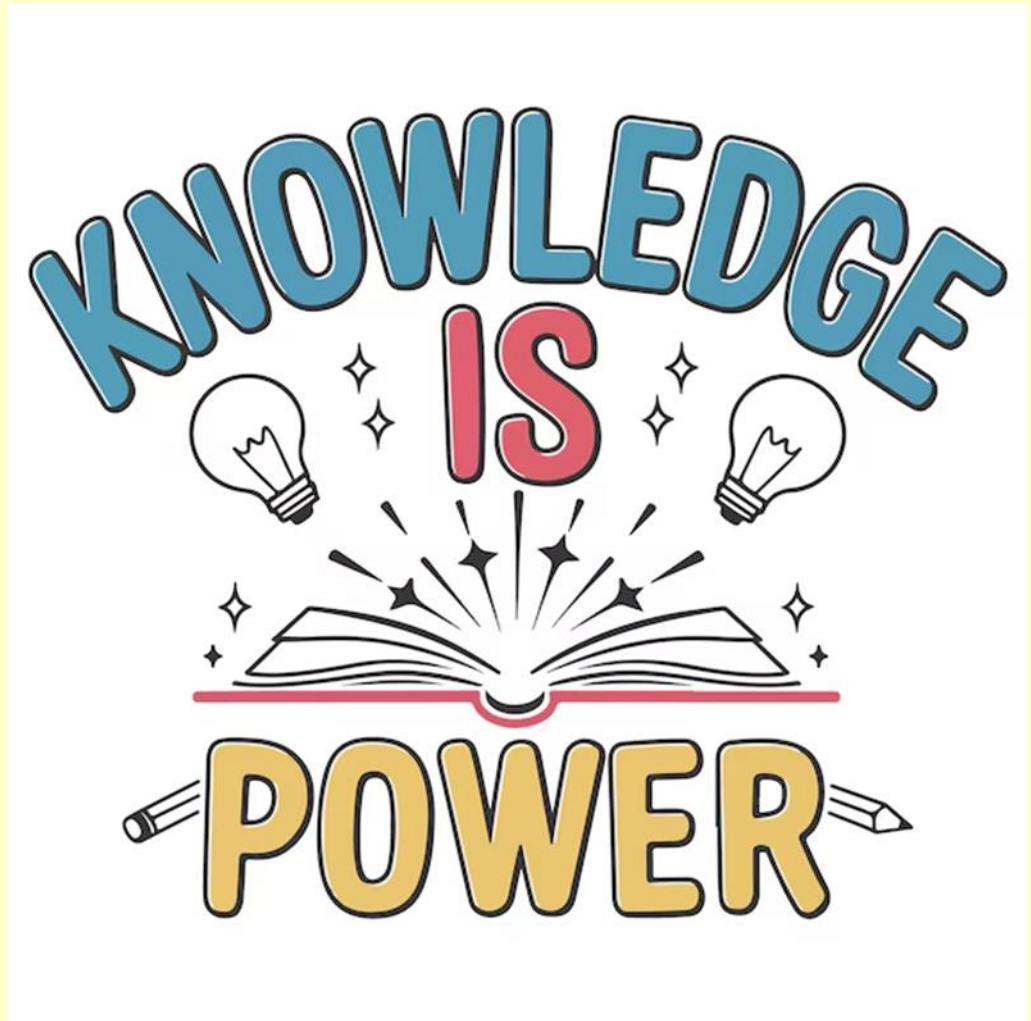


Open
Academy
Year 8
Knowledge
Organiser

Spring Term
1



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Page 22 - Religious Studies – Topic-How does Creation narratives shape what it means to be human?




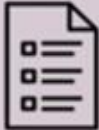













Page 23 – Science –Topic 1: Acids & Alkalis (Soil Scientist). Topic 2: Cells (Histologist)

Page 24 – Science – Topic 3: Energy Resources (Green energy). Topic 4: Moving and breathing (Physiotherapist)

Page 25 – Spanish – Topic: Mi Insti

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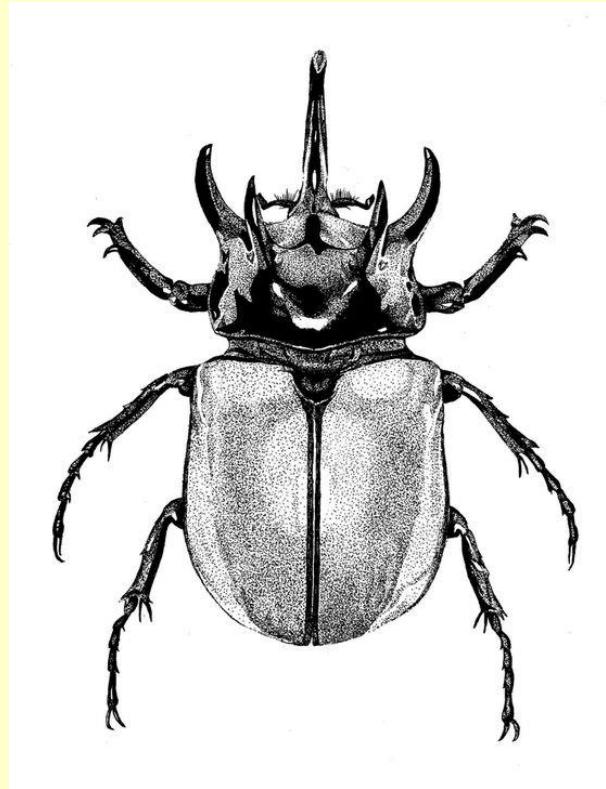
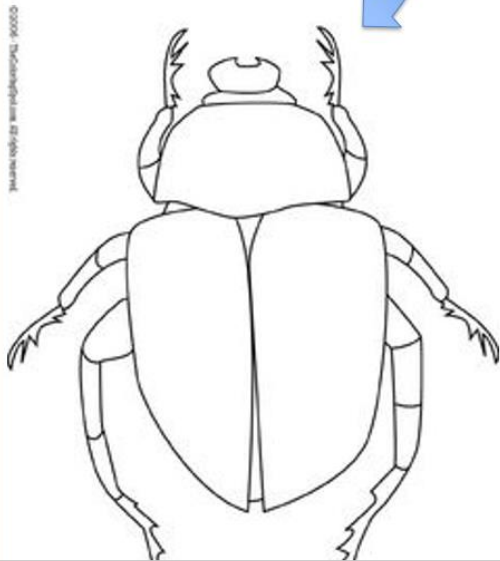
How to use your Knowledge Organiser: Step by step guide

