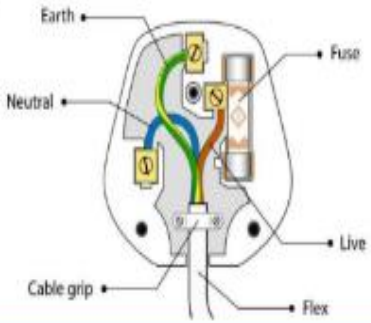
2. Resistance

- Resistance is how hard it is for current to flow through a circuit.
- Resistance is measured in Ohms.
- To increase resistance in a circuit you can increase the length of the wire or the temperature. The thinner the wire the higher the resistance.



3. Electrical Plugs

- The Live wire has a voltage between 0-230V - BROWN
- The neutral wire has) voltage – BLUE
- The Earth (GREEN/YELLOW) has 0V unless there is a problem.



4. Static Electricity Uses and Charges

- Electrostatic charge builds up when electrons move onto the surface.
- When charge rapidly moves from one object to another this is called discharge
- Sparkes can occur if an earthed conductor is brought close to a charged object, charges jumps across a gap or discharge occurs for a fraction of a second.
- We can use electrical charge for the following things:

Defibrillator

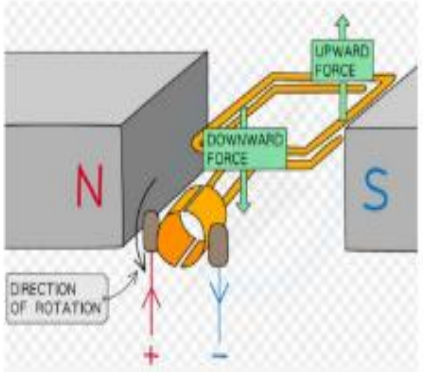
Photocopier

Paint spraying

Weedkiller spraying

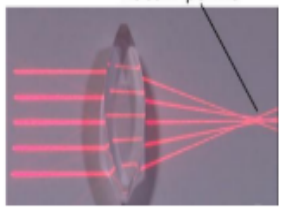
5. Electric Motors

- A motor is a device that spins when current flows through it.
- It is made from a magnet and a coil of wire connected to a circuit.

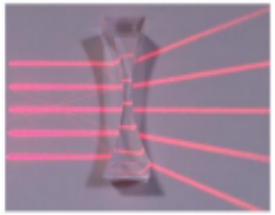


SCIENCE Y8 WAVES KNOWLEDGE ORGANISER

1. Lenses

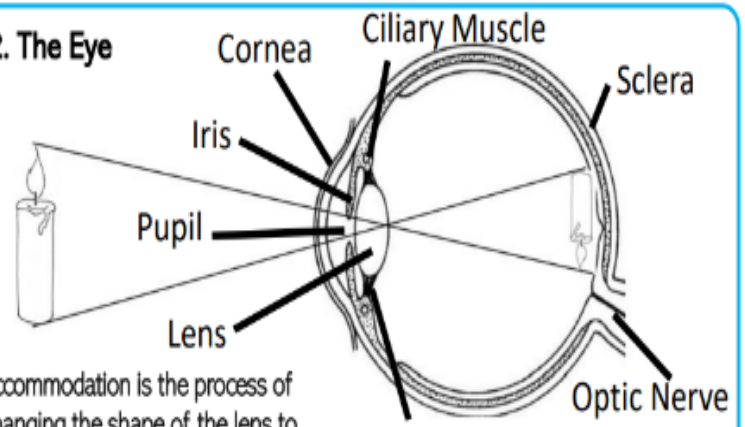


Convex Lens
- Convex/converging
- Light rays converge at a focal point
- Form real images



Concave Lens
- Concave /diverging
- Focus where the light appears to come from
- Form virtual images

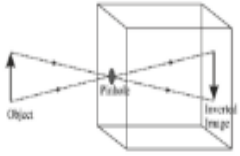
2. The Eye



Accommodation is the process of changing the shape of the lens to focus on near or distant objects.

To focus on a **near** object – the lens becomes **thicker**, this allows the light rays to refract (bend) more strongly.
To focus on a **distant** object – the lens is pulled **thin**, this allows the light rays to refract slightly.

3. The Pinhole Camera



A pinhole camera consists of a box or tube with a translucent screen at one end and a tiny hole (the pinhole) made in the other end.

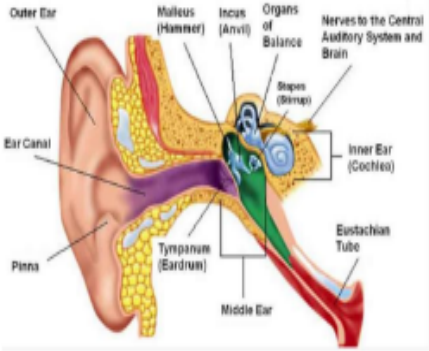
Light enters the box through the pinhole and is focused by the pinhole onto the translucent screen. The image is upside down and smaller than the object.

