Name:

Form:

Knowledge Organisers

Year 8 Term 2

Knowledge is Power

Knowledge Organiser Guide

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

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

🔄 The Look, Cover, Write, Check (LCWC) Method

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

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

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

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

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

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

🧠 Other Great Techniques

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

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

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

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

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

5. Spaced Practice
Revisit the same facts over several weeks. Don't cram – return to older content regularly.
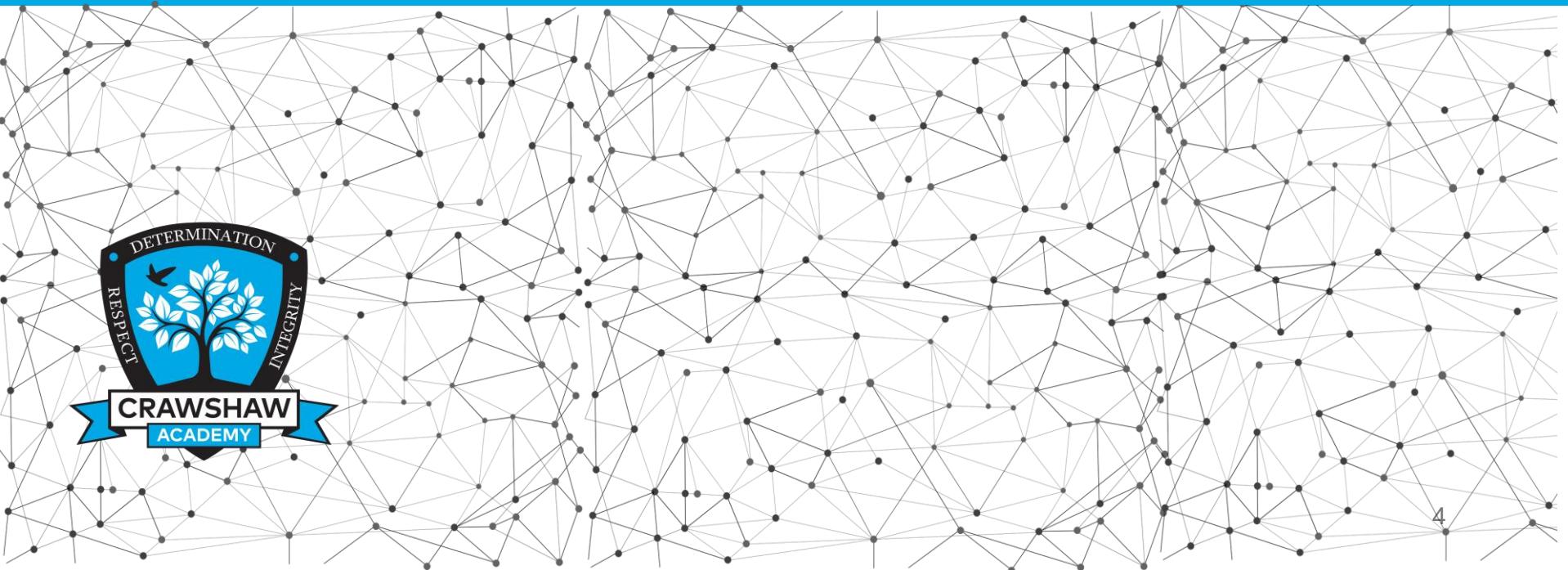
📚 Using Your KO in Class

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

Art: Y8 Term 2

Theoretical Knowledge

What is Surrealism?

Surrealism is a term used to describe art that is in a sense unrealistic. Surreal art is expressive, it can express truth or fiction. Lots of artists use surrealism as a way to express their theories or views in a visual way. Surrealism means "above realism".

Surreal art is a way to express yourself with imperfections and a focus on meaning rather than the way something looks. Expression plays a huge part when creating surreal art, you create from your mind not from reality or real life. Exercises such as drawing from memory and continuous line drawing can be used to record thoughts and feelings.

Famous Surrealist Paintings

Fact - Surrealism began as a philosophical movement that said the way to find truth in the world was through the subconscious mind and dreams.

Theoretical Knowledge

Salvador Dali was a Spanish surrealism artist who was best known for his striking and bizarre surreal art creations. He was considered to have been one of the greatest surrealism artists of all time. When was the surrealism movement? The movement began in the mid1920s in France and was born out of an earlier movement called Dadaism from Switzerland. peak in the 1930s.

The Persistence of Memory (Salvador Dali)

Perhaps the most famous of all the great Surrealist paintings, the *Persistence of Memory* is known for the melting watches as well as the clarity of the art. The painting gives you sense that you are dreaming and that time is irrelevant.

Theoretical Knowledge

Dada	An art movement formed during the First World War in Zurich that poked fun at the seriousness of the modern world.
Surreal	Beyond real, bizarre, dreamlike.
Andre Bretton	French writer/poet who started the surrealist movement and explained it in his Surrealist manifesto.
Manifesto	A document that explains the intentions of something.
Sigmund Freud	Psychoanalyst who inspired the surrealist movement through his studies of the subconscious mind.
Psychoanalyst	A doctor that studies the human mind.
Subconscious	The part of our minds that we are not aware of. Where our memories are stored and dreams are created.
Automatism	Automatic drawing or writing. Drawing without knowing what it's going to be, like doodling.
Salvador Dali	An eccentric, Spanish, surrealist artist. The most famous surrealist artist.
'The Persistence of Memory'	Dali's most famous artwork with the melting clocks.
Rene Magritte	French surrealist artist well known for including a bowler hat in many or his paintings.
Max Ernst	German surrealist painter, sculptor, graphic artist, and poet. A prolific artist, Ernst was a primary pioneer of the Dada and Surrealist movement.
Surreal Devices	Techniques used by surrealists to make their work more bizarre and dreamlike.
Metamorphosis	Morphing one object in to another or changing its shape.
Levitation	Floating objects that don't normally float.
Transparency	Making objects see through.
Change of Scale	Objects that are too small or too large for their surroundings.

☐ **Shape:** the area enclosed by a line. It could be just an outline or it could be shaded in. Shapes can be geometric, like a circle or triangle, or irregular

☐ **Texture:** relates to the surface quality – the way something feels or looks like it feels. Actual texture can be created by changing the surface of a canvas, for example, whilst visual texture is created by using marks to represent a particular surface.

☐ **Tone:** refers to how light or dark something is. This could be a shade or how dark or light a colour appears. Tones are created by the way light falls onto a 3D object. Light areas are highlights, whereas darker areas are shadows.

☐ **Pattern:** a design that is created by repeating lines, shapes, tones or colours. Patterns can be man-made, like the design printed/woven onto a fabric, or could be completely natural i.e. the markings on animal fur.

Computing: Y8 Term 2

Y8 BUSINESS

Topic 1 – What is a business?	
KEY TERM	DEFINITION
Business	A business is an individual or organisation that makes products or provides services, in exchange for money.
Products	Products are physical, tangible items (can be touched) such as a Mobile Phone or a Television set.
Services	Services are non physical, intangible (cannot be touched) such as a taxi journey or Wi-Fi.

Topic 2 – What do businesses do?	
KEY TERM	DEFINITION
Inputs	A business uses resources such as land and labour.
Outputs	What is produced e.g goods and/or services to sell to customers.
Added Value	Increasing the worth of a product by undertaking a form of activity on the original resource.

Topic 3 - Entrepreneurs	
KEY TERM	DEFINITION
Entrepreneur	Someone who takes a financial risk to start a business.

Topic 4 – Risks and Rewards	
KEY TERM	DEFINITION
Risk	A situation which brings an exposure to danger, business risks are Failure, Financial Loss and a Lack of Security
Reward	The benefits that can be obtained by someone who puts in the effort required to run a business. Financial/Independence/Being successful

Topic 5 – Ownership Structures	
KEY TERM	DEFINITION
Sole Trader	A small, local business, owned by 1 person.
Partnership	Slightly larger business, owned by 2-20 partners.
LTD	Larger again, these businesses are owned privately and can operate across a nation.
PLC	The largest type of business in the world. People can buy shares in these business. They operate across countries or continents.

The Binary Number System

In the number system that us humans use, the number 10 means 'ten' because the digits mean '1 ten and 0 ones'.

10's	1's
1	0

...the number 33 means 'thirty three' because the digits mean '3 tens and 3 ones'.

10's	1's
3	3

...the number 528 means 'five hundred and twenty eight' because the digits mean '5 hundreds, 2 tens and 8 ones'.

100's	10's	1's
5	2	8

Humans developed this 'base 10' number system millions of years ago because they learnt to count using their hands, which have 10 digits. Computers, being electronic, are simply made up of switches (which can be in only one of two states (on/off)) and as a result cannot count like us! As a result, computers use a different number system – the binary number system

2's	1's
1	0

The columns in the binary system, from right to left are 1, 2, 4, doubling as we go

...in binary the digits 10 means 'the number two' because the digits mean '1 two and 0 ones'.

8's	4's	2's	1's
1	0	0	1

...the digits 1001 means 'the number nine' because the digits mean '1 eight, 0 fours, 0 twos and 1 one'.

Converting from Binary to Decimal/Denary

To convert a binary number into decimal/denary, the process is thankfully really easy! All we need to do is add up the column values which contain a one and ignore the column values which contain a zero.

For example, the following binary number has the decimal/denary value of 155. This is because the 1s in the binary number represents 128 + 16 + 8 + 2 + 1 = 155

128	64	32	16	8	4	2	1
1	0	0	1	1	0	1	1

→ 155

Converting from Decimal/Denary to Binary

Converting from decimal/denary to binary, is also not too hard! We just need to work out which of the column values add together to form the decimal value that we needed to convert.

The easiest way is to do this is work from left to right along the binary column values and if the column value can fit into our decimal number, we place a 1 under that value's column, subtract the column value from the decimal number and continue the process. For example, if we want to convert the decimal number 202 into binary, we would do the following:

Does 128 fit into 202? Yes! So, we add a 1 to the column and subtract 128 from 202 leaving 74.

Does 64 fit into 74? Yes! So, we add a 1 to the column and subtract 64 from 74 leaving 10.

Does 32 fit into 10? No! So, we add a 0 to the column and move on!

This process continues until we've made the remaining value of ten by placing 1s under the 8 and 2 columns (because 8 + 2 = 10), and add zeros under the others.

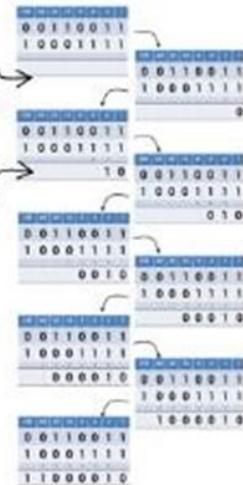| 1	1	0	0	1	0	1	0

Binary Addition

Adding binary numbers is much like adding denary numbers (the system we use as humans).

Things to remember:

→ Keep your numbers in the correct columns
→ 1+1 = 10 in binary
→ 1+1+1 = 11 in binary

We begin, like we would normally when adding two numbers together, with the right most column.

In this example, we add two 1s together, which of course is 2! However, in binary, 2 is represented as 10, and as there are two digits in this answer, we place the right digit (zero) under the column and carry the left digit (one) over to the next (left) column.

Now we focus on the second column from the right. Here we have 1+1+1 (including the carry), which of course equals 3. But in binary 3 is represented as 11. We therefore place the right digit underneath and carry the left digit.

This process then continues, moving through the columns to the left, until we have added the binary numbers.

Representing Characters

- As we know, computers can only deal with 0s and 1s (binary).
- All data that it needs to work with (numbers, sound, images etc) must be converted into binary for the computer to be able to process it.
- It is exactly the same for text, or one piece of text known as a character.
- Each time you hit a key on a keyboard, the computer generates a code for that letter, which is then processed by the CPU and the result might be the letter appearing on the screen or being printed on paper.
- So that all computer systems behave in a similar way it is important that there is an agreed set of codes for characters.
- The agreed set of codes to represent the main characters in the English language is known as ASCII (American Standard Code for Information Interchange).

Below, you can see that each character is represented by a number. The binary table contains 5 binary numbers, and by working out the value of each binary number, we can see which letter it represents by looking it up in the ASCII table.

ASCII TABLE

What is my name?

32	16	8	4	2	1	
1	0	1	0	1	0	82 - R
1	0	0	1	0	1	73 - I
1	0	1	1	0	0	78 - N
1	0	0	1	1	1	71 - G
1	0	0	1	1	1	79 - O

Representing Images

Bitmaps

Bitmap images are made up of rows of "dots" called "pixels" (picture elements). Each pixel is represented by a binary number. Behind the scenes, this 1-bit image (with each shade represented by a bit) is in fact a series of numbers:

In a coloured bitmap, longer binary numbers represent a different colour:

8-bit or 256 color displays

Each screen pixel is represented by eight bits of memory.

256 colors (Color Look Up Table)

Pixels on the computer screen

As images get more colourful, longer binary numbers are needed so that a bigger combination of colours can be shown.

Representing Sound

Analogue sounds (sound waves that continuously vary) are pure and of perfect quality.

However, computer recorded sound is not pure, not real and not of perfect quality and this is because sound has been digitised – it has been sampled at set intervals.

Sampling

Sampling is the process by which computers digitise sound.

They measure the height of sound waves at regular intervals and record the measurement as a binary number.

So, whereas analogue sound is continuous over time, digitised sound is made up of lots of 'sound bites' over time.

When computers play sound through a speaker, they process each of the binary measurements and send signals to the speaker making it vibrate in different ways, according to the binary data.

Summary—Data Representation

Computers use electrical signals that are on or off, so they have to see everything as a series of **binary** numbers. This data is represented as a sequence of 1s and 0s (on and off). All data that we want a computer to process needs to be converted into this binary format.

Computers use binary to process data. There are simple techniques to convert between binary and denary and to add two binary numbers together.

How do Computers see the world

Computers use electrical signals that are on or off, so they have to see everything as a series of **binary** numbers. This data is represented as a sequence of 1s and 0s (on and off). **All data that we want a computer to process needs to be converted into this binary format.**

What is Binary

Binary is a number system that only uses two digits: 1 and 0. All information that is processed by a computer is in the form of a sequence of 1s and 0s. Therefore, all data that we want a computer to process needs to be converted into binary.

The binary system is known as a 'base 2' system. This is because:

- there are only two digits to select from (1 and 0) when using the binary system, data is converted using the power of two.
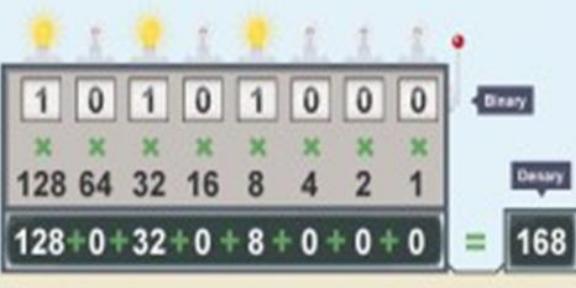
Alan Turing

Turing was quite a brilliant mathematician, most famous for his work on breaking the German Enigma codes... Without his outstanding contribution the history of the Second World War could have been very different.

Turing was highly influential in the development of theoretical computer science, providing a formalisation of the concepts of algorithm and computation with the Turing machine, which can be considered a model of a general-purpose computer. Turing is widely considered to be the father of theoretical computer science and artificial intelligence.

What is Denary

| Thousands	Hundreds	Tens	Units
(1000s)	(100s)	(10s)	(1s)

People use the **denary** (or decimal) number system in their day-to-day lives. This system has 10 digits that we can use: 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9.

Binary to Denary Conversion

To convert a **binary** number to denary, start by writing out the binary place values.

128	64	32	16	8	4	2	1	Ex-
1	0	1	0	1	0	0	0	

ample the binary value of **10101000 = 168 in Denary**

1 x 128
0 x 64
1 x 32
0 x 16
1 x 8
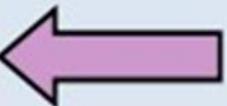
Binary to Denary Conversion

Example 199 **Denary**

199 – 128 = 71. Because 128 could be taken off, put a 1 in the '128' place value column:

128	64	32	16	8	4	2	1
1							

Now repeat

for 64: **71 – 64 = 7**

128	64	32	16	8	4	2	1
1	1						

Again

for 32: **7 – 32** won't work, so put a 0 in that place value column.

128	64	32	16	8	4	2	1
1	1	0					

Try again for 16: **7 – 16** won't work, so add a 0 to that place value column

128	64	32	16	8	4	2	1
1	1	0	0				

Next is

8: **7 – 8** won't work. Add a 0 to the '8' place value column

128	64	32	16	8	4	2	1
1	1	0	0	0			

Try

again for 4: **7 – 4 = 3**, so add a 1 to the '4' place value column.

128	64	32	16	8	4	2	1
1	1	0	0	0	1		

Next

try 2: **3 – 2 = 1**, so add a 1 to the '2' place value column.

128	64	32	16	8	4	2	1
1	1	0	0	0	1	1	

And finally, 1: **1 – 1 = 0** – add a 1 to the '1' place value column.

128	64	32	16	8	4	2	1
1	1	0	0	0	1	1	1

This means that 199 as a binary number is **1100 0111.**

Knowledge Organiser: Hexadecimal

Summary—Hexadecimal

Hex is easier to understand than binary. Programmers often use hex to represent binary values as they are simpler to write and check than when using binary.

Hexadecimal to denary

Whereas denary place values are powers of 10, and binary place values are powers of 2, hex place values are powers of 16.

In Computer science, different number bases are used:

- **Denary** is base 10, which has ten units (0-9).
- **Binary** is base 2, which has two units (0-1)
- **Hexadecimal**, also known as hex, is the third commonly used number system. It has 16 units (0-9) and the letters A, B, C, D, E and F.

Hexadecimal to Denary

Whereas denary place values are powers of 10, and binary place values are powers of 2, hex place values are powers of 16.

Each place value can be represented by the units 0 through to F.

65,536	4,096	256	16	1

To convert hex to denary, simply take each place value that has a unit in it, and add them together.

65,536	4,096	256	16	1
			7	C

Denary to hexadecimal

If the denary number is bigger than 16, divide it by 16. Take the hex equivalent of this result - this represents the first digit. Take the hex equivalent of the remainder - this represents the second digit. If the denary number is smaller than 16, take the hex equivalent of the denary number.

Example - convert 138 to hex

138 ÷ 16 = 8 remainder 10
8 = hex 8
10 = hex A
Result: 8A

Converting between Binary and Hexadecimal

1. Start at the rightmost digit and break the binary number up into groups of four digits. These are known as nibbles. If there are less than four digits, use just that number of digits for that group.
2. Next, convert each group of four digits into denary.
3. Convert each denary value into its hex equivalent.
4. Put the hex digits together.

Example - 11000011 to hex
Break into groups of four - 1100 0011
1100 = denary 12   0011 = denary 3
12 = hex C   3 = hex 3
Result: C3

Converting between Hexadecimal to Binary

1. Split the hex number into individual values.
2. Convert each hex value into its denary equivalent.
3. Next, convert each denary digit into binary, making sure you write four digits for each value.
4. Combine all four digits to make one binary number.