	Look, Cover, Write, Check	Definitions of Key Words	Flash Cards	Self Quizzing	Mind Maps	Paired Retrieval
Step 1	<p>Look at and study a specific area of your KO.</p> 	<p>Write down the key words and definitions.</p> 	<p>Use your KO to condense and write down key facts or information onto flash cards.</p> 	<p>Use your KO to create a mini quiz. Write down your questions using your KO.</p> 	<p>Create a mind map with all the information you can remember from your KO.</p> 	<p>Ask a friend or family member to have the KO or flash cards in their hands.</p> 
Step 2	<p>Cover or flip the KO over and write down everything you can remember.</p> 	<p>Try not to use your KO to help you.</p> 	<p>Add pictures to help support. Then self-quiz using the flash cards. You could write questions on one side, and answers on the other!</p> 	<p>Answer the questions and remember to use full sentences.</p> 	<p>Check your KO to see if there are any mistakes on your mind map.</p> 	<p>They can test you by asking you questions on different sections of your KO.</p> 
Step 3	<p>Check what you have written down. Correct any mistakes in green pen and add anything you have missed. Repeat.</p> 	<p>Use your green pen to check your work.</p> 	<p>Ask a friend or family member to quiz you on the knowledge.</p> 	<p>Ask a friend or family member to quiz you using the questions.</p> 	<p>Try to make connections, linking the information together.</p> 	<p>Write down your answers,</p> 

Year 8 Art – Topic: Bugs!

TASK 1 – Research insect patterns and stick an image to this sheet

TASK 2
Using patterns found on bugs add pattern to the beetle in the style of Wanda Shum



Try drawing from these insects using regular pencil, pen and then oil pastel on a black surface.

Focus on small areas if easier and watch the demo videos on the left first.



Insect Speed drawing video

<https://www.youtube.com/watch?v=zomfrHyCMhw>

Pen drawing video

<https://www.youtube.com/watch?v=LJORA9itXLc>

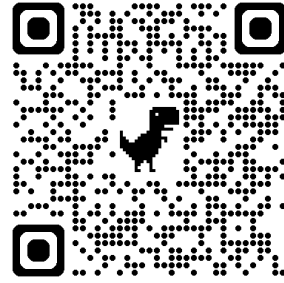
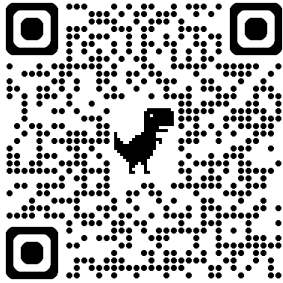
Year 8 Computer Science – Topic: Computational Thinking

Topic 1 – Key takeaways:

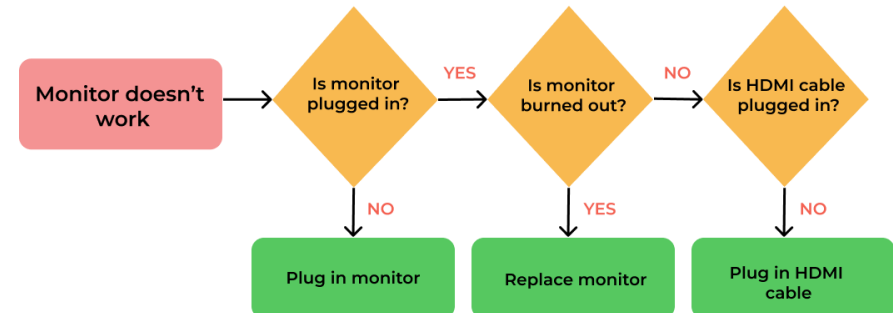
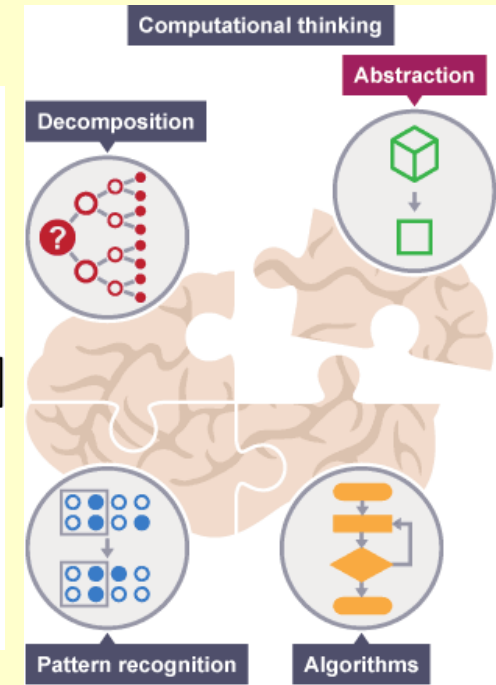
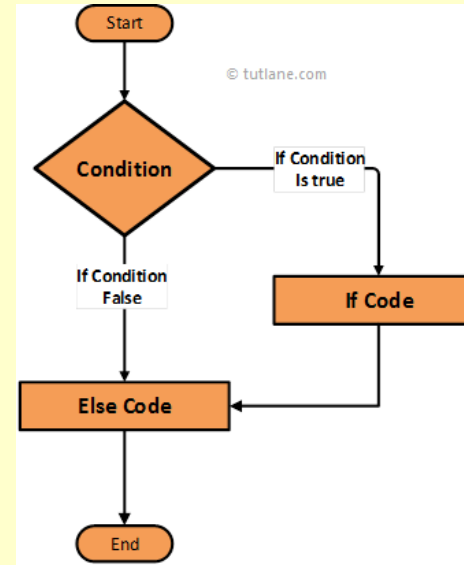
- Pseudocode provides a clear, language-independent way to plan algorithms.
- Writing pseudocode helps identify logical errors before coding..
- Iterations are used to repeat a block of code, either for a set number of times or until a condition is met.
- Using loops simplifies tasks that involve repeated actions
- Selection statements allow programs to make decisions based on conditions.
- "If-else" statements help execute different actions depending on input.