4. Sound Waves

Longitudinal Waves - The particles vibrate in the same direction as the direction that the wave is moving in.

Sound waves are longitudinal waves.

5. Hearing



When a sound reaches us, the air particles inside our vibrate and hit the eardrum.
The eardrum then starts vibrating and these vibrations are passed to three small ear bones – called the hammer, anvil and stirrup.
The stirrup bone hits the cochlea, which turns the vibrations into an electrical signal that is sent to our brain via the auditory nerve.

6. Ultrasound

The highest sound humans can hear has a of 20, 000 (20 kHz). If the vibrations of a sound wave have a frequency that is higher than 20 kHz our ears can't detect them and it is called .

Uses of Ultrasound
- Breaking down kidney stones
- Cleaning delicate objects/jewellery
- Seeing inside the body
- Checking for faults inside other objects

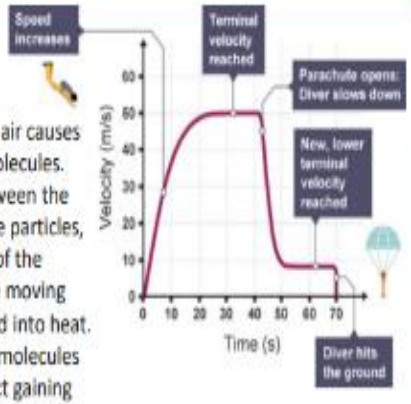
7. Echoes

You hear an when a sound bounces off something and comes back to your ear. An echo is made by a sound wave reflecting off a surface.

The sound has to travel there and back, therefore, the distance travelled by the sound for an echo is twice the distance of the surface that it is bouncing off of.

SCIENCE Y8 FORCES KNOWLEDGE ORGANISER

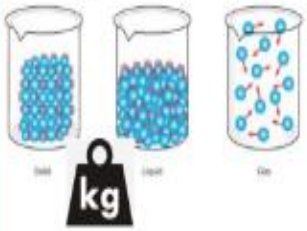
1. Drag



Moving through the air causes collisions with air molecules. There is friction between the moving body and the particles, which causes some of the kinetic energy of the moving body to be converted into heat. Additionally, the air molecules bounce off the object gaining kinetic energy.

The faster an object moves, the greater the number of collisions with air molecules. This increases friction, and the air molecules bouncing off gain even more kinetic energy.

2. Weight and Mass



Mass is the amount of matter in an object. This does not change.

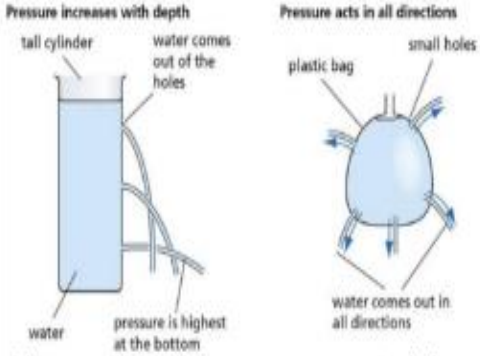
Weight is a measure of the gravitational force acting on an object.

3. Floating and Sinking

An object floats when its weight is less than the force of upthrust

An object sinks when its weight is greater than the force of upthrust

4. Pressure in Fluids



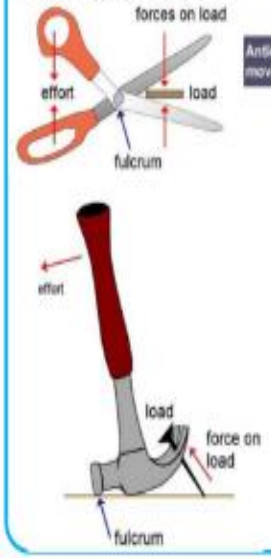
Pascal's Law:

The increase in pressure at any point inside a liquid at rest is transmitted equally in all directions

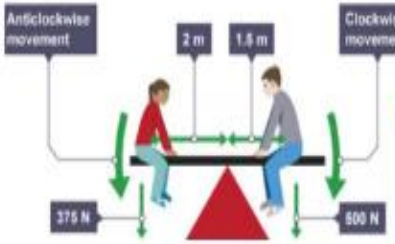
The amount of pressure exerted depends on density and depth. The deeper you go:

- Greater the weight of liquid above
- The greater the liquid pressure

5. Turning Effects



A pivot is the point at which an object turns



When the moments are equal the see saw is balanced