Example - hex FC to binary
F = denary 15   C = denary 12
15 = binary 1111   12 = binary 1100
Result: 11111100

Binary and Hexadecimal Number Systems

8 bits	1 byte (B)
1,000 bytes (1,000 B)	1 kilobyte (KB)
1,000 kilobytes (1,000 KB)	1 megabyte (MB)
1,000 megabytes (1,000 MB)	1 gigabyte (GB)
1,000 gigabytes (1,000 GB)	1 terabyte (TB)
1,000 terabytes (1,000 TB)	1 petabyte (PB)

The binary unit system

Denary	Binary	Hexadecimal
0	0000	0
1	0001	1
2	0010	2
3	0011	3
4	0100	4
5	0101	5
6	0110	6
7	0111	7
8	1000	8
9	1001	9
10	1010	A
11	1011	B
12	1100	C
13	1101	D
14	1110	E
15	1111	F

The Hexadecimal Number system

DT: Y8 Term 2

Theoretical Knowledge - Research

Fabrics and Fibres

Types of Fibres

Natural Fibres
- **Plant-based**: Cotton (soft, absorbent), Linen (strong, cool)
- **Animal-based**: Wool (warm, insulating), Silk (smooth, luxurious)

Synthetic Fibres
- Polyester (strong, quick-drying)
- Nylon (durable, elastic)

Regenerated Fibres
- Viscose (soft, drapes well)
- Modal (smooth, breathable)

Property	Meaning
Absorbency	Ability to soak up moisture
Elasticity	Ability to stretch and return to shape
Durability	Resistance to wear and tear
Warmth	Ability to retain heat
Breathability	Allows air and moisture to pass through

Fabric Construction

A. Woven Fabrics – Made on a loom (e.g., plain weave, twill weave)
B. Knitted Fabrics – Made by interlocking loops (e.g., weft knit, warp knit)
C. Non-Woven Fabrics – Bonded fibres (e.g., felt)

(a)   (b)   (c)

Environmental Impact of Fabrics

Natural fibres (cotton, wool, silk):
- Pros: Biodegradable, renewable.
- Cons: High water usage (cotton), pesticide use, animal welfare concerns.

Synthetic fibres (polyester, nylon):
- Pros: Durable, low water use in production.
- Cons: Made from petroleum, non-biodegradable, microplastic pollution.

Regenerated fibres (viscose, modal):
- Pros: Derived from plant cellulose.
- Cons: Chemical-heavy processes, deforestation risks.

Theoretical Knowledge

Basic Components
- **Presser Foot**: Holds the fabric in place while sewing.
- **Feed Dogs**: Small teeth under the presser foot that move the fabric forward.
- **Bobbin**: Supplies the lower thread for stitching.
- **Needle**: Carries the upper thread through the fabric.

Common Stitches
- **Straight Stitch**: Most basic stitch for seams.
- **Zigzag Stitch**: Used for finishing edges or stretchy fabrics.
- **Backstitch**: Reinforces seams at the start and end.
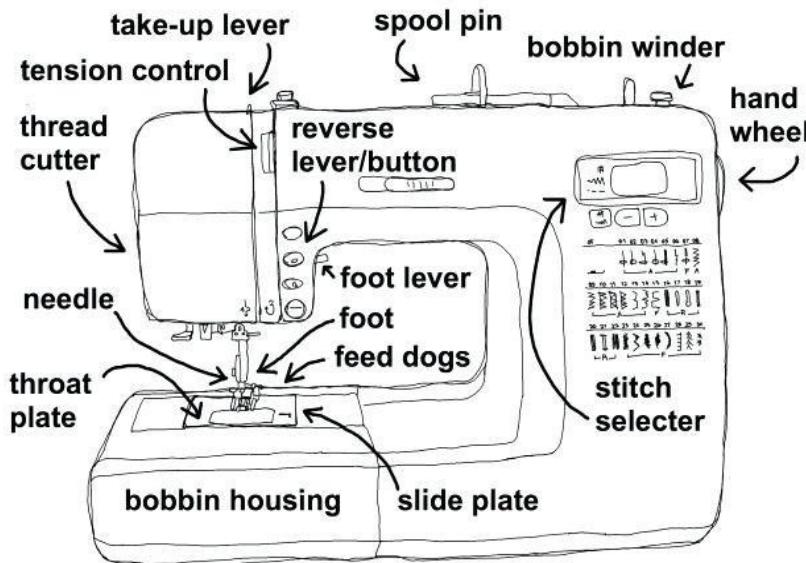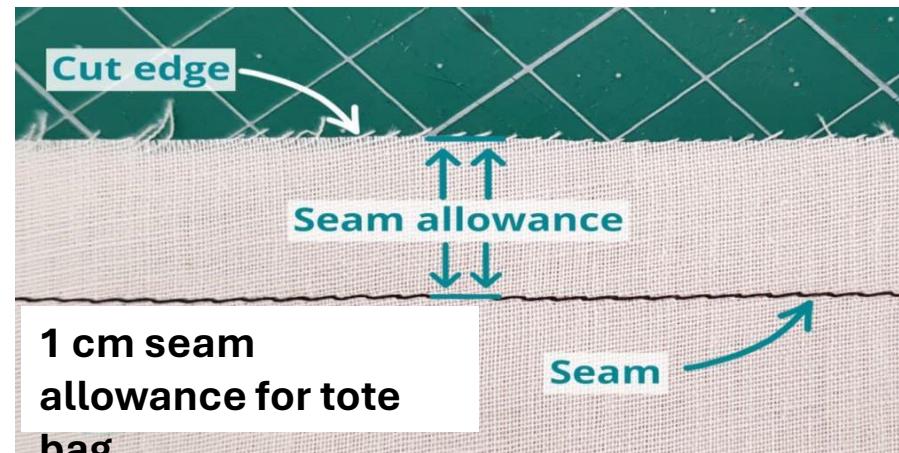
Threading the Machine
- Correct threading is essential for smooth stitching.
- Always thread with the presser foot **up** to ensure proper tension.

Safety Tips
- Keep fingers away from the needle.
- Turn off the machine when changing the needle or threading.
- Use the correct needle for the fabric type.

1 cm seam allowance for tote bag

Theoretical Knowledge

Cultural Patterns

What Are Cultural Patterns?
Designs inspired by traditional art, textiles, and symbols from different cultures.
- Examples:
- **African**: Geometric shapes, bold colors, tribal motifs.
- **Indian**: Paisley, floral patterns, intricate detailing.
- **Japanese**: Cherry blossoms, waves, origami-inspired shapes.
- **Celtic**: Knots, spirals, interlacing lines.

Why Use Cultural Patterns in Jewellery?

•Celebrates heritage and diversity.
•Adds meaning and storytelling to design.
•Encourages research and respect for cultural traditions.

What is Pewter Casting?

•Pewter is a soft, low-melting-point alloy (mostly tin, with small amounts of copper and antimony).
•Melts at around **170–230°C**, making it suitable for school workshops.
•Commonly used for **jewellery, keyrings, and decorative items**.

Cultural Influences: Africa

Cultural Influences: India

Cultural Influences: Morocco

Cultural Influences: Japan

Cultural Influences: Africa

Cultural Influences: Africa
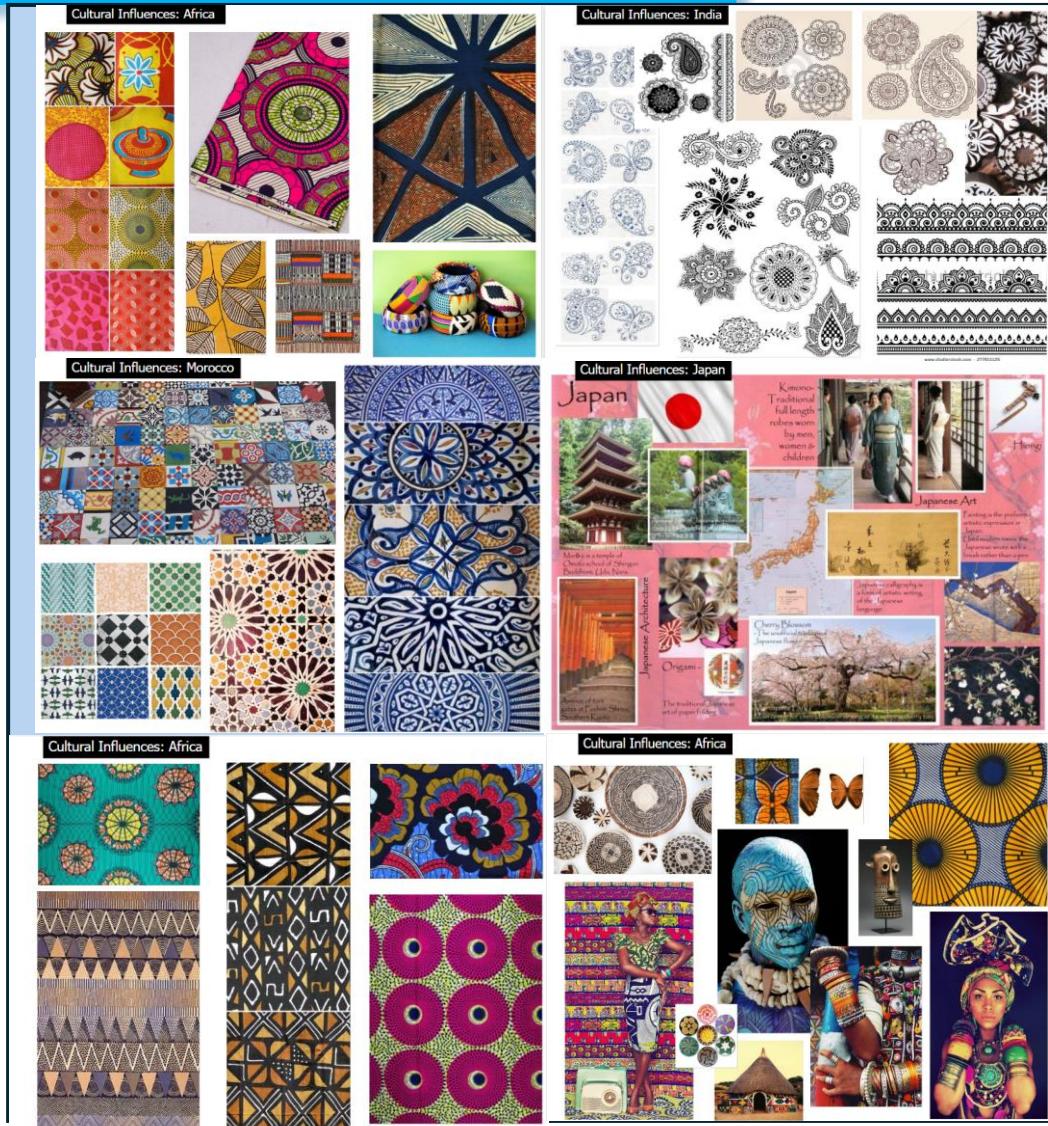
Drama: Y8 Term 2

Features of a Play

Act	A way to divide a play
Scene	A section of an act.
Stage Directions.	Instructions for the actor in a play directing the movement or action
Soliloquy	Where a character speaks their thoughts/feelings aloud alone on stage.
Aside	Dialogue that is to be heard by the audience but unheard by the other characters onstage.
Dramatic Irony	Where the audience have more knowledge that the characters.

Features of a Tragedy

Tragic end	A character with a fatal flaw
Tragic hero	Fate
Internal conflict	Human suffering

MACBETH by WILLIAM SHAKESPEARE

Character	Characteristics
Macbeth:	ambitious, courageous, deceitful, impulsive, ruthless, treasonous,
Lady Macbeth:	cunning, dominant, malevolent, powerful, scheming, vulnerable
Banquo	devoted, intuitive, loyal, trustworthy, virtuous
King Duncan	benevolent, faithful, honest, naïve, sincere
The 3 Witches	manipulative, sinister, subversive

The audience feel… Astonished Disquieted Surprised Unsettled

MACBETH
by WILLIAM SHAKESPEARE

<u>Witchcraft</u> – in Shakespeare's time there was no scientific knowledge to explain natural disasters such as earthquakes, floods and droughts. One of the ways they accounted for the unexplained was the idea of witches. In Elizabethan England, hundreds of thousands of women were tortured and executed in Europe because they were accused of witchcraft.. At the time Shakespeare was writing, many people thought that witches were real, so the weird sisters would have seemed believable and frightening to an audience in the 1600s.

The play was written in **1606** (The Gunpowder Plot occurred in 1605)but is set in the 11th century (Medieval period).
Macbeth is the only Shakespearean play set in **Scotland.**
Macbeth's castle is in Inverness. King Duncan's Palace is in Dunsinane.
In the play, King Duncan is a benevolent king and loved by all. Banquo is intrigued by the Witches prophecies & does have ambitious thoughts, but he does not choose to act on these thoughts.
There are similarities between Banquo and Macbeth- They are both soldiers, they are both very patriotic at the start of the play and they are both considered to be brave and noble. Shakespeare believed the human nature is prone to evil and that people are greedy. He illustrates this in the Macbeths' desire to become King and Queen, this greed leads them to resort to extreme measures such as regicide. Macbeth kills Macdonald, Duncan, Duncan's guards and Young Siward himself. Macbeth orders the deaths of Lady Macduff, her family and household and Banquo.

English: Y8 Term 2

Knowledge Organiser: Crafting persuasive speeches

Key Vocabulary

Word	Definition	In a sentence
Confidence (noun)	(noun) a feeling of trust, belief, or certainty in one's own abilities.	teaching **confidence** helps students see it as a skill that can be learned rather than something you either have or don't have.
Articulate	(adj) Having or showing the ability to speak or write fluently and coherently. (verb) pronounce (something) clearly and distinctly.	**(adjective)** The student delivered an **articulate** explanation, speaking fluently and coherently about her chosen topic. **(verb)** He was able to **articulate** his ideas clearly, both in his spoken presentation and in his written analysis.
Voice (noun)	The way a speaker expresses their thoughts and opinions through verbal delivery.	A speaker's **voice** reveals their thoughts and attitudes through both the words they choose and the way they deliver them
Tone (noun)	The speaker's attitude or emotion expressed through their voice. Conveyed by how something is said, not just what is said.	The **tone** of the speech shifted from hopeful to urgent
Body Language (noun)	The use of physical behaviours, such as posture, gestures, facial expressions, and eye contact, to communicate feelings, intentions, or attitudes.	Effective **body language**, such as open posture and steady eye contact, can make a speaker appear more confident and engaging.
Anaphora (noun)	Repetition found at the beginning of successive sentences, clauses or lines.	The speaker used **anaphora** to emphasise her key message, beginning each sentence with "We must…"
Transcription (noun)	the process of converting spoken language into written text	Students practised **transcription** by converting their recorded discussions into written text so they could analyse their delivery

Extension knowledge: you can enhance your writing by…

- Using rhetorical devices to persuade the reader/ audiences (DAFORESTPIE)
- Structuring your speech in an effective way (starting with purpose; finishing with an emotional appeal.

A good speech has:

Anecdotes
Personal stories to provide evidence for your argument

Emotive language
Carefully crafted language to appeal to the audience and evoke pity, fear, disgust etc.

Triplets
Three powerful words of phrases in a row.

Expert opinions
Refer to leading opinions by experts to give credibility to your argument

a clear, audible voice to convey the message effectively

confident delivery, characterised by posture, non-verbal gestures and eye contact

Rhetorical devices to engage and persuade a specific audience

Knowledge Organiser: Macbeth by William Shakespeare

Key Vocabulary

Word	Definition	In a sentence
Ambition (*noun*)	A strong desire for fame/power; the drive to achieve a particular goal.	Her **ambition** drove her to seek a degree while working full-time.
Regicide (*noun*)	The murder of a king /queen: considered a severe crime because monarchs were believed to be chosen to rule by God. .	The penalty for **regicide** was immediate execution.
Manipulation (*noun*)	The action of controlling/influencing someone for one's own advantage, often in an dishonest way or exploiting a person's weaknesses.	He used **manipulation** tactics to influence the decision.
Subvert *(verb)*	To corrupt or undermine something such as a government or monarch.	The group attempted to **subvert** the rules of the organization.
Masculinity *(noun)*	Behaviour/roles historically (supposed to be) associated with men and boys, e.g. leadership, strength and assertiveness.	The play explores how views about his **masculinity** influence Macbeth's actions and choices.
Femininity *(noun)*	Behaviour/roles historically (supposed to be) associated with women and girls, e.g. submissiveness, gentleness and sensitivity.	She celebrated her **femininity**, but refused to follow 'girly' stereotypes.
Corruption *(noun)*	The (usually illegal) abuse of entrusted power for private or personal gain	The investigation exposed serious bribery and **corruption** within the city's police.

Context:
- Jacobean society was a patriarchy – men were very much in charge, including in marriage, and it was consider unnatural and irreligious for women to make decisions instead of their husbands. See the definitions of 'masculinity' and 'femininity' above.
- Witchcraft and all forms of magic were believed to entirely evil and the work of the devil. Witches were believe to have made an agreement with the devil, selling their souls to gain gain magical powers or the ability to predict the future. The punishment was often death.

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

- Researching Shakespeare's life and the Jacobean era online
- Practising writing analytical/WHW paragraphs that explain whether a Jacobean audience would have seen Macbeth as more of villain or as more of a sympathetic character – and why.

Genre
The type of play/writing: Macbeth is as tragedy.

Soliloquy
A speech by a character who is alone on the stage, often to the audience.

Tragedy
A play showing the downfall and death of the main character.

Tragic Hero
The main character in a tragedy who is destroyed by their own pride .

Fatal Flaw
The character weakness that destroys a tragic hero: e.g. pride, ambition, etc.

A good play has:

Suspense

Conflict

Tension

Development

Food & Nutrition: Y8 Term 2

Key Words and Definitions

Theoretical Knowledge

🥦 Vegetarianism
•**No meat or fish**
Types:
•Lacto: dairy only
•Ovo: eggs only
•Lacto-ovo: both eggs and dairy
Watch for: Protein, iron, vitamin B12

Protein
•Builds and repairs body cells
•Needed for growth, maintenance, and a healthy immune system
Sources:
• 🐟 Animal-based: meat, fish, eggs, dairy
• 🌱 Plant-based: beans, lentils, tofu, nuts, seeds

💧 Coagulation
•**Proteins set** into a solid/semi-solid state after denaturing
•Caused by **heat or acid**
Examples:
•Eggs hardening when cooked
•Cheese making
•Cooked meat becoming firm

🌿 Veganism
•**No animal products at all** (no meat, dairy, eggs, honey)
Diet includes: fruits, vegetables, grains, legumes, nuts, seeds
Nutrient focus: Protein, calcium, iron, B12, omega-3

🌱 Alternative Protein Sources
•Used for health, ethical, and environmental reasons
Examples:
•Tofu, Tempeh, Quorn (mycoprotein), Seitan (wheat gluten)
•Pulses (beans, lentils, chickpeas), Insects (e.g. cricket flour)

🔄 Denaturation
•**Proteins change shape** when heated, whisked, or exposed to acid
•Happens during:
   •Cooking meat
   •Whisking eggs
   •Marinating fish in lemon juice

Key Words and Definitions

🧈 **Fats**

•Provides energy, insulates the body, protects organs

•Helps absorb vitamins A, D, E, K

Types of fat:

• ❌ Saturated: butter, cheese, fatty meats (limit intake)

• ✅ Unsaturated: olive oil, avocado, nuts (healthier)

Too much fat ➜ Risk of obesity and heart disease

🧪 **Emulsification**

•**Mixing two liquids that don't normally mix** (e.g. oil + water)

•**Emulsifier example:** Lecithin in egg yolk

Product example: Mayonnaise

Theoretical Knowledge

Mayonnaise

Ingredients
1 egg yolk
125ml vegetable oil
1 tsp Dijon mustard
1 tsp white wine vinegar or lemon juice

Method
1. Tip the egg yolk and mustard into a bowl, season with salt and pepper and <u>whisk</u> together until completely combined.