Topic key vocabulary:

Algorithm
Loops
Iterations
Conditions
Abstraction
Decomposition
Selection



Key Questions: How does a selection statement make programs more flexible?
What are the differences between "for" and "while" loops?
Why is pseudocode useful for designing algorithms?

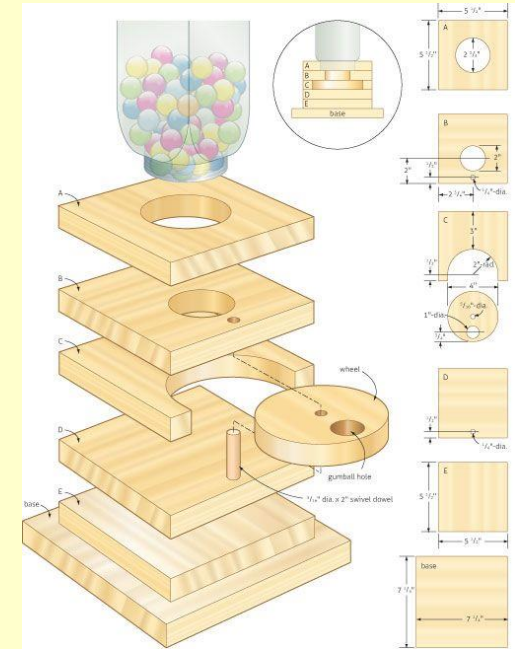


Year 8 Design and Technology – Topic: Sweet Dispensers



Word Bank

Pine
Fretsaw
Measurements
Accuracy
Function
Half moon file
Sanding
Midpoint



These are the key principles of design we will be looking at this term when working in the Workshop with Resistant Materials. The project is to follow step by step instructions and measurements to produce a functioning sweet dispenser.

Exam Style Questions?

- Which practical skills will you use when making your sweet dispenser to ensure an accurate outcome?
- How does using natural materials have a positive impact on the environment compared to using manmade materials?
- How will you ensure a high-quality outcome? What quality control checks will you put in place?

1. Source of Origin

- **Softwoods** come from coniferous trees, which are typically evergreen (e.g., pine, fir, spruce, cedar).
- **Hardwoods** come from deciduous trees, which shed their leaves annually (e.g., oak, maple, walnut, mahogany).

2. Density and Durability

- **Softwoods** tend to be less dense, lighter, and easier to work with, but they can be less durable and more prone to dents and scratches.
- **Hardwoods** are usually denser, stronger, and more durable, making them better suited for heavy-duty applications, furniture, and flooring.

3. Growth Rate

- **Softwoods** grow much faster than hardwoods, which is why they are often less expensive and more readily available.
- **Hardwoods** grow slower, meaning they are more expensive due to longer maturation times and limited availability.

4. Grain and Appearance

- **Softwoods** typically have a simpler, straighter grain and a lighter color (e.g., light yellow, pale brown).
- **Hardwoods** often have a more complex grain pattern, with a wider variety of colors and textures (e.g., rich browns, reds, and deep tones).

5. Uses

- **Softwoods** are commonly used for construction, paper products, and inexpensive furniture due to their availability and ease of use.
- **Hardwoods** are often used for high-quality furniture, cabinetry, flooring, and other fine wood products because of their strength and aesthetic appeal.

Year 8 Drama – Topic: Dialogue

Key terminology

Dialogue is the speech between 2 or more people. It is used to give the audience information about the characters, location and the storyline.

Location is where the scene takes place. This can be shown through the design elements, but also by what the characters say and how they behave. For example, the audience would know the scene was set at train station if the set looked like a train station, there was the sound of a train announcer, but also if the character asked to buy a ticket for the 3.44 train to London.

Cues are signals which tells the actor when to come on stage or to speak. A cue can be a visual signal, spoken or a sound effect. It is important that an actor learns their cues so that they know when it is their turn to speak or act.



This picture is taken from a play called Emil and the Detectives.

Where do you think the location is?

What time-period do you think the play is set in?

Who do you think the main characters are?

Key Questions

Where do you think this location is?

What makes it obvious?

When do you think this one is set?

What do you think it's about?



Year 8 English – Topic: Crime and Punishment

Course summary

Across this course you will analyse and consider a range of non-fiction extracts relating to heinous crimes, cruel punishments and ideas about rehabilitation. Building on last term's work, you will develop your skills of language and structure analysis, becoming increasingly familiar with studying non-fiction.

Your own persuasive writing skills will be practiced as you aim to convince your readers on your opinions and ideas, while you will also compare and analyse different perspectives on crime and punishment across time.



Key extracts and research prompts:

Jack the Ripper – A famous series of crimes, that shocked and appalled a nation, but remains unsolved today.

Research Jack the Ripper and write a short explanation about why you think this crime interests people today.

George Orwell – Orwell, who we read when we studied Animal Farm, was interested in the life of the poor, so much so that he went into self-imposed poverty to show the reality of life on the breadline. He wanted to show his readers that the poorest were often presented as criminals, but in reality, were anything but.

Research authors who are interested in social justice today. What kind of issues do they explore and how do they present their work?

Curriculum links - Comparing

We make comparisons in all aspects of life and in a number of the subjects that we study at Open Academy. In this course, we will look at different non-fiction sources and compare their perspectives on crime and punishment.

You might compare in History too, linking sources and points of view.

Key comparatives:

Similarly

However

Whereas

Contrastingly

Equally

Links - Psychoanalysis

When we studied Lord of the Flies at the start of term, we considered whether characters were acting on their **ego**, **id**, or **super-ego**. By doing this we considered what motivated a character's behaviour. We call this **psychoanalysis**.

When reading about crimes, the treatment of individuals and punishment, think about what is motivating different people.

Tip: When analysing characters and their quotations, consider whether this is demonstrating their ego, id or super-ego.

Links

We have looked at texts through a **Marxist** perspective. This means we consider how people of different **social classes** are treated and whether there is an imbalance of power.

A number of extracts show how people in positions of power exploit others.

Tip: In your writing, try to highlight where you think there is an imbalance of power.

Year 8 English – Topic: Crime and Punishment

Study skills for this course:

Studying non-fiction, especially older pieces can be challenging, but we have a number of ways of getting to grips with this vocabulary.

1. Write down any vocabulary you don't recognise and use a dictionary to give it a definition. Can you then use it in a sentence yourself or think of a modern alternative?
2. Plan! Whether writing creatively or comparing, plan your answer. Mindmap your main ideas before adding evidence or detail in a plan.

Example Progress Folder Tasks

How does the author use language to show the horror of Jack the Ripper's crimes? (20 marks)

Compare the perspectives on the prison system in the two extracts. (20 marks)

Write a persuasive speech encouraging a minister to help protect the working rights of young people (20 marks)

Write a diary entry of a victim of child labour. (20 marks)

Success Criteria

Here's a possible structure for persuasive writing:

Anecdote – Form a connection between you and your reader/listener.

3x Arguments/Points of View – These should be detailed and include your rhetorical and linguistic devices.

Counter Argument – Show an awareness of the opposing view.

Rebuke – Explain your argument against that point of view.

Closing idea – Finish with an explanation of what you want your reader/listener to do.

Ambitious Vocabulary

Accomplice – An assistant of helper involved in a crime or act.

Alibi – Evidence or an excuse showing someone was elsewhere when a crime was committed.

Conviction – A declaration that someone is guilty of a crime.

Defendant – A person accused of a crime in court.

Labour – Work, particularly manual or physical.

Motive – A reason for committing a crime.

Punitive – Relating to harsh punishment.

Rehabilitation – The process of helping someone rejoin society after a period away.

Surveillance – Close observation involving monitoring.

Testimony – A formal statement, usually by a witness, about what they know or have seen.

Verdict – A decision.

Rhetorical / Linguistic Vocabulary

Anecdote – A relatable or real-world story, often used to create a connection.

Alliteration – The use of words beginning with the same letter.

Dissonance – Different vowel sounds in close proximity, often showing dislike.

Emotive Language – Vocabulary that plays on strong feelings.

Hyperbole – Exaggeration for effect and emphasis.

Opinion – An idea or view, but not strictly based on fact.

Perspective – A viewpoint.

Rebuke – A challenge to someone's point of view.

Rhetorical Question – A question used to create a dramatic effect rather than an answer.

Tip: Use the ambitious vocabulary in your answers and the dramatic vocabulary to identify the methods the author is using.

Year 8 Food Technology – Topic: Macro nutrients

Macro nutrients

Protein, Carbohydrates, Fats.
Needed in large quantities in the diet.

Protein

Function:

Need for growth from childhood to adulthood

Repair of muscles and tissues

Sources

Animal: meat, poultry, dairy, eggs, fish
Plant: beans, chickpeas, lentils, peas, nuts, quorn, tofu.

Carbohydrates

Types

Starchy and sugary

Function:

Starchy: long term energy. Also contain fibre which is needed for digestion and fills us up for longer.

Sugary: short term energy

Sources

Starchy: potatoes, bread, rice, pasta, noodles.

Sugary: fruits and vegetables, sweets, honey, syrup.

Fat

Types

Saturated and unsaturated

Function:

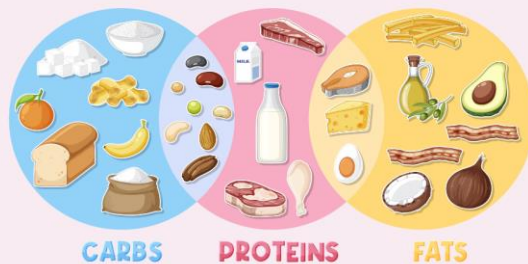
Energy, insulation, protects vital organs and bones, source of vitamins (A, D, E and K)

Sources

Saturated: generally animal based – meat, cheese, butter, processed meats such as pepperoni.

Unsaturated: oil, nuts, seeds fish, avocado.

Macronutrients



Key Vocabulary

Macro nutrient
Micro nutrient
Protein
Fat
Carbohydrates
Function
Sources
Starchy
Sugary
Saturated
Unsaturated

Saturated vs unsaturated

What's the differences?

- Saturated fats are considered unhealthy and can increase the risk of heart disease and other problems.
- Unsaturated fats are considered healthier.
- Saturated fats are usually animal based.
- Unsaturated fats are usually plant based.
- Saturated fats are solid at room temperature.
- Unsaturated fats are liquid/soft at room temperature.

Key Questions:

Explain the function of protein?

Name 3 differences between saturated and unsaturated fats.

List 5 sources of starchy carbohydrates.

List 3 sources of plant based protein.