2. Whisking constantly, add a small drop of oil and whisk until completely combined, then add another drop and continue a drop at a time until the yolks and oil combine and start to thicken.

 3. Once the oil and eggs are coming together add the oil a bit more at a time, but be patient, as adding the oil too quickly will cause the mayonnaise to split and curdle.

Deficiency: not having enough of something that is needed

Knowledge

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

Knowledge and Skills

Burritos

Ingredients
125g minced beef
4 tortillas
1 garlic clove
1 onion
1tsp seasoning
½ can chopped tomatoes
½ can black beans or kidney beans
100g rice (or precooked rice)

Method
1. Place rice in a saucepan. Add just enough cold water to cover it. Place on the hob to boil. Cook for 15 minutes.
2. Peel and chop the garlic and dice the onion.
3. Heat a tablespoon of oil in a frying pan. Add the garlic and seasoning. Crumble the mince and fry until browned.
4. Add the chopped tomatoes, simmer for 5 minutes. Add the beans, then simmer for 15 minutes.
5. Drain the rice.
6. Place the beef sauce and the rice along the middle of the tortilla. Add any other toppings.
7. Fold over the ends and roll up to seal. Secure by wrapping with foil.

Chilli

Ingredients
1 large onion
1 red pepper
2 cloves garlic
250g mince
1 can kidney beans
½ to 1 tsp of chilli powder
1 tsp paprika
1 beef/vegetable stock cube
1 tin chopped tomatoes
1 rounded tbs of tomato puree

Method
1. Chop onion and pepper into small pieces.
2. Peel and finely chop 2 garlic cloves.
3. Put 1 tbsp oil into your pan and leave it for 1-2 minutes until hot (a little longer for an electric hob).
4. Add the onion and cook, stirring frequently, for about 5 minutes. Tip in the garlic, red pepper, 1 heaped tsp hot chilli powder or 1 level tbsp mild chilli powder, 1 tsp paprika.
5. Give it a good stir, then leave it to cook for another 5 minutes, stirring occasionally.
6. Add the mince. Keep stirring for 5 minutes.
7. Crumble 1 beef stock cube into the pan. Add tomatoes and tomato puree..
8. Bring the whole thing to the boil, give it a good stir and put a lid on the pan. Turn down the heat until it is gently bubbling and leave it for 20 minutes.
9. Drain kidney beans, then add to the chilli. Stir.

Sweet and Sour Chicken

Ingredients
1 Chicken breast or Quorn Fillets
1 onion
1 can pineapple chunks
2 tablespoons sugar
2 tablespoons vinegar
1 tablespoon tomato puree
1 tablespoon soy sauce
1 tablespoon cornflour
2 tablespoons oil
Red/Yellow/Green Pepper

Method
1. Peel and chop the onion and pepper (optional). Cut the chicken into small pieces.
2. Heat the oil in a large pan or wok and fry the onion and pepper.
3. Add the chicken pieces and fry over a high heat for five mins, stirring occasionally.
4. Drain the juice from a the pineapple into a measuring jug and add water to make 250ml.
5. Add the pineapple chunks to the chicken.
6. Mix the rest of the ingredients into the measuring jug.
7. Pour the liquid into the pan and simmer for 10 mins, stirring occasionally.

Knowledge and 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 tbsp groundnut oil
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.

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

Geography: Y8 Term 2

Geography Knowledge Organiser: Y8 – Unequal World

Lesson	1. Core knowledge – Highlight the knowledge you don't know or are less sure about
How are the world's countries classified?	**High-Income Countries (HICs)** – These are countries with high levels of income, and strong economies and its people have a good quality of life, such as the UK, USA, and Germany. **Low-Income Countries (LICs)** – These countries have lower levels of income, often relying on farming, with its people having a poorer quality of life. Examples include Chad and Afghanistan. **Newly Emerging Economies (NEEs)** – These are countries experiencing rapid industrial and economic growth, often moving from an LIC to an HIC status. Examples include India, Brazil, and China. - Most HICs are in Europe, Oceania and North America. NEEs are found in South America and Asia, whilst LICs are in Central Africa.
What is life like in HICs, LICs and NEEs?	**Quality of Life**– People in **HICs** generally have high wages, good healthcare, and access to education, while **LICs** often face poverty, poor healthcare, and low literacy rates. **NEEs** are improving but still have inequalities between rich and poor areas. **Employment**– **HICs** have diverse economies with many jobs in services (e.g., banking, technology). **LICs** rely on agriculture and raw materials, often with lower wages. **NEEs** are shifting towards manufacturing and industry, creating new job opportunities. **Infrastructure and Services** – **HICs** have advanced transport networks, modern hospitals, and reliable electricity. **LICs** often struggle with poor roads, limited healthcare, frequent power shortages and unclean water. **NEEs** are rapidly improving infrastructure but may still have overcrowding and pollution.
What are development indicators?	Development indicators are statistics that help measure the level of development of a country**:** 1. **Birth Rate** – The number of live births per 1,000 people per year. **LICs tend to have high birth rates** due to lack of contraception and the need for more children to work on farms, while **HICs have lower birth rates** due to family planning and career-focused lifestyles. 2. **Infant Mortality Rate** – The number of babies who die before their first birthday per 1,000 live births. **A high infant mortality rate** suggests poor healthcare, malnutrition, and sanitation, which is more common in **LICs**, whereas **HICs** have much lower rates due to better medical care. 3. **Calorie Intake** – The average number of calories eaten per person per day. **HICs have high calorie intake**, often leading to health issues like obesity, while **LICs may have lower calorie intake**, leading to malnutrition. 4. **Literacy rate** (percentage of adults who can read and write) is higher in **HICs** due to good education systems, whereas **LICs** may have lower rates due to poverty and lack of schools. 5. **Life expectancy** (average number of years a person is expected to live) is also higher in **HICs** because of better healthcare, whereas **LICs** may have shorter life expectancies due to disease and not eating enough food.

Geography Knowledge Organiser: Y8 – Unequal World

Why do LICs exist in the world today?	• **Colonialism** – Many **LICs** were once ruled by richer countries (colonies). These powerful countries took **natural resources** and used the land for their own benefit. When the LICs became independent, they were left with **weak economies and little money** to develop. • **Natural Disasters** – Some **LICs** experience frequent **earthquakes, floods, and droughts**, which destroy homes, farmland, and businesses. With little money to rebuild, development is slow, and people struggle to escape poverty. • **Climate** – Some LICs have **very hot or very wet climates**, which make farming difficult. If crops fail due to **droughts or heavy rains**, people may go hungry, and the country earns less money from selling food. • **War and Conflict** – Many LICs have had **wars or ongoing fighting**, which **destroys towns, schools, and hospitals**. This means that the government must pay money to repair the damage rather than improving the country. • **Corruption** – In some LICs, **leaders may keep money for themselves** instead of spending it on healthcare, schools, and roads. This stops the country from developing, and people continue to live in **poor conditions**.
How does fair trade help farmers in LICs?	• Fair Trade is a system that **helps farmers in LICs get a fair price** for the crops they grow, such as coffee, bananas, and cocoa. • Fair Trade **pays farmers more money**, so they can afford food, healthcare, and education for their families. It also makes sure they work in **safe conditions** and are not treated unfairly. • In normal trade, big companies can **pay very little** for crops from LICs, making farmers struggle. Fair Trade guarantees a **minimum price**, so even if market prices drop, farmers still earn enough to live. • Some of the **extra money** from Fair Trade products goes into local **projects**, such as **building schools, improving healthcare, and providing clean water**. This helps whole villages, not just farmers.
How does bottom-up aid help improve LICs?	• Bottom-up aid is when **small, local projects** help people in LICs improve their daily lives. Instead of big governments making decisions, **local people** work together to make changes in their communities. • Many slums in LICs **lack clean water and toilets**, leading to disease. Bottom-up aid helps by **building wells, installing toilets, and setting up water filters**, so people stay healthier. • Many slum houses are **made from weak materials** like scrap metal and wood. Aid projects help by **replacing unsafe homes with stronger materials** and improving **roads, electricity, and drainage**. • Many children in slums **cannot go to school**, and adults struggle to find well-paid jobs. Aid projects **build schools and offer job training**, helping people **earn more money and escape poverty**. • Many areas often **lack hospitals and doctors**, making it hard for people to get medical care. Bottom-up aid funds **clinics, vaccinations, and hygiene education**, helping communities **stay healthy and work towards a better future**.

Lesson	1. Core knowledge – Highlight the knowledge you don't know or are less sure about
Lesson 1 – Where are the world's mountain ranges?	• A mountain is an area of land over 600m above sea-level. • A mountain range is an area where many mountains are found. • The Himalayas are located in central Asia on the border of India and China. Other important mountains are the Urals, Alps and Rockies. • The Andes are located to the west of South America and are the longest mountain range.
Lesson 2 - How were the Himalayan Mountains formed?	• Many of the world's mountains are formed when two tectonic plates collide (move towards each other) e.g. the Himalayas. • The Himalayas in Asia were formed when the Indian plate collided with the Eurasian Plate. • Sediment brought by rivers was deposited at the bottom of the Tethys sea and compressed into sedimentary rock. • When the plates collide, the sedimentary rock is compressed creating fold mountains.
Lesson 3 – How are glaciers formed on mountains?	• Glaciers form in mountains where there are large amounts of snow in winter and low summer temperatures. • Snowflakes accumulate in a hollow in the mountainside. The weight compresses the snow and it becomes a mass of solid ice. • The glacier becomes bigger and gravity causes it to move very slowly (around 25cm per day). • At the top (source) of the glacier snow accumulates and at the bottom (snout) the snow melts as temperatures decreases.
Lesson 4 – How are mountain valleys formed?	• A V-shaped valley is formed by vertical erosion from a river. • Freeze-thaw weathering de-stabilises the sides causing them to collapse forming a V-shape. • A U-shaped valley is formed by glacial erosion. • A glacier will erode the valley sides and bottom which steepens and deepens the valley into a U-shape

Lesson 5 – How are corries formed on a mountain?	• A corrie is an armchair shaped hollow in a mountainside with a steep back wall. • A corrie is eroded by plucking, where water freezes against the rock and as the glacier moves it pulls the rock off the mountainside. • A corrie is eroded by abrasion, where rocks held in the ice scrape the surrounding rock causing it to erode. • When ice in a corrie melts, a circular lake known as a tarn is formed at the bottom of the hollow.
Lesson 6 – What are the characteristics of earthquakes?	• An earthquake is the shaking of the Earth's surface caused by a sudden release of energy. Every year, there are millions of earthquakes, which last for 10 to 30 seconds. • The focus is where the earthquake starts, whereas the Epicentre is the point on the ground surface directly above the focus. • As the plates move towards each other, compressional forces cause a block of rock to suddenly slip upwards along a fault line which causes and earthquake. • Earthquakes are measured using the Moment Magnitude Scale (MMS) which measures the total energy released by an earthquake.
Lesson 7 – What were the effects and responses to the Nepal earthquake?	• Nepal is an LIC located in Asia between India and China. • On the 25th April 2015, a 7.8 magnitude earthquake struck Nepal causing death, injury and homelessness. • Immediate responses include search and rescue. • Video cameras, thermal imaging, carbon dioxide detectors and rescue dogs are used to detect signs of life. • Local knowledge and lifting equipment such as hydraulic jacks and diggers are used to rescue people trapped under buildings.
Lesson 8 – What is the impact of deforestation in Nepal?	• Many farmers in rural Nepal are very poor. • These hillslopes are covered in thick forest which provides a wealth of benefits for local people e.g. fuelwood, compost, fruits, mushrooms and nuts. • On a deforested hillslope, there is no interception, as a result, rainwater quickly reaches the ground and most water runs off across the surface leading to a greater chance of flooding. • Without tree roots and vegetation to slow the flow, runoff reaches the river more rapidly and less water has chance to infiltrate into the soil which leads to a greater chance of flooding.

History: Y8 Term 2

Keywords and Definitions

Activism – A type of campaign that uses action and resources to bring about change.

Boycott – Refusing to use/buy from organizations e.g. public transport.

Civil Rights Movement – Fight for social, economic and legal justice for African-Americans.

Discrimination - Unequal treatment based on a person's race.

Equality – the state of being equal, especially in status, rights, or opportunities.

Freedom Rides – Integrated bus rides through southern states challenging segregation.

Jim Crow Laws – Laws that made segregation legal in some states, races were 'separate but equal'.

Marches – Large gathering to demonstrate against racial injustice.

Ku Klux Klan (KKK) –Racist and violent hate group formed in 1865.

Lynch – A form of violence where a person is killed, often by hanging, without trial.

Literacy Test – A test taken and aimed to restrict African-American voting due to poor literacy skills.

Protest - statement or action expressing disapproval of or objection to something.

Racism – The idea that different races have different value in society.

Reconstruction – 1865 to 1877, period after the Civil War when laws were passed to give African Americans some new rights.

Segregation – Systematic separation of people based on race

Sit-In – African-Americans and white Protesters would sit in segregated establishments refusing to leave.

White Supremacy – The belief that white people constitute a superior race and should therefore dominate society.

Knowledge

The civil rights movement was a struggle for social justice that took place mainly during the 1950s and 1960s for Black Americans to gain equal rights under the law in the United States. The Civil War officially abolished slavery, but it didn't end discrimination against Black people—they continued to endure the devastating effects of racism, especially in the South. By the mid-20th century, black Americans, along with many other Americans, mobilized and began an unprecedented fight for equality that spanned two decades.

Jim Crow Laws were any law that enforced **segregation** and get their name from racist character.

Jim Crow Laws
These were any law that enforced **segregation** and get their name from racist character. Segregated facilities were commonly unequal in quality and include:
- Schools
- Cinemas
- Libraries
- Water Fountains
- Public Transport

Difficulties of the civil rights movement:
Violence – Southern states were extremely racist as they wanted to keep slavery. Groups like the KKK terrorised, beat and murdered African-Americans.

Racist Laws - Aimed at restricting and removing rights of African-Americans.

Economic - Discrimination led to few economic opportunities.

Successes of the civil rights movement:
Brown v. Board of Education (1954) - Ended segregation in schools.

Civil Rights Act of 1964 - Ended segregation and job discrimination.

Voting Rights Act of 1965 - Removed barriers to voting.

Fair Housing Act of 1968 - Banned discrimination in housing.

Key civil rights figures
Martin Luther King Jr - Martin Luther King Jr. was a leader in the civil rights movement. He promoted nonviolent protests and led the 1963 *March on Washington*.

Rosa Parkes - Rosa Parks was a civil rights activist who refused to give up her bus seat to a white person in 1955. It sparked the *Montgomery Bus Boycott*.

Malcolm X - Malcolm X was a prominent African-American leader who advocated for black empowerment and the use of self-defence.

Keywords and Definitions

Suffrage – The right to vote .

Suffragette – These campaigners used militant and direct action to gain suffrage.

Suffragist – These campaigners used peaceful and lawful means.

Vote – A formal choice during an election.

Force feeding – Feeding someone against their will .

Equality – the state of being equal, especially in status, rights, or opportunities.

rights - Entitlements or freedoms that individuals are legally or morally guaranteed to have.

Immigrant – Somebody who moves country to work.

Cat and Mouse Act 1913 – Allowed the hunger-striking prisoners to be released until they regained health after they would be re-imprisoned .

Martyr – A person who suffers or dies for a cause

LGBTQ+ - Refers to a group of identities (Lesbian, Gay, Bisexual, Trans, Queer +.

Knowledge

Civil rights in the UK have evolved through significant movements and legal changes. Women gained the right to vote with the 1918 Representation of the People Act, achieving full equality in 1928. The Windrush Generation, arriving after WWII, played a vital role in rebuilding the country but faced widespread racism and discrimination, which eventually led to stronger efforts for racial equality. LGBTQ+ rights advanced with the partial decriminalization of homosexuality in 1967, followed by the recognition of same-sex marriage in 2014. These milestones, alongside other key reforms, reflect the UK's ongoing journey towards greater inclusivity, justice, and equality for all citizens, regardless of gender, race, or sexual orientation.

Suffragists

Led by groups like the National Union of Women's Suffrage Societies (NUWSS), suffragists campaigned for women's suffrage through peaceful, legal means such as petitions, lobbying, and peaceful demonstrations. They aimed to persuade lawmakers through rational argument and gradual reform.

Suffragettes

Led by the Women's Social and Political Union (WSPU) and led by Emmeline Pankhurst, suffragettes adopted more militant and direct tactics, including protests, hunger strikes, arson, and acts of civil disobedience. They believed more aggressive actions were necessary to force attention to their cause.

Key Dates

1918: Representation of the People Act - women over 30 gained the right to vote.

1928: Equal Franchise Act - women gained equal voting rights with men, granting universal suffrage for those over 21.

1948: The first Windrush generation arrives in the UK to help rebuild following WW2

1967: The Sexual Offences Act decriminalized homosexual acts between men over 21 in England and Wales.

2014: Same-sex marriage was legalized in England and Wales with the Marriage (Same Sex Couples) Act. Scotland followed in 2014, and Northern Ireland in 2020.

Key members of the women's suffrage movement in the UK

Emmeline Pankhurst – Leader of the militant Women's Social and Political Union.

Christabel Pankhurst: Daughter of Emmeline, a key strategist in the WSPU.

Millicent Fawcett: Leader of the National Union of Women's Suffrage Societies (NUWSS), advocating peaceful campaigning.

Sylvia Pankhurst: Emmeline's daughter, who focused on working-class women and broader social reforms.

Emily Davison: A suffragette who became a martyr after stepping in front of the King's horse at the 1913 Epsom Derby.

Windrush Generation

- Men and women who migrated to the United Kingdom between 1948 and the early 1970s, primarily from Jamaica, Barbados, Trinidad and Tobago, and other Caribbean nations.
- The name comes from the *HMT Empire Windrush*, a ship that brought one of the first large groups
- These individuals were invited by the British government to help rebuild the UK after World War II, especially in sectors like healthcare, transport, and manufacturing.
- The Windrush Generation played a crucial role in shaping modern British society, contributing to the cultural, economic, and social fabric of the country. Many members of the Windrush Generation faced racism, discrimination, and harsh working conditions.

Mathematics:

Y8 Term 2
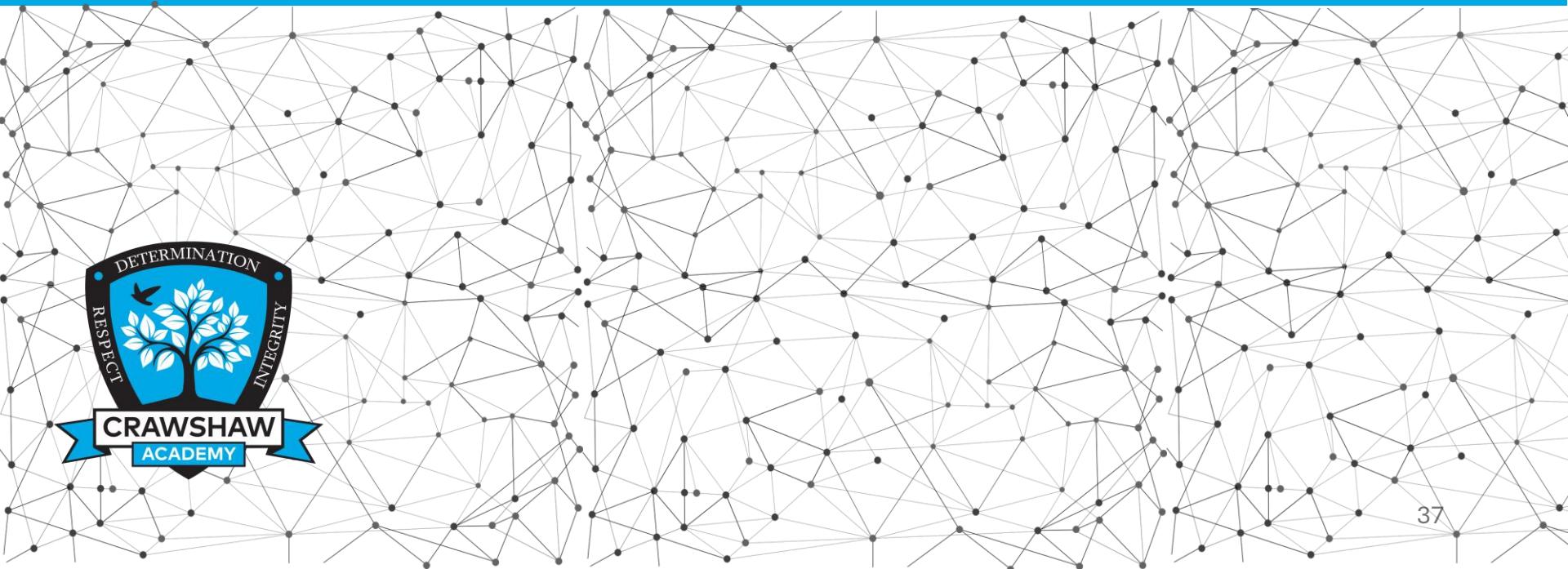
Mathematics

G4 Area, Volume and density

In this chapter, students strengthen their understanding of measurement by working with 2D and 3D shapes, focusing on calculating area, volume, and solving problems involving density. The chapter begins by reviewing the names and properties of 2D and 3D shapes, including the use of terms such as edges, vertices, and faces. Students consolidate their skills in finding the area of 2D shapes, including compound shapes, before progressing to recognising prisms and understanding their structure. They then learn to calculate the volume of cubes and cuboids, applying formulae in practical contexts. The chapter also introduces metric unit conversions for mass and capacity, supporting real-world problem solving. Students explore the relationship between mass, volume, and density, learning how to work with the appropriate units and apply this knowledge to multi-step problems. The chapter ends by exploring area and volume in similar shapes, providing an early introduction to geometric scaling. This combination of spatial reasoning, formula application, and real-world problem solving prepares students for further study in geometry and physical maths contexts

A6 Equations and inequalities

In this chapter, students develop their algebraic reasoning by learning to solve a range of equations and inequalities. The chapter begins with solving simple one- and two-step equations, then builds towards tackling more complex equations, including those involving fractions. Students then learn to form and solve equations from written problems, applying algebra to real-life and mathematical contexts. They extend their skills to equations with unknowns on both sides, developing the ability to structure and simplify multi-step solutions. The focus then shifts to inequalities, where students learn to understand, represent, and solve inequalities using similar strategies to those used for equations. They also represent solutions on a number line, and move on to forming inequalities from contexts and solving those with unknowns on both sides. Throughout the chapter, students are encouraged to apply logical steps, communicate their reasoning clearly, and make links between algebraic and graphical representations, supporting deeper understanding of solving conditions and constraints.

N9 Percentages

In this chapter, students develop a robust understanding of percentages and their applications in a variety of contexts. The chapter begins with calculating the percentage of an amount and converting between percentages and decimals, building fluency with key number relationships. Students then learn to use multipliers to find percentages efficiently, including percentages greater than 100%, which involves converting between decimals and percentages over 1. They apply this knowledge to percentage increases and decreases, reinforcing how multipliers model real-life percentage changes. The chapter continues with expressing one number as a fraction or percentage of another, both with and without a calculator, encouraging flexibility in method selection. Students then explore percentage change, learning how to calculate and interpret increases or decreases in various scenarios. Towards the end of the chapter, students are introduced to reverse percentage problems, such as finding the original value before a percentage change. They finish by choosing appropriate methods to solve a range of percentage problems, demonstrating their understanding in both practical and abstract contexts.

What do I need to be able to do?

Step 1 Name 2-D and 3-D shapes
Step 2 Area of a 2-D shape
Step 3 Area of a compound shape
Step 4 Recognise prisms (including language of edges and vertices)
Step 5 Volume of cubes and cuboids
Step 6 Convert metric units of mass and capacity
Step 7 Understand the units of mass/density/volume
Step 8 Solve problems with density, mass and volume
Step 9 Area and volume in similar shapes (E)

Keywords

2-D and 3-D Shapes – 2-D shapes are flat (like squares and circles). 3-D shapes have depth (like cubes and spheres)

Area – The amount of space inside a 2-D shape, measured in square units (e.g. cm^2)

Compound Shape – A shape made from two or more simple shapes

Prism – A 3-D shape with identical cross-sections along its length, described using faces, edges, and vertices

Volume – The amount of space a 3-D object occupies, measured in cube units (e.g. cm^3)

Metric Units – Standard units for measuring mass (grams, kilograms), capacity (millilitres, litres), and volume (cm^3, m^3)

Density – A measure of mass per unit volume

Mass – The amount of matter in an object, usually measured in grams (g) or kilograms (kg)

Similar Shapes – Shapes that have the same shape but different sizes, areas and volumes scale by square and cube of the scale factor

Area – The amount of space, measured in square units (e.g. cm^2)

Compound Shape – A shape made from two or more simple shapes, area is found by splitting into parts

Prism – A 3-D shape with identical cross-sections along its length, described using faces, edges, and vertices

Name 2D & 3D shapes

Cone
Circle
Cylinder
Square
Sphere
Rectangle
Cube
Triangle
Triangular Prism
Rhombus
Tetrahedron
Trapezium
Parallelogram
Cuboid
Square based Pyramid
Hexagon

Area of 2D shapes

Rectangle
Base x Height

Parallelogram and Rhombus
Base x Perpendicular height

Triangle
½ x Base x Perpendicular height

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

Area of a circle
$\pi \times radius^2$

Compound shapes

To find the area compound shapes often need splitting into more manageable shapes first.

Identify the shapes and missing sides etc first

Shape A – isosceles trapezium
Shape B – nonstandard trapezium

Shape A + Shape B = total area

$\frac{(5+7) \times 4}{2}$ + $\frac{(5+8) \times 7}{2}$

= 24 + 45.5
= 69.5cm²

Units

Recognise prisms

A solid object with two identical ends and flat sides

The cross section will also be identical to the end faces

A cylinder although with very similar properties does not have flat faces so is not categorised as a prism

Surface area - cylinders

The area of this face is the same as the circumference.

Circumference

The width of this face is the same as the circumference
$\pi \times diameter \times height$

$2 \times \pi \times radius^2 + \pi \times diameter \times height$

Compound Measures

Speed/Distance and Time formula

$\frac{D}{S \mid T}$

Density/Mass/Volume formula

$\frac{M}{D \mid V}$

Volumes

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

Cubes/ Cuboids = base x width x height

Remember multiplication is commutative

Cross section

Prisms and cylinders = area cross section x height

Areas – square units
Volumes – cube units

Height can also be described as depth

Areas and volumes can be left in terms of pi π

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

similar shapes

Similar shapes are an enlargement of one another.
Length, area and volume scale factors are all linked

Example:
Length scale factor = 2
Area scale factor = 2²
Volume scale factor = 2³

The volume of cylinder A is 80 cm³. Calculate the volume of cylinder B

Length scale factor = $\frac{6}{4}$ = 1.5

Volume of B = 80 × 1.5³ = 270cm³

Mathematics

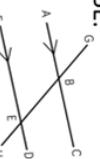**Knowledge Organisers : Year 8 HT3 G4 Area, Volume and density**

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

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

Self quizzing

Give the mathematical name of each shape.

10 cm

3 cm

2 cm

12 cm

13 cm

12 cm

2 cm

3 cm

4 cm

4 cm

4 cm
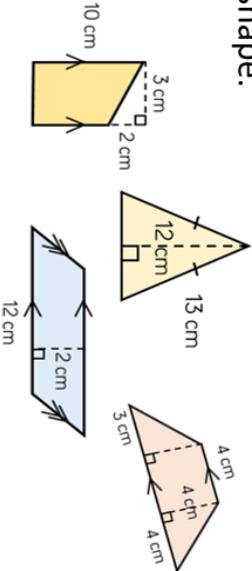
Find the areas of the shapes. Did you use the same method for each one?

Challenge Activities

Show that the area of the shape is 28 cm².

What smaller shapes did you split the shape into?

2 cm

2 cm

4 cm

10 cm

2 cm

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

eralucidneprp

ralumof

tiynifni

Extension work

Codes for related Independent Learning tasks on SPARX maths:

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

Name 2-D and 3-D shapes – M276, M767
Area of a 2-D shape – M390, M610, M241, M705, M231
Area of a compound shape – M269, M996
Recognise prisms M767, M276, M661
Volume of cubes and cuboids – M765, U786
Convert metric units of mass and capacity – M774, U388
Understand the units of mass/density/volume – U910, U527, U256
Solve problems with density, mass and volume – U910, U527, U256, U181
Area and volume in similar shapes (E) – U630, U110

Sparx Maths

What do I need to be able to do?

Step 1 Solve simple 1 and 2-step equations
Step 2 Solve more complex equations
Step 3 Solve fractional equations
Step 4 Form and solve equations
Step 5 Solve equations with unknowns on both sides
Step 6 Understand and use inequalities
Step 7 Inequalities on a number line
Step 8 Solve simple inequalities
Step 9 Form and solve inequalities
Step 10 Solve inequalities with unknowns on both sides (E)

Keywords

Solution a value we can put in place of a variable that makes the equation true
Variable a symbol or a number that we don't know yet.
Equation an equation says that two things are equal – it will have an equals sign =
Expression numbers, symbols and operators grouped together to show the value of something
Identity On equation where both sides have variables that cause the same answer includes ≡
Linear an equation or function that is the equation of a straight line
Intersection the point that two lines meet
Inequality an inequality compares two values showing if one is greater than, less than or equal to another.

Solve equations with brackets

$3(2x + 4) = 30$

Expand the brackets

$6x + 12 = 30$
$-12 \quad -12$
$6x = 18$
$-6 \quad -6$
$x = 3$

Equations with unknown on both sides

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

Form and solve inequalities

Find the possible range of values

Two more than treble my number is greater than 11

$3x + 2 > 11$

Solve

$x > 3$

Inequalities with unknown on both sides

Solving inequalities has the same method as equations

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

Check it!

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

Inequalities with negatives

Method 1 Make x positive first

$2 - 3x > 17$
$+3x \quad +3x$
$2 > 17 + 3x$
$-17 \quad -17$
$-15 > 3x$
$\div3 \quad \div3$
$-5 > x$

Smaller ——— Bigger
-7 -5 -3

x is true for any value smaller than -5

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

Method 2 keep the negative

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

x is true for any value bigger than -5

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

This cannot be true...

$x < -5$

Formulae and Equations

Formulae – all expressed in symbols

Substitute in values

Equations – include numbers and can be solved

Solutions on a number line

$x < 1$
-3 -2 -1 0 1 2 3
Both represent values less than 1

$x \leq 1$
-3 -2 -1 0 1 2 3
Includes the value 1

$x > 1$
-3 -2 -1 0 1 2 3
Both represent values more than 1

$x \geq 1$
-3 -2 -1 0 1 2 3
Includes the value 1

● Includes the value it sits above
○ Does NOT include the value it sits above

-3 -2 -1 0 1 2 3 4
Values less than or equal to 3 but also more than -1
$-1 < x \leq 3$
This includes the integer values 0,1,2,3

Rearranging Formulae (one step)

$y \xrightarrow{+z} x$
$y \xleftarrow{-z} x$

$y = x + z$
$y = x - z$

$x = y + z$
Rearrange to make y the subject
$y = x - z$

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

Rearranging can also be checked by substitution

Language of rearranging....
Make XXX the subject
Change the subject
Rearrange

Retrieval Practice

1) A graph of the sequence $5n - 2$ is drawn. Will the points lie in a straight line? How do you know?

2) Find the value of $a + 2b$ when $a = 7$ and $b = 2$

3) Work out the next term in the sequence.

   5   10   20   40   ___

4) Calculate the area of the triangle.

   8 cm
   20 cm

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

Self quizzing

Find expressions that simplify to $8x + 10y$

Substitute $x = 7$ into each of these expression:

$5x$	$2x$	$8x - 3x$	$x + x$
$2 + 4x$	$3x + 2x$	$6x - x$	$4x + 2$

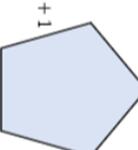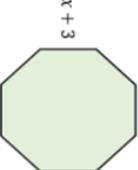Which expressions give you the same answers?
Why?
Repeat with a different value of x.
What do you notice?

Challenge Activities

The perimeter of the regular octagon is less than the perimeter of the regular pentagon.

🔴 Show this information as an inequality in terms of x

🔴 Find the smallest possible integer value of x

$x + 3$
$2x + 1$

Topic Links

This topic links to:

• Sequences, Algebra, bar modelling

Additional Resources

To further practice and develop your knowledge see:

• https://corbettmaths.com/contents/
  Number: 9

Extension work

Codes for related Independent Learning tasks on SPARX maths:

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

Solve simple 1 and 2-step equations – M707, M634, U755, U325
Solve more complex equations – M401, M647, M902, U325
Solve fractional equations – M401, M647, U505
Form and solve equations – M957, U599, U137
Solve equations with unknowns on both sides – U759, U738, U145
Understand and use inequalities – M554, U870
Inequalities on a number line – M384, U509
Solve simple inequalities – M118, U759
Form and solve inequalities – U337
Solve inequalities with unknowns on both sides (E) – U738

Sparx Maths

What do I need to be able to do?

Step 1 Percentage of an amount
Step 2 Convert between percentages and decimals
Step 3 Use multipliers to find percentages
Step 4 Convert between decimals and percentages greater than 1
Step 5 Percentage increase using a multiplier
Step 6 Percentage decrease using a multiplier
Step 7 Percentage increase and decrease using a multiplier
Step 8 Express one number as a fraction or a percentage of another (calculator)
Step 9 Express one number as a fraction or a percentage of another (non-calculator)
Step 10 Percentage change
Step 11 Find the original value given a percentage
Step 12 Choose appropriate methods to solve problems

Keywords

Percent: parts per 100 — written using the / symbol

Decimal: a number in our base 10 number system. Numbers to the right of the decimal place are called decimals

Fraction: a fraction represents how many parts of a whole value you have

Equivalent: of equal value

Reduce: to make smaller in value

Growth: to increase / to grow

Integer: whole number, can be positive, negative or zero

Invest: use money with the goal of it increasing in value over time (usually in a bank)

Multiplier: A number you multiply by to increase or decrease another number

Change: The difference between two values, often used when something increases or decreases

Value: The amount something is worth or represents in a calculation

Profit: The amount of money gained after subtracting costs from income

Convert FDP

70/100 → This also means 70 ÷ 100

70 out of 100 squares = 70 "hundredths" = 7 "tenths" = 0.7

Using a calculator S↔D

Convert to a decimal × 100 converts to a percentage

This will give you the answer in the simplest form

Be careful of recurring decimals
e.g. $\frac{1}{3} = 0.33333333 = 0.\dot{3}$
The dot above the 3

70 hundredths = 70/

Convert FDP < and > 100/

100 hundredths = 100/
10 tenths

140 hundredths = 140/
14 tenths

40 hundredths = 40/
4 tenths

100/ + 40/
1 + 0.40
= 140

Express as a / — Non-calculator   Percent – per hundred

7 per every 10 are orange. This means that 70 per every 100 are orange $\frac{7}{10}$ = $\frac{70}{100}$ = 70/

27 per every 50 shaded. 54 per every 100 shaded $\frac{27}{50}$ = $\frac{54}{100}$ = 54/

Denominator 100   Equivalent fractions

Express as a / — Calculator

Rosie $\frac{13}{30}$

Can't use equivalence easily to find per hundred

This the same as 13 ÷ 30

$\frac{13}{30}$ → × 100 → 43.3333....% = 43/

Decimal percentages are still a percentage

Percentage decrease: Multipliers

100/ − 58/ = 42/
100 − 0.58 = 0.42

Decrease by 58/

Multiplier Less than 1

Percentage increase: Multipliers

100/ + 12/ = 112/
100 + 0.12 = 1.12

Increase by 12/

Multiplier More than 1

Fraction/Percentage of amount

Find $\frac{3}{5}$ of £60

£60

10/ of £60 = £6
50/ of £60 = £30
60/ of £60 = £36

Remember
$\frac{3}{5}$ = 60/
60/ of £60 = 0.6 × 60 = £36

Remember
$\frac{3}{5}$ = 60/
$\frac{3}{5}$ = 0.6
= £36

Percentage change

Difference in value × 100 / Original value

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

£200
£125

Percentage loss
$\frac{75}{200}$ × 100 = 37.5/

All values of change compare to the ORIGINAL value

I bought a house for £180,000. I later sold it for £216,000

£180000
£216000

Money made (profit value)
$\frac{36000}{180000}$ × 100 = 20/

Choose appropriate method

Have you represented the question in a bar model?
Can you use a calculator?

The language and wording of the question is the key

N9 - PERCENTAGES

Retrieval Practice

1) Simplify the expression $k^8 \div k^4$

2) Find the 6th term of the sequence given by $\frac{n}{2}(n + 3)$

3) Expand $a(7 + b + a)$

4) What is the area of a square with sides 12 m?

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

Percentage of an amount – M437, M905, U554, U349
Convert between percentages and decimals – M264, U888
Use multipliers to find percentages – M905, U349
Percentages using a multiplier – M533, U671
Percentage increase and decrease using a multiplier – M533, U671

Express one number as a fraction or a percentage of another (calculator) – U554, U349

Express one number as a fraction or a percentage of another (non-calculator) – M235, M264

Percentage change – M476, M533, U773, U671
Find the original value given a percentage – U286
Choose appropriate methods to solve percentage problems – U717

Careers Focus – Where could this take you?

As a **small business owner** I need to be aware of the percentage profit or loss I make on each transaction. I need to carefully consider my mark up and how much I sell my products for to ensure I stay profitable. My percentage profit is key to understanding whether or not I can afford the charges from third party sellers.

Self quizzing

Match the multiplier with the correct percentage statement.

20% decrease	92% decrease	
140% increase	1.3	
1.4	0.8	
35% decrease	40% increase	30% increase
2.4	0.08	0.65

Challenge Activities

💡 Annie has some sweets. Teddy gives her some sweets and she now has 50% more.

Rosie gives her some sweets and she now has an extra 40%. Annie now has 63 sweets.

How many did she have originally?