Year 8 Geography – Topic: Globalisation

Globalisation

The world is globally connected through trade, communications and transport..

What are the advantages of this?

Globalisation enables trade of **goods and services** that would otherwise be un-obtainable.

Cheap products are available for buyers and people are employed in work that may not have existed.

What are the dis-advantages of this?

Globalisation often requires buyers to seek out the lowest possible prices.

This can disadvantage **producers** where other suppliers exist.

Workers may be exploited in poorer countries, **child labour** means children miss out on learning and sweatshops employ people on low pay working long hours.

Key Tasks:

TNC research
Sweatshops poster
Write a persuasive letter

Goods and Services are items or information that are globally traded or shared. These are essential to modern ways of living:

Energy supplies such as Gas, Oil and Coal.

Food resources such as 'Cash crops' including coffee, sugar, tea, herbs and spices, fruit and vegetables. Cereals like wheat, oats, maize and barley.

Clothing **materials** such as cotton, wool, silk and leather and **luxury items** including electronic devices.

News and media – news travels fast using cables and signals.

4 main sectors of Industry:

Primary – mainly gathering, drilling, growing of raw materials

Secondary – changing raw materials into new products

Tertiary – selling products/providing services

Quaternary – high-tech research and design, technology



TNC's – these are large globally important companies (corporations) who have production and offices in several countries.

Famous examples might be Coca-Cola, Nike, Ford, BMW, Esso, BP, Shell, Amazon etc.

Key Vocabulary

Sweatshops
Fair Trade
Chain of Production
Profit
Costs
Consumers
Producers
TNC's
Sectors of Industry
Tariffs
Child Labour
Exploitation
Quality of Life
Head office
Research and Design

Fair Trade

This is a form of trade that seeks to pay the producers a fairer and stable price regardless of short-term changes.

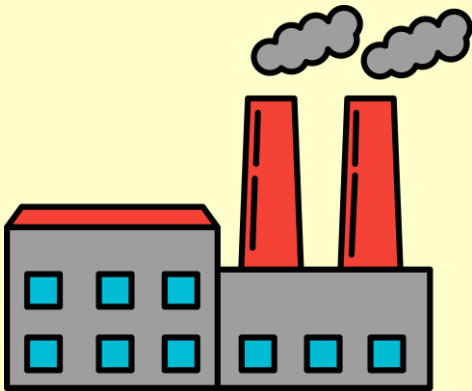
Year 8 History – Topic: Industrial Revolution

From 1750 Britain went through a process of change:

- **Agriculture** - New tools, fertilizers and harvesting techniques were introduced, resulting in increased productivity and agricultural prosperity.
- **Industry** - Factories sprung up all over the country creating more efficient ways to produce goods such as wool, cotton and coal. The increase in factories brought thousands of new jobs.
- **Transport and communications** - Thomas Telford built roads and canals in the 1700s and George Stephenson and Isambard Kingdom Brunel oversaw the 'Railway Mania' of the 1800s. There had previously been no very fast way of transporting goods and people around the country.
- **Technology** - There were many scientific discoveries and technological inventions that changed society and industry. Changes to sanitation and medical treatment such as the work of **John Snow** and **Edward Jenner** improved people's quality of life.

KEY INVENTIONS: The Steam Engine, Water Frame, Spinning Jenny and Locomotive

Factory owners such as **Robert Owen** argued improving conditions for workers would bring better profits. This influenced parliament to pass Factory Acts but many workers still lacked protection and a political voice



Factory working conditions

Long working hours: normal shifts were usually 12-14 hours a day, with extra time required during busy periods

Low wages: a typical wage for male workers was about 15 shillings (75p) a week, but women and children were paid much less, with children three shillings (15p). For this reason, employers preferred to employ women and children

Cruel discipline: Frequent "strapping" (hitting with a leather strap). Other punishments included nailing children's ears to the table, and dowsing them in water butts to keep them awake

Accidents: forcing children to crawl into dangerous, unguarded machinery led to many accidents and deaths

Health: The air was full of dust, which led to chest and lung diseases and loud noise made by machines damaged hearing.

Living conditions

Overcrowding: There were not enough houses in the cities

Disease: Typhus, typhoid, tuberculosis and cholera. low standard housing and poor-quality water supplies all helped spread disease.

Waste disposal: gutters were filled with litter. Human waste was discharged directly into sewers, into rivers

Poor quality housing: Built very close together so there was little light or fresh air inside. Houses did not have running water and people found it difficult to keep clean

Lack of fresh water: People could get water from streams, wells and stand pipes, but this water was often polluted

Key Vocabulary

Industrial Revolution
Invention
Population
Economy
Agriculture
Urbanisation
Sanitation
Mass production
Industry

Year 8 Maths - Unit 7 – Brackets, Equations and Inequalities

What do I need to be able to do?

By the end of this unit you should be able to:

- Form expressions
- Expand and factorise brackets
- Solve equations with brackets
- Form and Solve Equations
- Represent Inequalities

Vocabulary

Coefficient: a number used to multiply a variable

Equation: an algebraic statement that two things are equal.

Equivalent: something of equal value

Expression: a mathematical sentence without an equals sign

Formula: a rule written with all mathematical symbols

Identity: a mathematical sentence with the symbol \equiv

Inequality: a symbol to represent greater than or less than

Highest Common Factor(HCF): the biggest factor that belongs to all numbers

Product: multiply terms together

Simplify: Grouping and combining similar terms

Substitute: replace a variable with a numerical value

Term: a single number or variable

Form expressions


For unknown variables, a letter is normally used in its place.