Topic Link

This topic links to:
Fractions, decimals and percentages

Additional Resources

To further practice and develop your knowledge see Sparx clips above or Videos 233, 391 :

https://corbettmaths.com/contents/

Mathematics
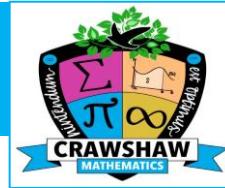
Year 8 HALF TERM 4:

A7 Indices

In this chapter, students develop a deeper understanding of powers and indices, learning to apply the rules of indices to simplify and manipulate expressions. The chapter begins with adding and subtracting algebraic expressions that include indices, reinforcing the need to combine only like terms. Students then focus on the key laws of indices for multiplication and division, learning how powers behave when terms are combined. They explore the addition and subtraction laws for indices, building confidence in simplifying algebraic expressions involving powers. The chapter progresses to more advanced index laws, including powers of powers, negative indices, and fractional indices, helping students understand the broader structure of powers and how they connect to roots and reciprocals. By the end of the chapter, students are able to simplify a wide range of expressions using index laws, laying the groundwork for further algebraic manipulation and the study of exponential functions in later years.

N10 Standard form

In this short chapter, students are introduced to standard form as a way of representing very large and very small numbers efficiently. The chapter begins with understanding positive and negative powers of 10, forming the foundation for working with standard form. Students then learn how to write and interpret numbers greater than 1 and numbers between 0 and 1 in standard form, recognising the structure and significance of the power of 10. Finally, students are taught how to use a calculator to enter and interpret standard form, preparing them for more advanced scientific and mathematical contexts

S3 Interpret and represent data

In this chapter, students extend their statistical knowledge by exploring different types of data and developing strategies to effectively interpret and represent it. The chapter begins by distinguishing between qualitative and quantitative data, helping students identify the most suitable methods for analysing each type. They examine outliers and errors, learning how these can affect the interpretation of data sets. Students revisit and consolidate their understanding of averages (mean, median, mode) and range, and explore how to choose the most appropriate average depending on the context. The chapter then moves on to comparing distributions using both averages and range, enabling students to draw meaningful conclusions from different data sets. Students develop skills in calculating averages from ungrouped frequency tables and interpreting both grouped discrete and grouped continuous data, with an emphasis on choosing effective representations such as bar charts, histograms, and frequency polygons. Finally, students learn to calculate the mean and mode from grouped frequency tables, building confidence with more complex data and supporting future work in statistics. Through a blend of practical interpretation and formal methods, students become confident in handling real-world data and communicating their findings clearly.

What do I need to be able to do?

Step 1 Add and subtract expressions with indices
Step 2 Multiply and divide expressions with indices
Step 3 Addition law for indices
Step 4 Subtraction law for indices
Step 5 Addition and subtraction laws for indices
Step 6 Powers of powers (E)
Step 7 Negative indices (E)
Step 8 Fractional indices (E)

Keywords

Base: The number that gets multiplied by a power
Power: The exponent – or the number that tells you how many times to use the number in multiplication
Exponent: The power – or the number that tells you how many times to use the number n multiplication
Indices: The power or the exponent
Coefficient: The number used to multiply a variable
Simplify: To reduce a power to its lowest term
Product: Multiply

Addition/Subtraction with indices

Coefficient
$5x^2 + 4x^4$
Term   Term   Power

Expression

$5x^2 + 2x^2$
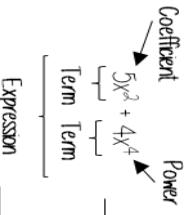
$5x^2 + 6x^4 - 3x^2 + x^4$

Only similar terms can be simplified if they have different powers, they are unlike terms

Each square represents x^2 and each cube represents x^4

$7x^2$

$2x^2 + 7x^4$

Divide expressions with indices

$\dfrac{24}{36}$

$\dfrac{2 \times 2 \times 2 \times 3}{2 \times 3 \times 2 \times 3}$

$\dfrac{2}{3}$

$\dfrac{5a^3b^2}{15ab^6}$

$\dfrac{5 \times a \times a \times a \times b \times b}{3 \times 5 \times a \times b \times b \times b \times b \times b \times b}$

$\dfrac{a^2}{3b^4}$

Cross cancelling factors shows cancels the expression

$\dfrac{23 a^7 y^2}{5 d b^6}$

This expression cannot be divided (cancelled down) because there are no common factors or similar terms

Multiply expressions with indices

$4b \times 3a$
$\equiv 4 \times b \times 3 \times a$
$\equiv 4 \times 3 \times b \times a$
$\equiv 12ab$

$2b^4 \times 3b^2$
$\equiv 2 \times b \times b \times b \times b \times 3 \times b \times b$
$\equiv 2 \times 3 \times b \times b \times b \times b \times b \times b$
$\equiv 6b^6$

$5t \times 9t$
$\equiv 5 \times t \times 9 \times t$
$\equiv 5 \times 9 \times t \times t$
$\equiv 45t^2$

There are often misconceptions with this calculation but break down the powers

Addition/Subtraction laws for indices

$3^5 \times 3^2$
$= (3 \times 3 \times 3 \times 3 \times 3) \times (3 \times 3)$

The base number is all the same so the terms can be simplified

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

3^7

$3^5 \div 3^2$

$\dfrac{3 \times 3 \times 3 \times 3 \times 3}{3 \times 3}$

$\dfrac{3^0}{1} \quad \dfrac{3^3}{1} \quad \dfrac{3^3}{3^3}$

3^3

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

FRACTIONAL INDICES

$25^{\frac{1}{2}} = \sqrt{25} = 5$ Square root

$8^{\frac{1}{3}} = \sqrt[3]{8} = 2$ Cube root

$\dfrac{m}{a^n} = \sqrt[n]{a^m}$

$25^{\frac{3}{2}} = (\sqrt[2]{25})^3 = 5^3 = 125$

Remember that this is the same as $(25^{\frac{1}{2}})^3$

NEGATIVE FRACTIONAL INDICES

$8^{-\frac{1}{3}} = \dfrac{1}{8^{\frac{1}{3}}}$
$= \dfrac{1}{2}$

$a^{-m} = \dfrac{1}{a^m}$

Remember this means the cube root of 8!

$25^{-\frac{3}{2}} = \dfrac{1}{25^{\frac{3}{2}}}$
$= \dfrac{1}{5^3}$
$= \dfrac{1}{125}$

Remember this is the same as $(25^{\frac{1}{2}})^3$

A7 - INDICES

Retrieval Practice

1) Find the rule for the nth term of the sequence.

7, 10, 13, 16...

2) Solve the equation $1 = 2 + 4n$

3) Expand $3b(2a - 4b + 1)$

4) Work out $(9 - 3 \times 4) \div 2$

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

Extension work

Codes for related Independent Learning tasks on SPARX maths:

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

Odd and subtract expressions with indices – U662, U105
Multiply and divide expressions with indices – U235, U694
Addition law for indices – U235 Subtraction law for indices – U694
Addition and subtraction laws for indices – U694
Powers of powers (E) – U662, U772
Negative indices (E) – U694, U985 Fractional indices (E) – U772

Sparx Maths

Topic Link

This topic links to:
Square and cube numbers, collecting like terms

Additional Resources

To further practice and develop your knowledge see Sparx clips above or

https://corbettmaths.com/contents/

Anagrams

orewp

easb

netenopx

dsencii

Self quizzing

Expand the brackets and simplify as far as possible.

$3x(y + z) + 5y(z + 2x)$

$6a \times 3b \times 2a + 5ab(3b - 2a)$

$5pq(p + q) - 2q^2(p + p^2)$

Work out the divisions.

$18 \div 3$

$18a \div 3$

$18ab \div 3$

$18a \div 3b$

$18a \div 3a$

$36ab \div 3ab$

Challenge Activities

Solve the equations.

$2^x \times 2^4 = 2^{12}$

$2^{12} \div 2^y = 2^3$

$3^5 \times 3^6 \div 3^a = 3^{20}$

$3^{14} \div (3^b)^3 = 3 \times 3^3 \times 3$

$(2^2)^z = 2^{12}$

What do I need to be able to do?

Step 1 Positive and negative powers of 10
Step 2 Numbers greater than 1 in standard form
Step 3 Numbers between 0 and 1 in standard form
Step 4 Standard form on a calculator

Keywords

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

Positive powers of 10

1 billion = 1 000 000 000
10 x 10 x 10 x 10 x 10 x 10 x 10 x 10 x 10

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

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

Numbers between 0 and 1

0.054
= 5.4 x 10⁻²

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

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

Mental calculations

6.4 x 10³ x 1000
= 6.4 x 10³ x 10³
= 6.4 x 10⁶

Not in Standard Form
Use addition for indices rule

(2 x 10³) ÷ 4
= (2 ÷ 4) x 10³
= 0.5 x 10³

Divide the values

8 x 10⁵ x 3
= 24 x 10⁵
= 2.4 x 10¹ x 10⁵
= 2.4 x 10⁶

Not in Standard Form
Use addition for indices rule

Remember the layout for standard form
$A \times 10^n$
Any number between 1 and less than 10
Any integer

Multiplication and division

1.5 x 10⁵
0.3 x 10³

(1.5 x 10⁵) ÷ (0.3 x 10³)

15 ÷ 0.3
= $\frac{1.5 \times 10^5}{0.3 \times 10^3}$
x 10⁵ ÷ 10³
= 5 x 10²

Division questions can look like this

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

Recall addition and subtraction laws for indices — they are needed for the calculations

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

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

Standard form with numbers > 1

Example
3.2 x 10⁴
= 3.2 x 10 x 10 x 10 x 10
= 32000

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

Non-example
0.8 x 10⁴
5.3 x 10⁷

Order numbers in standard form

6.4 x 10⁻²	2.4 x 10²	3.3 x 10⁰	1.3 x 10⁻¹
0.064	240	1	0.13

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

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

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

Use a place value grid to compare the numbers for ordering

Negative powers of 10

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

1 x $\frac{1}{1000}$
1 x 10⁻³
0.001

Any value to the power 0 always = 1

Negative powers do not indicate negative solutions

Addition and Subtraction

Method 1
= 600000 + 800000
= 1400000
= 1.4 x 10⁵

6 x 10⁵ + 8 x 10⁵

Method 2
= (6 + 8) x 10⁵
= 14 x 10⁵
= 1.4 x 10¹ x 10⁵
= 1.4 x 10⁶

This is not the final answer

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

Only works if the powers are the same

Using a calculator

Input 1.4 and press [x10ˣ] Then press 5 (for the power)
Input 3.9 and press [x10ˣ] Then press 3 (for the power)
Press [=]

1.4 x 10⁵ x 3.9 x 10³

This gives you the solution

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

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

Click calculator for video tutorial

Answer 5.5 x 10⁸

N10 - STANDARD FORM

Retrieval Practice

1) Express "3 out of 20" as a percentage.

2) Write down the decimal multiplier to increase a number by 85%.

3) Simplify the expression $m^{18} \div m^3$

4) Simplify the ratio $18 : 24 : 30$

Extension work

Codes for related Independent Learning tasks on SPARX maths:

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

Positive and negative powers of 10 – U330, U534
Numbers greater than 1 in standard form – U330
Numbers between 0 and 1 in standard form – U534
Standard form on a calculator – U161

Sparx Maths

Self quizzing

Match the cards of equal value.

4.05×10^{-3}	4.05×10^{-3}	0.54
4.05×10^{-2}	0.054	0.054
0.0504	5.4×10^{-1}	0.045
0.0405	0.0405	0.00405
4.5 × 10⁻²	5.04×10^{-2}	0.00405

Career Focus – Where could this take you?

Being an astronomer needs standard form, because you're working with such enormous numbers as planets are so far away. also being a scientist needs standard form because you're working with small numbers too.

Topic Link

This topic links to:
Powers of 10
Commutativity and distributivity

Additional Resources

To further practice and develop your knowledge see Sparx clips above or

https://corbettmaths.com/contents/

Anagrams

werop

decini

eaevitgn

seab

Challenge Activities

The average human body can produce 3 million red blood cells every second.

How many red blood cells does the average human body produce in one year?

Give your answer in standard form.

What do I need to be able to do?

Step 1 Types of data
Step 2 Outliers and errors
Step 3 Averages and range
Step 4 Choose the most appropriate average
Step 5 Compare distributions using averages
Step 6 Averages from frequency tables
Step 7 Represent and interpret grouped discrete data
Step 8 Represent and interpret continuous data grouped into equal classes
Step 9 Mean and mode from a grouped frequency table (E)

Keywords

Data – Information collected for analysis, can be qualitative (words) or quantitative (numbers)

Outlier – A value that is much higher or lower than the rest of the data

Error – A mistake in data collection or recording

Mean – The average, found by adding all values and dividing by the number of values

Median – The middle value when data is in order

Mode – The most frequent value in a data set

Range – The difference between the highest and lowest values

Frequency Table – A table showing how often each value or group of values occurs

Grouped Data – Data that is organized into intervals or classes

Distribution – The way data is spread out, often compared using averages and range

Frequency tables and polygons

MID-POINTS

Mid-points are used as estimated values for grouped data. The mid-point of each group

We do not know from grouped data where each value is placed so have to use an estimate for calculations

x Weight(g)	Frequency
40 < x ≤ 50	1
50 < x ≤ 60	3
60 < x ≤ 70	5

The data about weight starts at 40 So the axes can start at 40
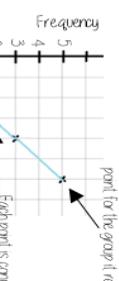
Each point is plotted at them point for the group it represents

Each point is connected with a straight line

Mid-point
Start point + End point
2

Averages from a table

Non-grouped data

Number of Strings	0	6	8	12
Frequency	0	6	8	6
Subtotal	0	6	8	12

The data in a list: 0,0,0,0,0,0,1,1,1,1,1,1,3,3,3,3,3,3,3,3

Mean   Total number of strings   = 1
Total frequency

Overall Frequency 20

Total number of strings 20

Grouped data

x Weight(g)	Frequency	MidPoint	MP x Freq
40 < x ≤ 50	1	45	45
50 < x ≤ 60	3	65	195
60 < x ≤ 70	5	65	325

Overall Total 565
Overall Frequency 9

Mean 62.8g

The data in a list: 45, 55, 55, 55, 65, 65, 65, 65, 65

Averages from lists

The Mean

A measure of average to find the central tendency... a typical value that represents the data

24, 8, 4, 11, 8.

Find the sum of the data (add the values)
55
Divide the overall total by how many pieces of data you have
55 ÷ 5
Mean = 11

The Median

The value in the center in the middle of the data

24, 8, 4, 11, 8.

Put the data in order
4, 8, 8, 11, 24
Find the value in the middle
4, 8, 8, 11, 24
Median = 8
NOTE If there is no single middle value find the mean of the two numbers left

The Mode (The modal value)

This is the number OR the item that occurs the most (It does not have to be numerical)

24, 8, 4, 11, 8.

Mode = 8

For Grouped Data

The modal group – which group has the highest frequency

Comparing distributions

Comparisons should involve a statement of average and central tendency, as well as a statement about spread and consistency

Calculate an average ... Either **mean mode or median**

Also calculate the **range** which is used for consistency

This shows how spread out the data is

Choosing the appropriate average

The average should be a representative of the data set – so it should be compared to the set as a whole - to check if it is an appropriate average

Here are the weekly wages of a small firm

£340   £340   £340
£260   £340   £300
£260   £300   £700

The Mean   = £307
The Median = £250
The Mode   = £340

Put the data back into context

Mean/Median – too high (most of this company earn £340)

Mode is the best average that represents this wage

It is likely that the salaries above £340 are more senior staff members – their salary doesn't represent the average weekly wage of the majority of employees

Which average best represents the weekly wage?

S3 – INTERPRET AND REPRESENT DATA

Retrieval Practice

1) Compare the ranges of the boys' and girls' test scores.

Boys: 10, 12, 15, 18, 20
Girls: 8, 16, 18, 18, 20

2) Would you use a bar chart or a frequency diagram to represent continuous data?

3) The table shows the time taken to complete a puzzle.

How many people took less than 10 minutes?

Time (minutes)	Frequency
$0 \leq t < 5$	4
$5 \leq t < 10$	6
$10 \leq t < 15$	12
$15 \leq t < 20$	18
$20 \leq t < 25$	10

4) Round 0.356 to 1 significant figure.

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.

Self quizzing

Tommy checks the weights, in grams, of 10 packets of crisps.

25.7	25.9	26.1	25.2	24.8
25.6	51.2	24.3	25.9	25.8

🚩 Find median and mean weights of the packets of crisps both with and without the outlier value.

🚩 What effect does removing the outlier have on the mean?

🚩 What effect does removing the outlier have on the median?

Challenge Activities

Dora and Jack do a spelling test every week.
The table summarises their performances over a term.

	Dora	Jack
Mean	7.5	7.4
Range	6	2

I'm better than Jack at spelling, as both my mean and range are higher.

Do you agree with Dora?
Why or why not?

Extension work

Codes for related Independent Learning tasks on SPARX maths:

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

Types of data – U322
Averages and range – U536, U456, U260, U291
Choose the most appropriate average – U717
Compare distributions using average and the range – U507, U717
Averages from an ungrouped frequency table – U569
Represent and interpret grouped discrete data – U312, U981
Represent and interpret continuous data grouped – U877, U840
Mean and mode from a grouped frequency table (E) – U877, U260

Sparx Maths

Topic Link

This topic links to:
Find the median and the range, find the mean

Additional Resources

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

MFL: Y8 Term 2

Countries and Continents

en Angleterre	- to England
en France	- to France
en Belgique	- to Belgium
en Espagne	- to Spain
en Suisse	- to Switzerland
en Afrique	- to Africa
en Asie	- to Asia
en Europe	- to Europe
en Tunisie	- to Tunisia
à la Réunion	- to Reunion Island
au Maroc	- to Morrocco
au Canada	- to Canada
au Sénégal	- to Senegal

Accommodation

rester	- to stay
dans un hôtel	- in a hotel
dans un appartement	- in an apartment
dans une auberge de jeunesse	- in a youth hostel
chez ma famille	- at my family's house
en centre-ville	- in the city centre
au bord de la mer	- at the seaside
à la campagne	- in the countryside
aux montagnes	- in the mountains

Accommodation Opinion

ennuyeux	- boring
intéressant	- interesting
nul	- rubbish
tranquille	- quiet
propre	- clean
sale	- dirty
vif	- lively
cher	- expensive
affreux	- awful
étonnant	- amazing
amusant	- fun
moderne	- modern

Transport

en train	- by train
en car	- by coach
en voiture	- by car
en métro	- by underground
en autobus/bus	- by bus
en taxi	- by taxi
en avion	- by plane
à vélo	- by bike
aler	- to go
arriver	- to arrive

Dream Holiday

je voudrais	- I would like
aller à Londres	- to go to London
habiter en France	- to live in France
habiter dans une grande maison	- to live in a big house
avoir une voiture très cool	- to have a cool car
faire le tour du monde	- to travel around the world
rencontrer mon acteur préféré	- to meet my favourite actor
rencontrer ma actrice préferée	- to meet my favourite actress
faire un sport extreme	- to do an extreme sport
voyager à l'étranger	- to travel abroad
être influenceur/influenceuse voyage	- to be a travel influencer

Activities on Holiday

aller au restaurant	- to go to a restaurant
visiter des musées	- to visit museums
faire du camping	- to go camping
faire de la natation	- to go swimming
faire des activités sportives	- to do sports activities
rester au lit	- to stay in bed
acheter des souvenirs	- to buy souvenirs
manger une glace	- to eat an ice cream
aller à la plage	- to go to the beach
nager dans la mer	- to swim in the sea
faire des promenades	- to go for walks
prendre le soleil	- to sunbathe

Food and Drink

boire	- to drink
je bois	- I drink
tu bois	- you drink
il/elle boit	- he/she drinks
nous buvons	- we drink
vous buvez	- you(all) drink
ils/elles boivent	- they drink
manger	- to eat
la glace	- ice cream
la viande	- meat
le café	- coffee
le fruit	- fruit
le sandwich au fromage	- cheese sandwich
les légumes	- vegetables
le pain	- bread
le poisson	- fish
le poulet	- chicken
le thé	- tea
l'eau	- water
les frites	- chips

Stretch & Challenge

J'adore	- I love
J'aime beaucoup	- I really like
J'aime assez	- I quite like
Je déteste	- I hate
Je n'aime pas du tout	- I don't like at all

GRAMMAR

	masc.	fem.	pl.
some	du	de la	des

TV

mon émission préférée, c'est ...	- my favourite show is...
regarder	- to watch
les documentaires	- documentaries
les émissions de sport	- sports programmes
les émissions de télé-réalité	- reality TV shows
les émissions musicales	- music shows
les jeux télévisés	- game shows
les séries	- series
les séries policières	- police series
les séries américaines	- American series
la méteo	- the weather

Reading

lire	- to read
je lis	- I read
tu lis	- you read
il/elle/on lit	- he/she/we read
nous lisons	- we read
vous lisez	- you (all) read
ils/elles lisent	- they read
un livre sur les animaux	- a book on animals
un manga	- a manga
un roman	- a novel
un roman policier	- a detective novel
un roman d'amour	- a romance novel
un livre de science-fiction	- a sci-fi book
un roman historique	- a historical novel

Online Activities

envoyer des e-mails	- to send emails
faire beaucoup de choses	- to do lots of things
faires des recherches	- to do research
faire les devoirs	- to do homework
faire des achats	- to go shopping
faire des quiz	- to do quizzes
jouer à des jeux en ligne	- to play games online
aller sur les réseaux sociaux	- to go on social media
aller sur des blogs	- to go on blogs
aller sur des forums	- to go on forums
écouter de la musique	- to listen to music
partager des photos / des vidéos	- to share photos/videos

Films

je suis fan de	- I am a fan of
je ne suis pas fan de	- I am not a fan of
j'ai une passion pour	- I have a passion for
j'ai horreur de	- I can't stand
les comédies	- comedies
les films d'action	- action films
les films d'amour	- romantic films
les films d'arts martiaux	- martial arts films
les films d'horreur	- horror films
les films historiques	- period dramas
les films de science-fiction	- sci-fi films
les films policiers	- detective films

Opinions

à mon avis	- in my opinion
je pense que	- I think that
je trouve ça	- I find that
je crois que	- I believe that
amusant	- funny
assez bien	- quite good
ennuyeux	- boring
génial	- great
intéressant	- interesting
nul	- rubbish
passionnant	- exciting
pratique	- practical
formidable	- super
étonnant	- amazing
affreux	- awful

Stretch & Challenge

trés	- very
un peu	- a little
trop	- too
vraiment	- really
assez	- quite

GRAMMAR

Past Tense:
1. je -> j'ai
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)**

Stretch & Challenge
j'envoie – I send
tu envoies – you send
il envoie – he sends
elle envoie – she sends
on envoie – we send
nous envoyons – we send
vous envoyez – you all send
ils/elles envoient – they sent

Remember:
De + les = des
Example: je suis fan **de + les** documentaires
Je suis fan **des** documentaires

Countries

Ich fahre nach	- I travel to
Spanien	- Spain
Deutschland	- Germany
Frankreich	- France
Italien	- Italy
Griechenland	- Greece
Österreich	- Austria
der Türkei	- Turkey
der USA	- USA
Japan	- Japan

Accommodation

Ich bleibe	- I stay
in einem Hotel	- in a hotel
in einem Ferienhaus	- in a holiday house
in einem Zelt	- in a tent
in einer Ferienwohnung	- in a holiday apartment
mit meiner Familie	- with my family
auf dem Land	- in the countryside
in der Stadtmitte	- in the town centre
an der Küste	- by the coast

Opinions

schmutzig	- dirty
sauber	- clean
wunderbar	- wonderful
bequem	- comfortable
unbequem	- uncomfortable
laut	- loud
schön	- beautiful
modern	- modern
alt	- old
teuer	- expensive

Numbers 1-100

eins	- 1
zwei	- 2
drei	- 3
vier	- 4
fünf	- 5
sechs	- 6
sieben	- 7
acht	- 8
neun	- 9
zehn	- 10
elf	- 11
zwölf	- 12
dreizehn	- 13
vierzehn	- 14
fünfzehn	- 15
sechzehn	- 16
siebzehn	- 17
achtzehn	- 18
neunzehn	- 19
zwanzig	- 20
dreißig	- 30
vierzig	- 40
fünfzig	- 50
sechzig	- 60
siebzig	- 70
achtzig	- 80
neunzig	- 90
ein hundert	- 100

Activities on holiday

im Meer schwimmen	- to swim in the sea
zum Strand gehen	- to go to the beach
wandern gehen	- to go hiking
im Restaurant essen	- to eat at a restaurant
ein Buch lesen	- to read a book
Boot fahren	- to go for a boat ride
im Hotel entspannen	- to relax in the hotel
einen Ausflug machen	- to go on a trip
Souvenirs kaufen	- to buy souvenirs
Fotos machen	- to take photos
Sport machen	- to do sports
ein Eis essen	- to eat ice cream

Future Holidays

ich werde	- I will
ein Museum besuchen	- to visit a museum
im Meer tauchen	- to dive in the sea
nach London fahren	- to travel to London
in einem Schloss bleiben	- to stay in a castle
Feuerwerke sehen	- to see fireworks
in die Berge fahren	- to go to the mountains
tanzen	- to dance
ins Theater gehen	- to go to the theater
ein Picknick machen	- to have a picnic

Food & Drink

ich esse	- I eat
ich trinke	- I drink
ich möchte	- I would like
eine Cola	- a cola
einen Kuchen	- a cake
Obst	- fruit
ein Eis	- an ice cream
eine Wurst	- a sausage
einen Hamburger	- a hamburger
Pommes	- chips
ein Wasser	- water
einen Kaffee	- a coffee

GRAMMAR

	werden	will
ich (I)	werde	I will
du (you)	wirst	you will
er (he)	wird	he will
sie (she)	wird	she will
wir	werden	we will
ihr	werdet	you all will
sie	werden	they will

Transport

Ich fahre	- I travel
mit dem Bus	- by bus
mit dem Auto	- by car
mit dem Schiff	- by ship
mit dem Flugzeug	- by plane
mit dem Flugzeug	- by plane
mit dem Fahrrad	- by bike
zu Fuß	- on foot

Stretch & Challenge

Usse "ich möchte" (I would like to) to talk about dream holidays. The infinitive goes to the end.
Ich möchte ins Theater gehen
I would like to go to the theatre

TV & Film Genres

einen Film	a film
einen Krimi	a thriller
eine Komödie	comedy
eine Serie	a series
eine Seifernoper	a soap opera
eine Sportsendung	a sports programme
die Nachrichten	the news
eine Liebeskomödie	a rom-com
einen Horrorfilm	a horror film
eine Quizsendung	a quiz show

Opinions

ich finde, dass	I think that
Ich glaube, dass	I believe that
Meiner Meinung nach	in my opinion
lustig	funny
aufregend	exciting
langweilig	boring
kompliziert	complicated
trauerig	sad
witzig	witty
blöd	stupid

Reading

Comics	comics
Zeitungen	newspapers
Krimis	crime stories
Liebesromane	romantic novels
Fantasyromane	fantasy novels
Bücher über [Tiere]	books about [animals]
historische Romane	historical novels
Jugendromane	young adult novels

Activities online

chatten	to chat
Videos gucken	to watch videos
Musik streamen	to stream music
die Hausaufgaben machen	to do homework
Online-Spiele spielen	to play online games
online einkaufen	to shop online
soziale Medien benutzen	to use social media
Videos teilen	to share videos
Fotos hochladen	to upload photos
die Nachrichten lesen	to read the news

Stretch & Challenge

beliebt	popular
bekannt für	known for
Filme	Films
Musik	Musik
Literatur	Literature
erfolgreich	successful
ehrgeizig	ambitious
selbstbewusst	confident

Celebrities

Mein Lieblingschauspieler	my favourite actor (male)
Meine Lieblingsschauspielerin	My favourite actress is
hat/ist	has/is
heißt	is called
kommt aus	comes from
ich finde ihn	I find him
ich finde sie	I find her
schön	beautiful
jung	young
alt	old
begabt	talented
kreativ	creative

Past Tense Actitivities

Ich habe...gesehen	I watched
Ich habe...gelesen	I read
Ich habe...gespielt	I played
Ich habe...gehört	I listened
Ich habe...gegessen	I ate
Ich habe...gemacht	I did
Ich habe...getanzt	I danced
Ich habe...geteilt	I shared
Ich habe...hochgeladen	I uploaded
Ich habe...eingekauft	I shopped

GRAMMAR

Forming Plurals:

Feminine words usually end in –n

die Sendung → die Sendungen

Masculine and neuter words usually end in –e

der Roman → die Romane

But sometimes they end in –er

das Buch → die Bücher

	haben
ich (I)	habe
du (you)	hast
er (he)	hat
sie (she)	hat
wir	haben
ihr	haben
sie	haben

Past Tense:

To form the past tense, you need to add the correctly conjugated form of "haben" to your pronoun. Your past participle (the past tense of a verb) goes to the end of the sentence:

Ich habe Fußball gespielt

Music: Y8 Term 2
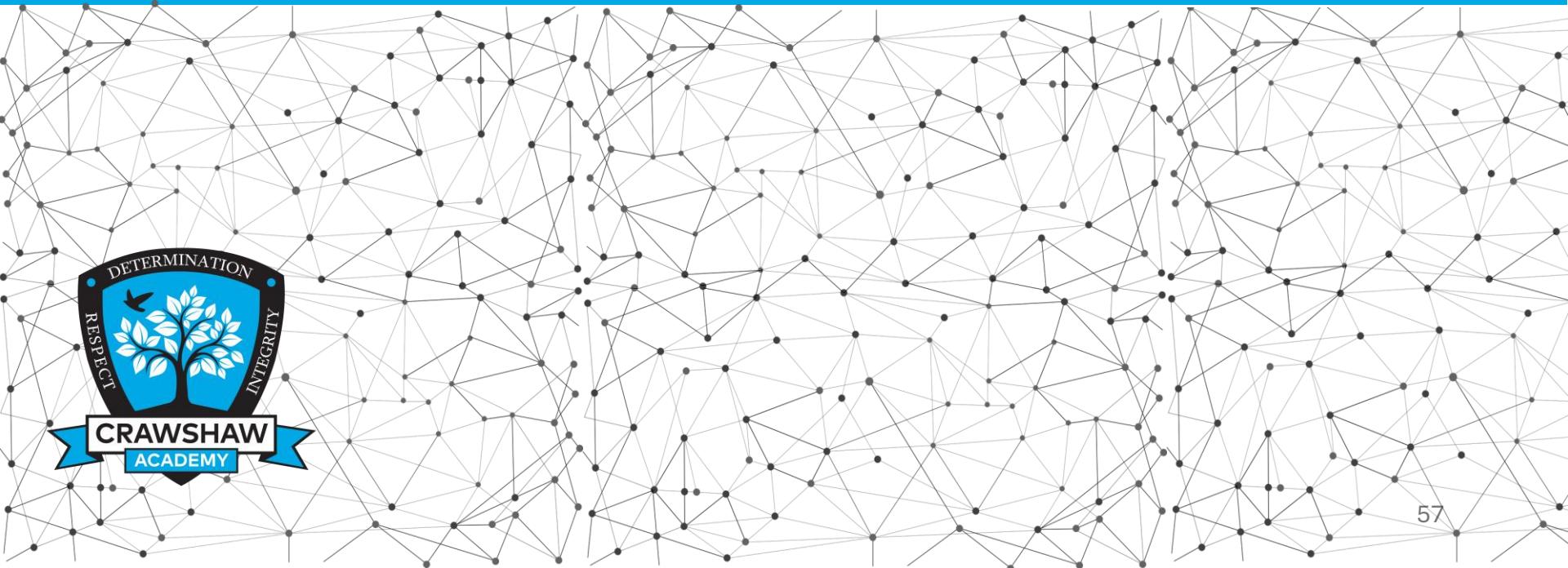
Computer and Video Game Music

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".

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.

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

Musical Features of Computer and Video Game Music

JUMPING BASS LINE	STACCATO ARTICULATION	CHROMATIC MOVEMENT	SYNCOPATION
Where the bass line often moves by **LEAP** (**DISJUNCT MOVEMENT**) leaving 'gaps' between notes	Performing each note sharply and detached from the others. Shown by a dot.	Melodies and bass lines that ascend or descend by semitones. Chromatic Scale	Accenting the weaker beats of the bar to give an "offbeat" jumpy feel to the music.
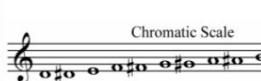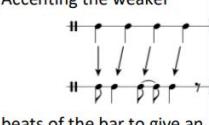
How Computer and Video Game Music is Produced

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.

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.

Famous Computer and Video Game Music Composers and their Soundtracks

Koji Kondo
Super Mario Bros. (1985)
The Legend of Zelda (1986)

Michael Giacchino
Jurassic Park (1997)
Medal of Honour (1999)
Call of Duty (2003)

Mieko Ishikawa
Dragon Slayer (1993)

Daniel Rosenfield & Lena Raine
Minecraft (2011 onwards)

Martin O'Donnell and Michael Salvatori
Halo (2002)

Rom Di Prisco
Fortnite (2017)

Year 8 Music Knowledge Organiser - Blues

The origins of the Blues

During the 18th and 19th centuries thousands of people were taken as slaves from Africa to America. For these people life became a nightmare. Many died on the long journey by sailing ship. Those that survived were sold in auctions and put to work on farms in the Southern states of America. Families were often split up. The life of slavery was cruel and horrible. Blues music evolved from earlier forms of musical expression like work songs and spirituals. These songs, often sung by enslaved people and their descendants, reflected the hardships and experiences of their lives.

Key Artists

Robert Johnson

Muddy Waters

B.B. King

Bessie Smith

12 bar blues chord sequence

Walking Bassline

Blues Scale
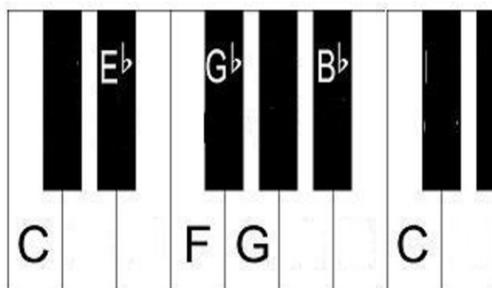
Use the Blues scale to *improvise* (make up on the spot) a melody over the 12 Bar Blues chords

Key Words

Word	Meaning
Tempo	The speed of the music
Dynamics	Differences in the volume
Structure	The order of the piece (verse, chorus, verse etc.)
Texture	The amount of layers in the music (how many instruments playing at once)
Pitch	How high or low the notes are
Instrumentation	The different musical instruments used
Chord	A group of notes played together.
Melody	The tune of the music

The Blues uses chords I, IV and V. Knowing this can help you work out the Blues sequence in any key.

PE: Y8 Term 2

Methods of Fitness Training

Training Method	Definition	Advantages	Disadvantages	Sports
Continuous Training	Is sub-maximal aerobic exercise that has no breaks or rest. It lasts for a minimum of 20 minutes and can improve aerobic endurance.	No equipment or facilities needed (cheap). Can be done on your own.	Boring. No change of pace. Can cause impact injuries.	Marathon running. Cycling. Swimming.
Fartlek Training	Form of continuous training which varies in pace and terrain. It is used in aerobic endurance and can improve anaerobic fitness at higher intensities.	No equipment or facilities needed (cheap). More interesting. Can be done on your own.	High intensity can lead to injury if not avoided. A safe route needs to be planned out.	Football Rugby Netball
Circuit Training	Consists stations organized in a circuit usually to work on different fitness-based aerobic or anaerobic exercises at each station. Intensity is measured by time at each station; the number of circuits completed; the rest time between stations; the number of repetitions performed at each station.	Variety of stations prevents boredom. Can be skill based as well as fitness-based exercises adapted for any sport.	Equipment can be costly if not available already set up early to get maximum use out of it	Can be adopted to suit all sports

Methods of Fitness Training

Training Method	Definition	Advantages	Disadvantages	Sports
Interval Training	High-intensity exercise followed by periods of rest usually anaerobic exercise but can also improve speed but can also work aerobically improves speed but an advantage is that it allows recovery during session	Can be used to improve health (aerobic) and fitness (anaerobic) no equipment needed	Repetitive boring need planning keep track time intervals	Usually for speed an adopted other sports
Plyometric Training	Maximal intensity involving jumping bounding exercises eccentric contraction immediately followed concentric contraction involves powerful explosive movements improves power speed strength	Develops power quickly no equipment	Cause injury	Basketball Long jump Hurdles
Weight Training	Involves lifting weights to improve muscular strength and endurance.	Can target specific muscle groups. Improves overall strength.	Requires equipment. Risk of injury if not done correctly.	Bodybuilding, Weightlifting, Powerlifting.
Static Stretching	Involves holding a stretch for a period of time to improve flexibility.	Improves flexibility. Can be done anywhere without equipment.	Can be boring. Risk of overstretching and injury.	Gymnastics, Dance, Yoga.

WHAT IS BADMINTON

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

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

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

Rules and Regulations

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

Court Marking and Serving

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

Key Terms/Vocabulary

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

Odd   Even

Serve

Overhead Clear

Underarm Clear

Drop Shot
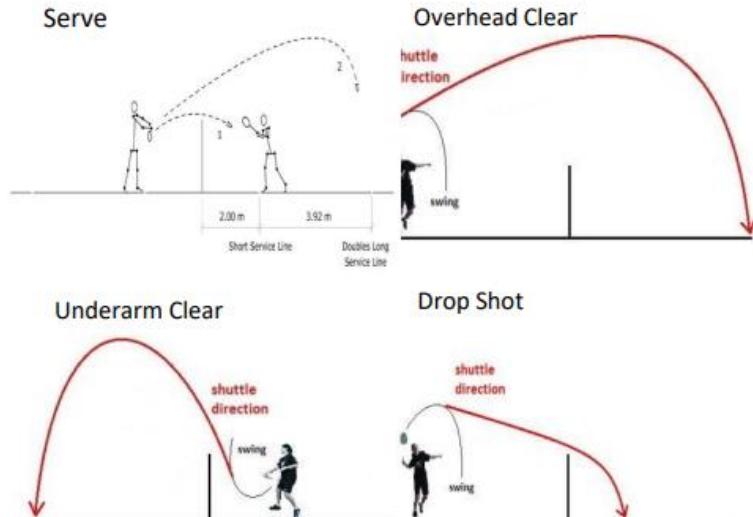
1. Introduction & Ready Position

Key Teaching Points (KTP's)
- Shake hands grip (forehand)-
- Backhand grip (thumb grip)-
- Ready position: feet shoulder-width, knees bent, racket in front

When would I need to be able to use this skill?
To prepare for any shot and move quickly across the court- To return to a neutral position after each shot

2. Forehand Serve

Key Teaching Points (KTP's)
- Forehand grip-
- Racket below waist-
- Non-racket foot forward-
- Contact shuttle diagonally to service box

When would I need to be able to use this skill?
To start a point legally in singles and doubles- To serve deep and push opponent to the backcourt

3. Backhand serve
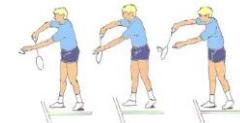
Key Teaching Points (KTP's)
- Thumb on flat side of grip
- Shuttle held near racket face
- Short, controlled flick below waist
- Contact in front of body

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

4. Overhead Clear

Key Teaching Points (KTP's)
- Forehand grip
- Sideways stance, non-racket foot forward
- Contact shuttle high and in front
- Full follow-through above head

When would I need to be able to use this skill?
To move opponent to the back of their court-
When defending and needing time to recover.