More than – **ADD**
Less than/ difference – **SUBTRACT**

eg 4 more than t $\longrightarrow t + 4$
8 less than k $\longrightarrow k - 8$

Only similar terms can be grouped together

eg Find the perimeter of this shape
(Perimeter - length around outside of shape)



$2t + 1$ $t + 2t + 1 + t + 2t + 1 \longrightarrow 6t + 2$

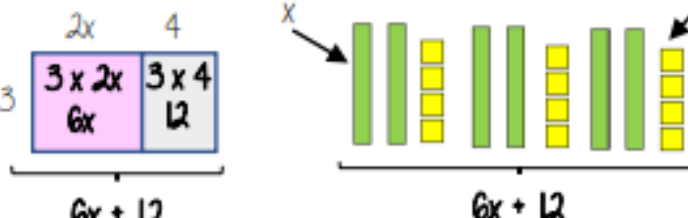
Directed numbers

$++ \longrightarrow +$
 $-- \longrightarrow +$
 $+ - \longrightarrow -$
 $- + \longrightarrow -$

eg $a - 5$ and $b - 2$
 $a^2 - a \times a - 5x - 5 - 25$
 $b + a - 2 + -5 - -3$

Multiply single brackets

$3(2x + 4)$



Different representations of $3(2x+4) = 6x + 12$

Forming Expressions



Multiplying Algebraic Terms



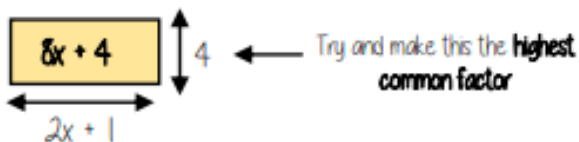
Directed Numbers



Expanding Single Brackets



Factorise into a single bracket $8x + 4$



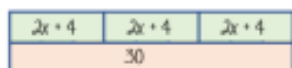
The two values **multiply** together (also the area) of the rectangle

$$8x + 4 \equiv 4(2x + 1)$$

Note
 $8x + 4 \equiv 2(4x + 2)$
 This is factorised but the HCF has not been used

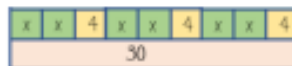
Solve equations with brackets

$$3(2x + 4) = 30$$



$$3(2x + 4) = 30$$

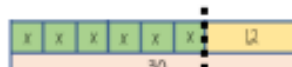
Expand the brackets



$$6x + 12 = 30$$

$$-12 \quad -12$$

Substitute to check your answer
 This could be negative or a fraction or decimal



$$6x = 18$$

$$-6 \quad -6$$

$$x = 3$$



Simple Inequalities

< less than ≤ Less than or equal to
 > More than ≥ More than or equal to

$$x < 10$$

Say this out loud
 "x is a value less than 10"

$$10 > x$$

Say this out loud
 "10 is more than the value"

Note
 $x < 10$ and $10 > x$
 represent the same values

$$x + 2 \leq 20$$

"my value + 2 is less than or equal to 20"

$$x \leq 18$$

The biggest the value can be is 18

Form and solve inequalities



Two more than treble my number is greater than 11

Find the possible range of values

Form

$$x \rightarrow x \times 3 \rightarrow +2 \rightarrow 11$$

$$3x + 2 > 11$$

Solve

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

$$x > 3$$

Check

This would suggest any value bigger than 3 satisfies the statement

$$3 \times 3 + 2 = 11 \checkmark \quad 10 \times 3 + 2 = 32 \checkmark$$

Algebraic constructs

Expression

A sentence with a minimum of two numbers and one maths operation

Equation

A statement that two things are equal

Term

A single number or variable

Identity

An equation where both sides have variables that cause the same answer includes \equiv

Formula

A rule written with all mathematical symbols
 eg area of a rectangle $A = b \times h$

Factorise



Solve Equations



Inequalities



Solving Inequalities



A job based on algebra:

Engineer

Many different disciplines of engineering exist today such as mechanical, petroleum and civil. Engineering uses algebra to solve physical problems such as how to build and bridge or design an airplane. Take designing a rocket going to the moon, for example: an engineer must use algebra to solve for flight trajectory, how long to burn each thruster at what intensity and at what angle to lift off. Though a very difficult, maths-heavy discipline, engineering provides a very rewarding career both in achievement and pay.

Year 8 Maths - Unit 8 – Sequences

What do I need to be able to do?

- Generate a sequence from a term to term rule or nth term
- Recognise arithmetic sequences to find the nth term
- Recognise geometric sequences and other sequences

Vocabulary

- Arithmetic Sequence:** a sequence where the difference between the terms is constant
- Difference:** the gap between two terms, found by subtraction.
- Geometric Sequence:** A sequence where each term is found by multiply the previous term by a number.
- Linear:** a sequence that increases or decrease by the same amount each time
- Non- Linear:** a sequence that increase or decreases by different amounts each time
- Position:** The place that something is located
- Sequence:** items or numbers that follow a pattern or rule.
- Term:** a single number or item belonging to a sequence.

Sequence in a table and graphically

Position: the place in the sequence

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

In a table

Position	1	2	3
Term	3	5	7

Graphically

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

Sequences from algebraic rules

This is substitution

$3n + 7$ $3n^2 + 7$

This will be linear - note the single power of n. The values increase at a constant rate

This is not linear as there is a power for n

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

e.g.

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

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

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

Checking for a term in a sequence

Form an equation

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

Algebraic rule → $3n - 4 = 201$ ← Term to check

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

H Finding the algebraic rule

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

$4n$


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


$4n + 3$


$4n + 3$


This is the constant difference between the terms in the sequence

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

Term to term rule 

Picture Sequences 

Nth term of sequences 

Arithmetic and Geometric Sequences 

Year 8 Maths - Unit 9 – Indices

What do I need to be able to do?

- Add/Subtract Expressions with Indices
- Multiply/Divide Expressions with indices
- Know the addition law for indices
- Know the subtraction law for indices

Vocabulary

Base: The big number that lies below the index

Coefficient: The number multiplied by an algebraic variable

Exponent: The little number that tells you how many times to do the multiplication

Indices: Another word for the exponent or power.