5. Drop Shot

Key Teaching Points (KTP's)
- Similar setup to overhead clear
- Minimal follow-through
- Light push/tap- Shuttle drops just over net

When would I need to be able to use this skill?
Minimal follow-through- Light push/tap
Shuttle drops just over net
To draw opponent to the front of the court
To change the pace and exploit space in front of the court

6. Net Shot

Key Teaching Points (KTP's)
- Light grip
- Contact shuttle in front of body
- Soft push or tap
- Keep racket up and ready

When would I need to be able to use this skill?
To win points near the net
When opponent has played a short shot and left the front court open

7. Underarm Clear

Key Teaching Points (KTP's)
- - Forehand grip
- Racket starts low, swing low to high
- Step forward with racket foot
- Use wrist for height and depth
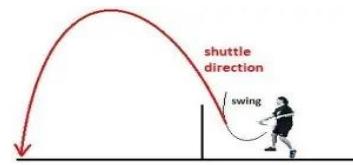
8. Game Play

Key Teaching Points (KTP's)
- Serve correctly based on score
- (odd = left, even = right)
- Apply correct court markings-
- Use varied shot selection strategically

Scoring system

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

- A successful free throw is worth one point. The free throw is taken from behind the free throw line with five other players (3 defenders and 2 attackers) lining up along the side of the free throw line in spaces marked on the floor

- A basket scored from within the three-point line (the large semi-circle on the floor) is worth two points

- A basket scored from behind the three-point line is worth is worth three points. For the shot to count the shooter must have both feet behind the three-point line at the moment of release

Timing regulations

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

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

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

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

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

Basic Rules

- Basketball is a team passing game played with the hands.

- Each team tries to throw the ball into a target that is above head height.

- It is played with three main rules concerned with:-
  - Contact
  - Dribbling
  - Footwork while holding the ball

Key Terms/Vocabulary

- Ball control
- Catching
- Set/Form shot
- Bank shot
- Lay up
- Passing
- Dribbling
- Offense
- Defence
- Grip
- Handling
- 'BEEF'
- Angles
- Rebound

- Chest
- Bounce
- Double dribble
- Attacking
- Stance
- Triple threat
- Man to man
- Jump shot
- Pass and cut
- Violation
- Javelin
- Pivot
- Crossover
- Hesitation
- Spin
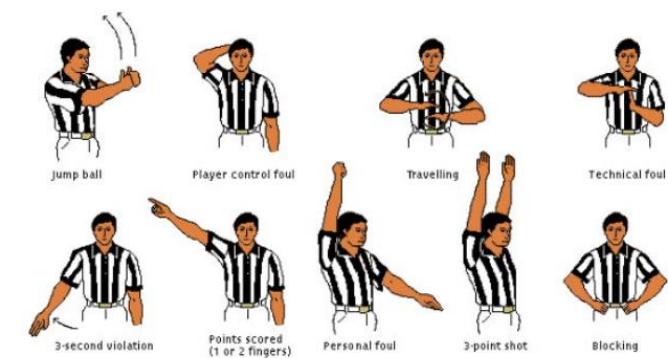
1. Shooting: Recap Lay-up and introduction to weak hand lay-ups

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

When would I need to be able to use this skill?
Remember, a Lay-up shot is used near the basket while a player is on the move. Lay-ups should be practiced off both feet to allow you to approach the basket from either side to maximise the chances of scoring.
Top tip: Use the backboard to your advantage.

2. Develop Passing: Javelin and Overhead

Key Teaching Points (KTP's)
- One hand pass starting with bent arm and turning the body
- As pass is made the weight is shifted forward
- Ball released with quick snap of elbow, wrist and fingers
- Keep two hands on the ball as long as possible

When would I need to be able to use this skill?
A javelin pass is used over long distances. Alternatively, the Overhead pass is made with the ball held above head height. This pass is useful for tall players or for all players passing over smaller or close marking opponents.

3. Develop Pivoting/Stop and Triple Threat

Key Teaching Points (KTP's)
- Balanced stance with Weight on ball of pivot foot
- Chest leads (front turn) or Back leads on (reverse turn)
- Pivot on ball of foot
- Step forwards (front turn) or Drop other foot back (reverse turn)

When would I need to be able to use this skill?
When in possession of the ball, the rules allow you to take as many steps as you need in any direction with one foot while *pivoting* (turning) on your other foot. The foot that you pivot with, or turn on, is called the *pivot foot*. A pivot is used to either improve position without violating the rules or protect the ball from defensive player.

4. Develop Dribbling: Crossover, hesitation and spin techniques

Key Teaching Points (KTP's)
- Head up, see basket
- Cross ball in front at backwards angle (close to body)
- Switch hands
- Control dribble at knee level
- Body and non-dribbling hand protect ball

When would I need to be able to use this skill?
The crossover dribble is important in the open court on a fast break, to get open on your drive to the basket, and create an opening for your shot. Your success is based on how sharply you change your dribble from one direction to another.

5. Offensive skills (attacking): Outwitting an opponent - Give and Go

Key Teaching Points (KTP's)
- Player passes to team-mate (chest/bounce/overhead)
- Player makes a step to move away from the direction of the pass
- Player then changes direction and cuts to basket
- Lead hand up and catch ball with two hands

When would I need to be able to use this skill?
A Give and Go or otherwise know as a 'pass and cut' is an attacking manoeuvre in which a player passes the ball to a team-mate and cuts towards basket for a return pass. By performing this Team play it helps to get a player free by two team-mates working together.

6. Defensive skills: Man to man marking

Key Teaching Points (KTP's)
- Desire to defend well is key to success
- Stay in a balanced stance (head over waist, your back is straight, chest is out)
- Force player sideline or baseline (away from middle of court)
- Keep an arm's length distance at all times
- Keep eyes on the opponent's chest (easy for offensive player to fake with their head, eyes, or body whereas most difficult to fake with their chest)

When would I need to be able to use this skill?
One on one defence – a style of defence where each player is assigned to guard a specific opponent regardless of where they go in the attack.

7. Additional shooting: Jump shot

Key Teaching Points (KTP's)
- Place feet shoulder width apart, toes pointing straight head, knees bent
- Hold ball chest height.
- Extend the legs/ankles by jumping straight up
- While in flight, extend back, shoulders and elbow
- Flex the wrist and fingers forwards and release the ball (Highest point)

When would I need to be able to use this skill?
A jump shot is similar to shooting a one-hand set shot except for two basic adjustments. In a jump shot you align the ball higher and shoot after jumping. The purpose of the jump shot is to rise above the defensive players reach when shooting.

Team shirt
Short
Socks
Shin guards
Boots
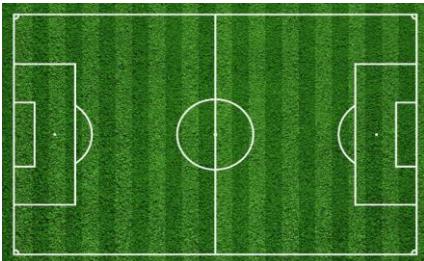
Football Basics

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

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

The Offside Rule in Football

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

Key Terms/Vocabulary

- Ball control
- Passing
- Dribbling
- Running with the ball
- Turning
- Shooting
- Tackling
- Goalkeeping
- Attacking
- Defending
- Touch
- Short/push pass
- Instep
- Hook
- Laces
- Block
- Body position
- Aerial control
- Long pass
- Driven
- Lofted
- Chip
- Space
- Volley/half volley
- Distribution
- Foul
- Direct/ Indirect
- Goal-kick
- Offside
- Opposition
- Awareness
- Penalty
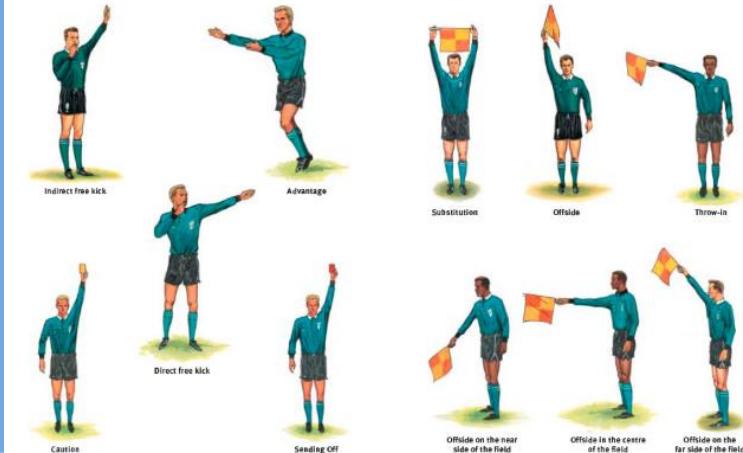
Winning the Game

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

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

Indirect free kick   Advantage   Substitution   Offside   Throw-in

Direct free kick

Caution   Sending OFF   Offside on the near side of the field   Offside in the centre of the field   Offside on the far side of the field

PE Knowledge Organiser: Y8 – Football Techniques

1. Ball control and familiarity: Aerial control

Key Teaching Points (KTP's)
- Players must judge the flight of the ball
- Players need to read the depth and speed of an incoming ball
- Move into the right position and use the ideal part of the body to take control

When would I need to be able to use this skill?
Different techniques, such as heading, chest control, or volleying, can be used to control the ball in the air. Aerial control is crucial for winning aerial duels, receiving long passes or redirecting the ball to teammates.Tip: Practice a variety of techniques to master this skill!

2. Range of Passing: Long pass – lofted/driven and chip pass

Key Teaching Points (KTP's)
- Approach
- Body shape
- Contact. Part of ball and foot
- Weight, accuracy and follow through

When would I need to be able to use this skill?
Passing is the ability to pass the ball to another teammate. It is important that you are able to pass accurately over short and long distances. Tip: Remember the ball travels far quicker by passing than attempting to dribble/run with the ball!

3. Running with the ball: How and when

Key Teaching Points (KTP's)
- Using a good first touch to get the ball out from under your feet
- Head up
- Bigger touches and longer strides *(than dribbling)*
- Using the laces (front of the foot) to keep the ball in front

When would I need to be able to use this skill?
Running with the ball is when a player travels through (or into) space at speed, with the ball at their feet. It is a great way of gaining territory or exploiting space opened up by a disorganised defence. It's an effective way of changing the possibilities of the attack. Every situation is unique and down to the quickness of thought from a player!

4. Turning with the ball: Into space, when and when not to turn
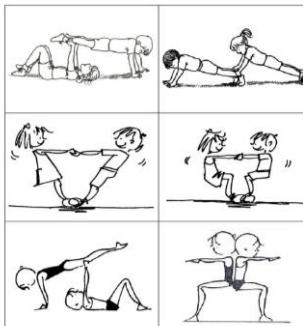

Key Teaching Points (KTP's)
- Scanning
- Timing
- Movement
- Positioning
- Deception
- Technique (Type of turn)

When would I need to be able to use this skill?
Players need to work on all six KTP's (above) to be efficient at turning. Tip: Develop as many different turns as possible, practicing against opposition whenever you can!

5. Shooting: Moving ball, half volley and volley

Key Teaching Points (KTP's)
- Watch the flight of the ball
- Position themselves accordingly
- Adjust their body orientation
- Choose the ideal time to make a connection with the ball

When would I need to be able to use this skill?
A volley is when a player strikes the ball first-time as it's dropping out of the air. If it bounces before the player connects with it, or they hit on the bounce, it's classed a s a half volley. Volleys are a highly technical finish and require lots and lots of practice!

6. Tackling: Defending 1v1, 2v2, 1v2

Key Teaching Points (KTP's)
- Close down space (1-2 steps away from attacker)
- Jockey, be patient and don't dive in
- Force attacker onto their weak foot
- Be on your toes
- Keep eye on the ball
- Win the ball with confidence when the time is right

When would I need to be able to use this skill?
Defending is not about being big, fast and strong. The best defenders are the smartest and don't just rely on their athleticism to win tackles; they use their minds.

7. Goalkeeping: Distribution and Supporting defence

Teaching Points (KTP's)
- Ball handling
- Decision making
- Release the ball quickly (if you can)
- Spatial awareness
- Positioning and movement

When would I need to be able to use this skill?
Distribution is the term used to cover all methods with which a goalkeeper can deliver the ball to one of their teammates. These include a GK being able to roll, throw, side-volley, half-volley, drive, clip, pass, and often with both feet.

Tips for building your sequence

- Consider your sequence to be a sentence.
- You need a clear start and end position.
- Include all the actions you have learnt from Y7 and 8
- Use locomotion to travel to and from different equipment.
- Communicate with your partner
- Enhance each others skills
- Plan transitions for entry and exit into different actions
- Don't forget your shape, can you refine it?
- Which dynamics do you use?
- When you have planned it REHEARSE REHEARSE REHEARSE

Performance and Assessment

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

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

Safety in Gymnastics

Listen to instructions and ensure you that you progress through the KTPs rather than attempting the skill from the top. Make sure equipment is set up correctly and ask a teacher to check any concerns you have. Make sure you are working in a space. Always make a plan with your partner abput what you aim to do and communicate to each other throughout. Do not just move away and leave them without support, If you need to back out, talk and do that controlled together.

Key Terms/Vocabulary

- Abduction
- Turn out
- Dynamics
- Flexion
- Levels

- Base
- Landing
- Take off
- Assisted
- Obstacle
- Counter

- Tension
- Aesthetics
- Symmetric
- Asymmetric
- Mirror
- Match

- Vault
- Compliment
- Contrast
- Flight
- Trust
- Communication

Partner balances

A partner balance usually involves two gymnasts working together, where one acts as the base, providing support and stability, and bears the weight of the other partner, known as the flyer.

Pyramids of Four
Beginner

Intermediate
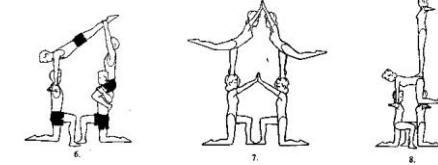
Shape: Match, mirror, compliment and contrast, symmetric and asymmetric

Key Teaching Points (KTP's)
- Matching shapes are performed in unison (same action at the same time)
- Mirroring – mirror image of each other (Developed – mirror down the middle and performed side by side)
- Compliment – similar actions might be on different levels
- Contrast – opposite in levels, size, dynamics

When would I need to be able to use this skill?
When holding a balance or inversion or rolling shape can make the skill more aesthetically pleasing. Shape can make a routine look more refined. These make partner work more interesting.

Balance: Counter balance and counter tension

Key Teaching Points (KTP's)
- Counter balance – POC may be further apart but the COG is leaning towards each other. If one was removed the other would fall. More equal spread of weight.
- Counter tension – POC may be closer together and partners COG pull away from each other. Creates tension in the hold.
- COMMUNICATE the action and plan together before starting and throughout

When would I need to be able to use this skill?
With a partner in a sequence , demonstrating strength and teamwork as well as balance

Partner weight bearing: Partner obstacle, assisted balance and lift

Key Teaching Points (KTP's) - Lift – flying angel
- Base lying on back, feet raised and knees bent
- Feet at 10 and 2 (turned out) on partners hips
- Hands togather –palms facing
- Take partners weight and hold
- Lower them safely to their feet.

When would I need to be able to use this skill?
This is one of many lifts you can try, if the flying angels is not a comfortable option for you then perhaps try 'bunk beds' or if you want a challenge a small group pyramid. Obstacles can be a leapfrog and don't forget you can create your own!

Intro to flight: Landing and take off

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

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

Sequence: Partner work assessment
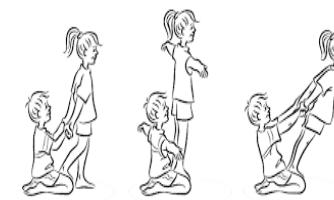
Key Teaching Points (KTP's)
Routine should include:
- Rolls
- Jumps
- Inversion
- CB CT Balance
- Weight bearing (obstacle, assisted or full lift)
- Locomotion
- Shapes that match mirror, compliment and contrast

For each action you should consider shape and dynamics (how it is performed).

Low level vaults: On and off equipment

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

VAULT: SQUAT ON

You will also experiment with the gate fault and straddle vault on lower level equipment. This is the beginning of flight

What is Rugby?

General – Rugby is a team sport. This means that you will work with other players on your team to attack and defend.
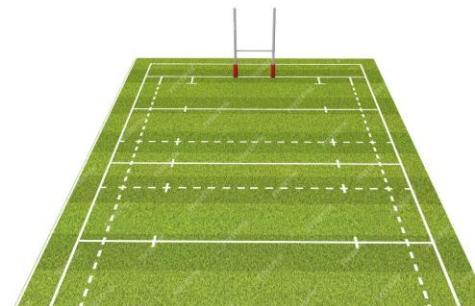
Scoring – To score in Rugby you can score in multiple ways, they are as follows: By placing the ball securely over the try line, by conversion (kicking the ball between the posts after a try has been scored or from a penalty), and by drop-goal.

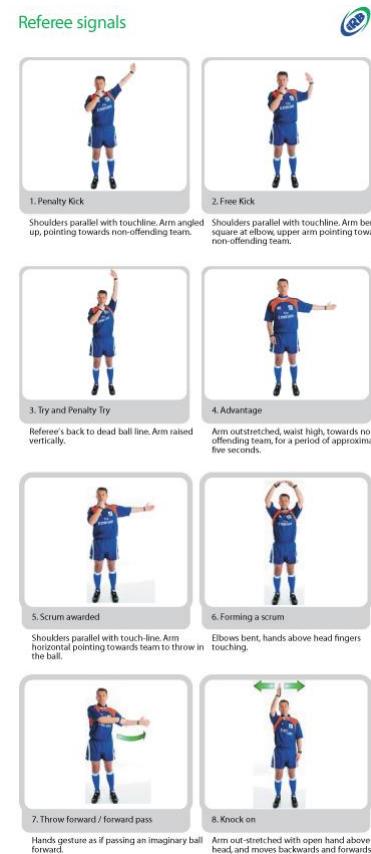Skills and Techniques – Rugby is a sport which requires a lot of body control and strength. Tackling is one of if not the most important skill when playing Rugby. You must be able to tackle safely and also effectively so that you stop your opponents from advancing up the pitch and scoring. Passing the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

Key Terms/Vocabulary

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

Referee signals

1. Penalty Kick
Shoulders parallel with touchline. Arm angled up, pointing towards non-offending team.

2. Free Kick
Shoulders parallel with touchline. Arm bent square at elbow, upper arm pointing toward non-offending team.

3. Try and Penalty Try
Referee's back to dead ball line. Arm raised vertically.

4. Advantage
Arm outstretched, waist high, towards non-offending team, for a period of approximately five seconds.

5. Scrum awarded
Shoulders parallel with touch-line. Arm horizontal pointing towards team to throw in the ball.

6. Forming a scrum
Elbows bent, hands above head fingers touching.

7. Throw forward / forward pass
Hands gesture as if passing an imaginary ball forward.

8. Knock on
Arm out-stretched with open hand above head, and moves backwards and forwards.

Rules and Regulations

1. Depending on which version (League or Union) you play depends on which rules are applied.

2. Points are awarded to teams via a try, conversation or drop goal.

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

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

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

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

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

1. Ball familiarisation: Grip and handling skills

Key Teaching Points (KTP's)
- Spread fingers wide in a "W" shape
- Fingers on seams, thumbs at the side
- Ball ideally in the fingertips, not the palm
- Ball carried with two hands before contact

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

2. Offload during a tackle

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

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

3. Upright Tackling

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

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

4. Playing the ball

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

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

5. Protective Falling & Side Tackle

Key Teaching Points (KTP's)
- Shorten steps on approach
- Hands up, target thighs, head to the side
- Chin to chest when falling, round shoulders
- Hold ball tight to chest when hitting ground

When would I need to be able to use this skill?
Falling correctly reduces injury risk and keeps possession. Side tackles are key to stopping an opponent's progress and creating chances to regain control of the ball.

6. Kicking: Grubber and Punt

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

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

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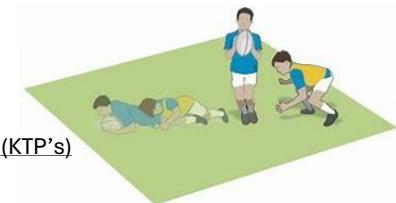
Key Teaching Points (KTP's)
- Shorten steps,
- target thigh,
- head behind,
- arms around thigh area squeeze player toward you.
- Finish on top

When would I need to be able to use this skill?
In rugby league, players need to be able to tackle to stop the opposing team from advancing down the field and scoring. Effective tackling helps regain control of the game, forces turnovers, and creates opportunities for their own team to go on the attack.
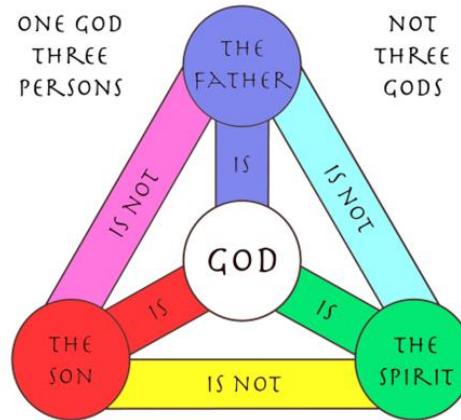
Religious Studies: Y8 Term 2

Keywords and Definitions

Key Term	Definition
Creation	the act by which God brought the universe into being.
Original Sin	the belief that all humans inherit a tendency to sin from Adam and Eve - It explains why the world is not perfect.
The Fall	how sin first entered the world through the actions of the first humans, Adam and Eve.
Incarnation	The incarnation is to appear in human form – Jesus was able to do this through his special birth.
Crucifixion	the Roman method of execution. Jesus was arrested, put on trial, and sentenced to death by crucifixion.
Resurrection	the belief that Jesus rose from the dead on the third day after his crucifixion.
Ascension	belief that Jesus was taken up to heaven, 40 days after his resurrection.
Liturgical worship	worship with a set order
Non-liturgical worship	worship without a set order.
Evangelism	share and spread the teachings of Christianity with others.

Knowledge

ONE GOD THREE PERSONS

NOT THREE GODS

THE FATHER

IS NOT

IS NOT

IS

GOD

IS

IS

THE SON

IS NOT

THE SPIRIT

The Holy Trinity

Many Christians believe that God is one but has three separate persons, called the Trinity. These are:
God the Father: (the creator of the world and our carer)
God the Son: (Jesus, the Son of God sent to save us all from sin)
God the Holy Spirit: (God's power which is active in the world and supports Christians in their daily lives)

Festivals
Christmas- a Christian festival that celebrates the birth of Jesus Christ, who Christians believe is the Son of God and the Saviour of the world.
Easter- the most important festival in Christianity, celebrating the resurrection of Jesus Christ from the dead.

Sources of authority
In Christianity, a source of authority is something or someone that helps guide Christians in what to believe and how to live. These include:
The Bible, Jesus, Religious Leaders, Conscience, The Church, Christian Tradition

The Sacraments
For a Christian, a Sacrament is a special kind of religious ritual or ceremony which is an outward sign of God making a real change happen. Some of the sacraments in Christianity are: **Baptism, Holy communion, Confession and Marriage.**
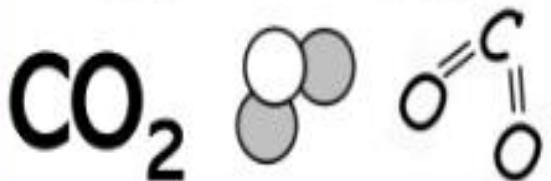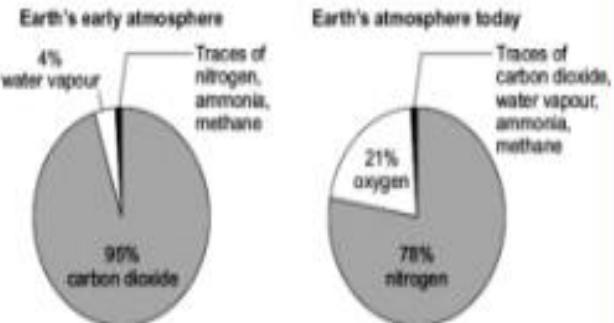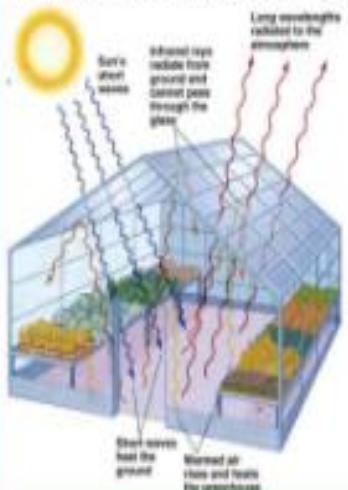
Science: Y8 Term 2

1. Carbon Dioxide in the Atmosphere

Earth's early atmosphere

4% water vapour — Traces of nitrogen, ammonia, methane
95% carbon dioxide

Earth's atmosphere today

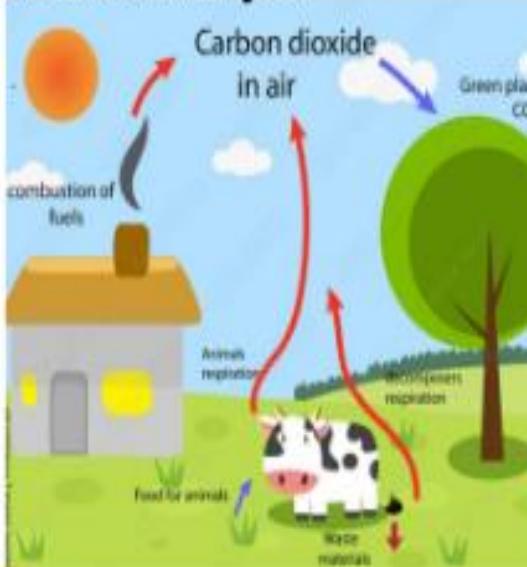Traces of carbon dioxide, water vapour, ammonia, methane
21% oxygen
78% nitrogen

CO_2

2. Recycling

Many of the world's resources are **finite** which means they are used up faster than they can be replaced.

REDUCE · RECYCLE · REUSE

Recycling means that we can reuse materials so that they are no longer wasted. This is a more sustainable method of reducing waste.

3. The Carbon Cycle

Carbon dioxide in air

Green pla

combustion of fuels

Animals respira

Decomposers respiration

Food for animals

Waste materials

4. The Greenhouse Effect

Long wavelengths radiated to the atmosphere

- Electromagnetic radiation at most wavelengths passes through the Earth's atmosphere.
- The Earth absorbs most of the radiation and warms up.
- The Earth radiates energy as infrared radiation.
- Some of the infrared radiation goes into space.
- Some of the infrared radiation is absorbed by greenhouse gases in the atmosphere.
- The lower atmosphere warms up.

5. Sun and Stars

Light Year – The distance light travels in one year
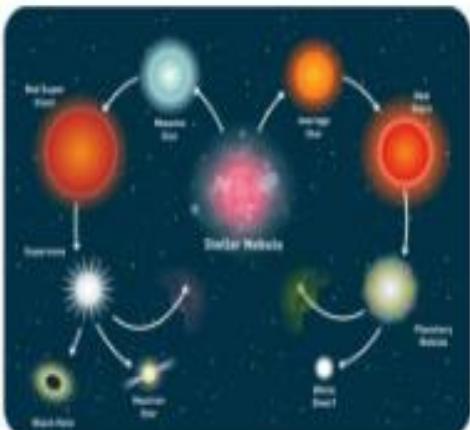
A cloud of gas/hydrogen and du called a nebula is pulled togethe gravity and heats up. Hydrogen join together to form helium. He nuclei join together to for heavie elements up to iron. The star expands to form a red supergia explodes to form a supernova. Elements heavier than iron are formed.

SCIENCE Y8 ECOSYSTEMS KNOWLEDGE ORGANISER

1. What do plants need to survive?

flower

leaf

fruit

stem
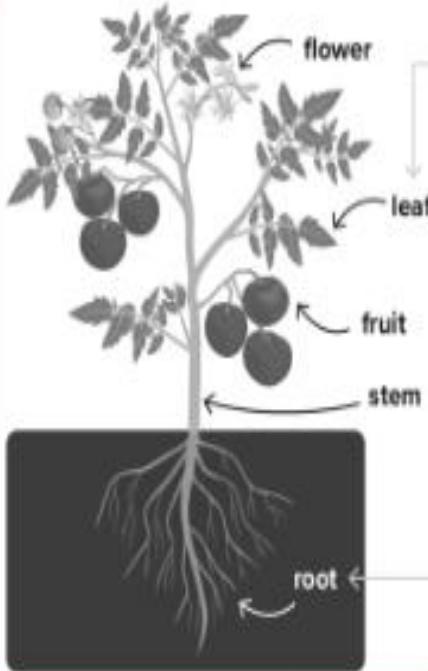
root

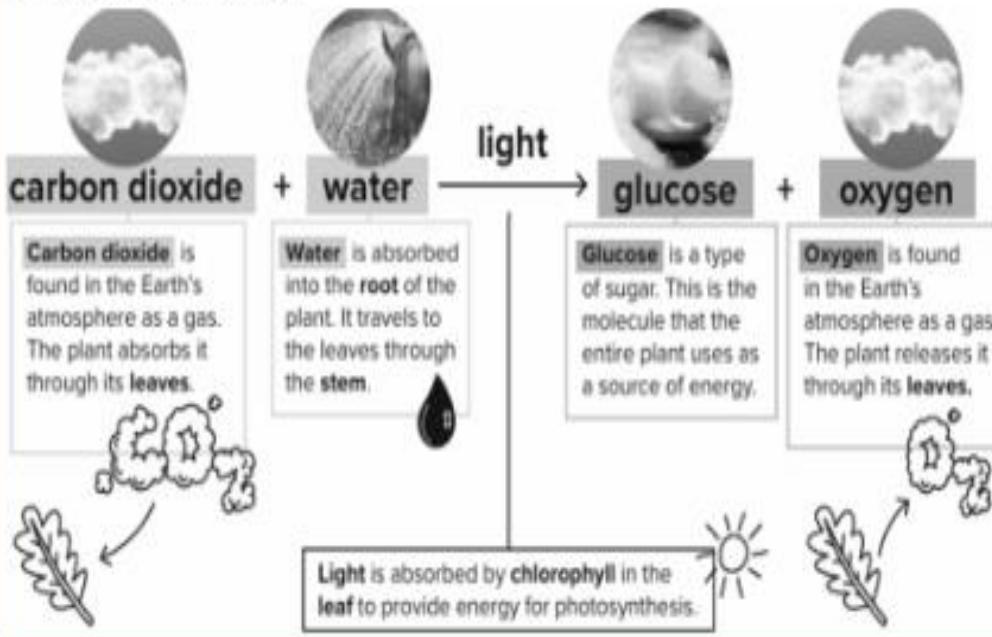**Carbon dioxide** enters by **diffusion** through pores called **stomata** on the **leaves**.

Oxygen exits by **diffusion** through the stomata on the **leaves**.

Water travels up the plant to photosynthesising areas by **transpiration**.

Water enters the roots through **root hair cells** by **osmosis**.

2. Photosynthesis

Photosynthesis is a chemical reaction where light energy is taken in (endothermic) so that reactants can react together to form products.

carbon dioxide + water → (light) glucose + oxygen

Carbon dioxide is found in the Earth's atmosphere as a gas. The plant absorbs it through its **leaves**.

Water is absorbed into the **root** of the plant. It travels to the leaves through the **stem**.

Glucose is a type of sugar. This is the molecule that the entire plant uses as a source of energy.

Oxygen is found in the Earth's atmosphere as a gas. The plant releases it through its **leaves**.

Light is absorbed by **chlorophyll** in the **leaf** to provide energy for photosynthesis.

3. Factors Affecting Photosynthesis

Carbon dioxide concentration

Water availability

Light Intensity

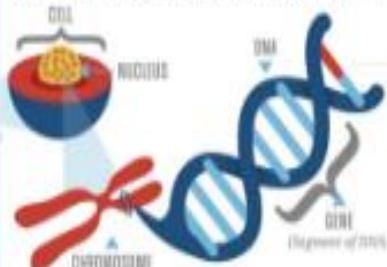Chlorophyll concentration

Temperature

4. Leaf Adaptations

Cuticle

Epidermis

Palisade mesophyll

Spongy mesophyll

Vein

Lower Epidermis

Stomata
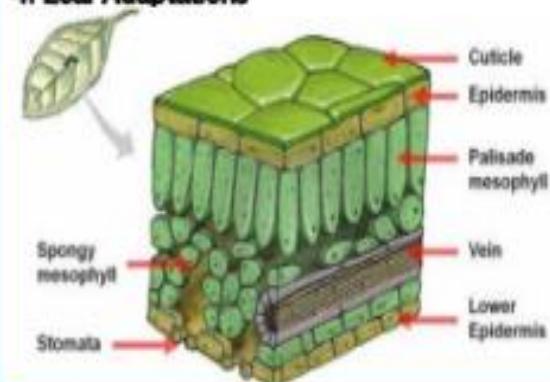
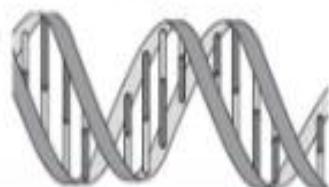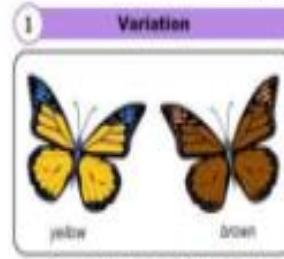| Adaptation	Function
Thin	Provides a short distance for carbon dioxide to move by diffusion into the leaf
Large surface area	It can absorb a lot of light
Contains chlorophyll	Traps light
Stomata	Small holes in the underside of the leaf that allow carbon dioxide and oxygen to move in and out of the leaf by diffusion
Guard cells	To open and close the stomata depending on the conditions
Network of tubes	To transport water and food

SCIENCE Y8 GENES KNOWLEDGE ORGANISER

1. DNA (Deoxyribonucleic Acid)

DNA is made from a double helix – two strands which are twisted.

DNA has four different bases made of nitrogen.

DNA makes up chromosomes. 46 chromosomes are found in the nucleus of the cell.

2. Inheritance

Genes are small sections of chromosomes that code for characteristics.

People get a combination of genes from their parents. Some of the genes are similar which is why we look similar to our siblings. Some of the genes in the combination are different. this is why siblings might have differences.

Dad genes are passed to the child from the sperm cell and Mum genes are passed to the child from the egg cell.

Gg & Gg

	G	g
G	GG	Gg
g	Gg	gg

3. Natural Selection

A Mutation is a change in the DNA sequence which leads to a change in characteristic.

1. Variation

yellow   brown

There is genetic variation within a population which can be inherited

2. Competition

Overproduction of offspring leads to competition for survival

3. Adaptations

Individuals with beneficial adaptations are more likely to survive to pass on their genes

4. Selection
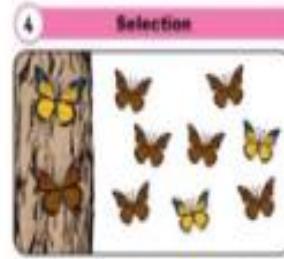
Over many generations, there is a change in allele frequency (evolution)

4. Adaptations

Plants called succulents store water in their stems and leaves

Leaves with hair help reduce the amount of water lost.

Adaptations:
· Long neck to reach tall trees for food.
· Spotted coat for camouflage among trees and grass.
· Long legs to cover large distances in search of food and water

Adaptations:
· Thick fur for insulation against cold.
· White fur for camouflage in snow.
· Large paws to walk on ice without sinking.
· Fat layer to store energy and keep warm.

5. Biodiversity

· Biodiversity is the variety of organisms on the planet.

WHY IS IT IMPORTANT?

| Purifies air & water | Provides food security | Reduces risk of diseases |
| Improves our wellbeing | Mitigates natural disasters | Sequesters carbon dioxide |

EVERYDAY IDEAS TO HELP BIODIVERSITY

1. Eat more plant based & seasonal foods
2. Buy from local, small scale, & organic farms
3. Join or fund a rewilding initiative in your area
4. Use less plastic and take a zero-waste challenge!
5. Grow native plants & trees less, to help pollinators
6. Get outdoors, learn about biodiversity & nature

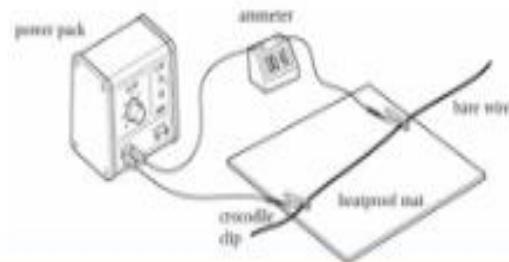# SCIENCE Y8 ELECTRICITY/MAGNETISM KNOWLEDGE ORGANISER

1. Potential Difference

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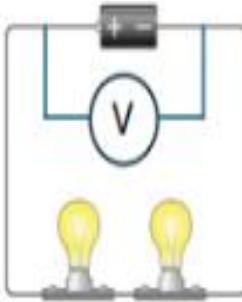
2. Resistance

- 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:

Weedkiller spraying

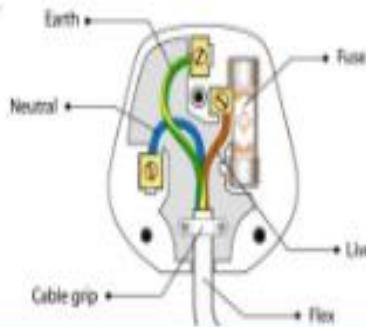Defibrillator   Photocopier   Paint spraying

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.