Power: The little number that tells you how many times to do the multiplication

Product: To multiply terms together.

Simplify: To reduce a power to its lowest form

Addition/ Subtraction laws for indices

$$3^5 \times 3^2 \longrightarrow 3^7$$

$$= (3 \times 3 \times 3 \times 3 \times 3) \times (3 \times 3)$$

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

Addition law for indices

$$a^m \times a^n = a^{m+n}$$

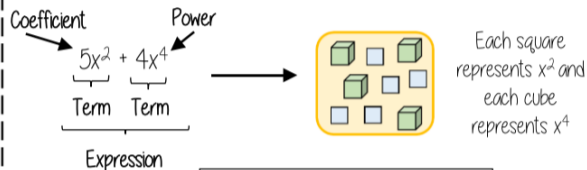
$$3^5 \div 3^2 \longrightarrow 3^3$$

$$\frac{3 \times 3 \times 3 \times \cancel{3} \times \cancel{3}}{\cancel{3} \times \cancel{3}} \longrightarrow \frac{3^3}{3^0} \longrightarrow \frac{3^3}{1}$$

Subtraction law for indices

$$a^m \div a^n = a^{m-n}$$

Addition/ Subtraction with indices



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

$$5x^2 + 2x^2 \longrightarrow 7x^2$$

$$5x^2 + 6x^4 - 3x^2 + x^4 \longrightarrow 2x^2 + 7x^4$$

Divide expressions with indices

$$\frac{24}{36} \longrightarrow \frac{\cancel{2} \times \cancel{2} \times 2 \times \cancel{3}}{\cancel{2} \times \cancel{3} \times 2 \times \cancel{3}} \longrightarrow \frac{2}{3}$$

$$\frac{5a^3b^2}{15ab^6} \longrightarrow \frac{\cancel{5} \times \cancel{a} \times a \times a \times \cancel{b} \times \cancel{b}}{3 \times \cancel{5} \times \cancel{a} \times \cancel{b} \times \cancel{b} \times b \times b \times b \times b} \longrightarrow \frac{a^2}{3b^4}$$

Cross cancelling factors shows cancels the expression

$$\frac{23a^7y^2}{5db^6}$$

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

Multiply expressions with indices

$$4b \times 3a$$

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

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

$$\equiv 12ab$$

$$5t \times 9t$$

$$\equiv 5 \times t \times 9 \times t$$

$$\equiv 5 \times 9 \times t \times t$$

$$\equiv 45t^2$$

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

$$\equiv 2 \times b \times b \times b \times b \times 3 \times b \times b$$

$$\equiv 2 \times 3 \times b \times b \times b \times b \times b \times b$$

$$\equiv 6b^6$$

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

Laws of Indices



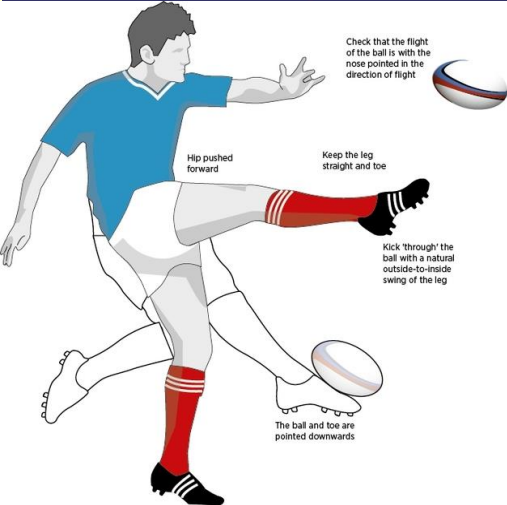
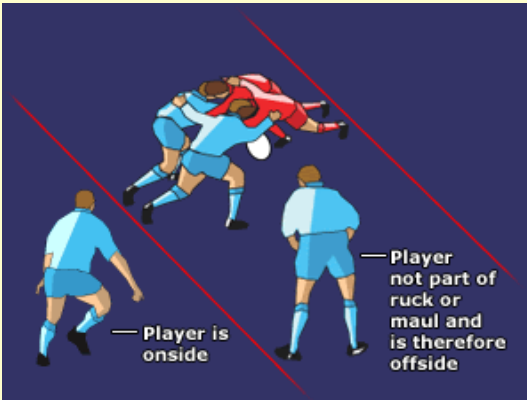
Collecting Terms



Using Indices



Year 8 Physical Education – Topic – Rugby



Rules of The Game



Key skills

Developing passing

Is being able to understand and accurately replicate the scissors & miss pass, and how to receive it and to create and develop varying strategic ways of getting passed defenders. Performing skills in a small sided game with pressure from opposition.

Develop tackling technique

Is being able to develop an understanding & knowledge of tackling technique and safely replicating the correct technique on advancing opposition and understanding the rules regarding tackling within the game.

Kicking

Is being able to perform the correct kicking technique from the ground and out of hand with control and accuracy. This includes beginning to combine the use of passing and kicking to outwit opponents and understanding when to use the kick and the advantages gained from it.

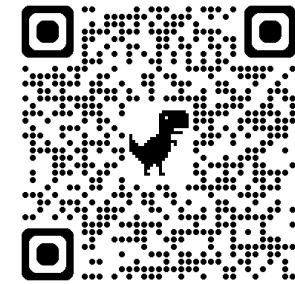
Tactical play/outwitting opponents

Is developing knowledge and understanding of strategic play used to outwit opponent and to be able to change and refine tactics based on the analysis of certain plays and opposition.



Ruck

A ruck typically evolves from a tackle situation and can develop into an effective method of retaining or contesting possession. A ruck can commit defenders, therefore creating an opportunity to create space. On formation of the ruck, offside lines are created.



Key Vocabulary

- Advantage
- Backwards
- Conversion
- Kicking
- Offside
- Pass
- Penalty
- Ruck
- Tackle
- Tactical
- Try

Year 8 Physical Education – Topic –Gymnastics.

Skills

I can perform basic shapes (pike, straddle, tuck, dish, arch) with body tension, extension and control.

I can perform effective flight off a bench, springboard and trampette. (2 footed jump)

I can jump on and off different apparatus. (Horse, box, bench, table)

I can demonstrate different types of vaults (squat, through, straddle, side, handspring, round off)

Health and Fitness

I can warm up effectively in preparation for gymnastics (pulse raiser, mobilisation and preparation stretches)

I can identify the different components of fitness required to perform well in gymnastics. Balance, **the ability to retain control over the distribution of weight or remain upright and steady static – This is a still action, dynamic – Keeping your balance whilst moving.** Flexibility **A full range of motion at a joint,** muscular strength **The ability to exert a large amount of force in a single maximum effort.**

I can identify ways in which I could improve these components of fitness.

Choreography

I can critically evaluate my own and other performances and give feedback to help improve work.

I can use technical language in planning routines and performances.

I can select different actions based on my skill level.

Leadership

I bring correct kit for PE

I show willingness to improve by actively engaging in each lesson.

I can successfully coach a partner or small group suggesting improvements.

I can identify strengths and weaknesses in my own and others performance.



Rules

Remove all jewellery, tie back long hair and have bare feet or grip socks

Hold balances for 3 seconds

All routines should have a clear start and finish

Always perform agilities on a mat

Always have good tension, extension, and control

Ensure the springboard/ trampette/ vault/mat area are clear before performing a skill

Key Vocabulary

Body tension and extension

Control

Tuck, Pike, Straddle

Twist

Flight

Trampette

Somersault

Round off

Handspring

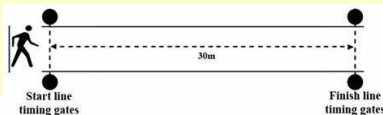
Squat vault, through vault, straddle vault, side vault

Year 8 Physical Education – Topic: Health Related Fitness

Speed:

The time taken to cover a set distance

Fitness test:
30m sprint test



Method of training:
Acceleration sprints

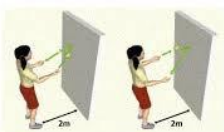
Sporting example:

100m sprinter = Usain Bolt

Co-ordination:

The ability to use two or more body parts at the same time.

Alternate Hand Wall Throw



Fitness test:

Alternate wall ball throw

Method of training:

Co-ordination drills

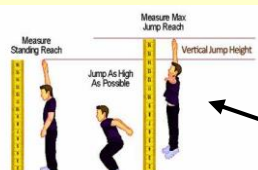
Sporting example:

Badminton player or tennis player



Power:

The combination of strength and speed.



Fitness test:

Vertical jump test
Standing broad jump



Method of training:

Plyometrics



Sporting example:

Long jumper or high jumper

Agility:

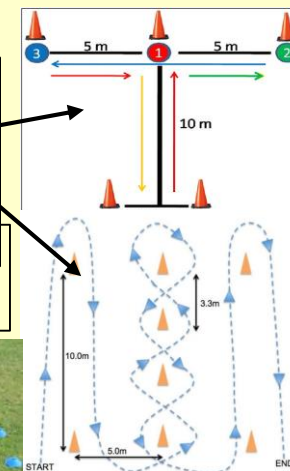
The ability to change direction quickly in control

Fitness test:

T-test
Illinois agility test

Method of training:

SAQ training
(Speed, agility, quickness)



Sporting example:

Basketball players when they dribble around opponents

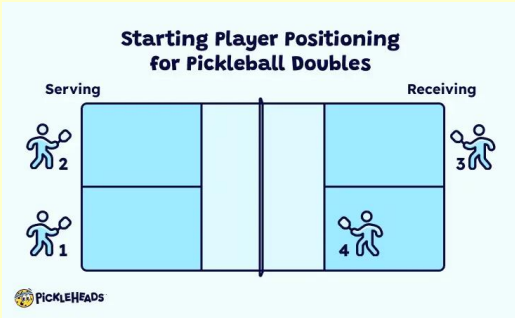
Key Vocabulary

Agility
Co-ordination
Power
Speed

Year 8 Physical Education – Topic: Pickleball

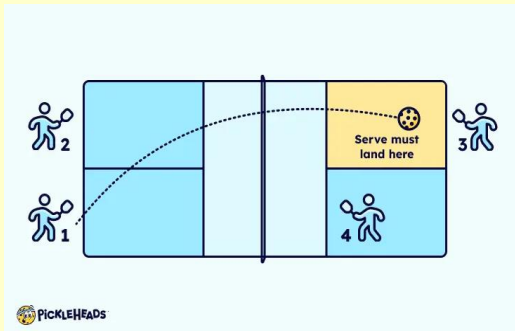
The pickleball court and serve:

first team to 11 points wins—but you must win by 2.



The pickleball game starts with a serve. The player on the right side of their court always starts the serve. You serve diagonally to your opponent.

The serve in pickleball is underarm.



Scoring:

In pickleball scoring, you'll hear players announce three numbers, like "0-0-2". Here's what each number means:

First Number score of the serving team	Second Number score of the receiving team	Third Number which player of the team is serving, first server (1) or second server (2)
---	--	--

Let's say the game is tied at 3-3. If you start the serve, you'll announce "3-3-1", so everyone knows you are the first player in rotation serving.

If you lose the rally, the ball doesn't go to your opponents. It goes to your teammate who will announce "3-3-2".

If your partner loses their serve, a "side out" occurs. This means that they've lost their two serves and it's now their opponent's turn to serve. Their opponents then call out "3-3-1" before starting their serve.

3 - 3 - 1

Serving team's score	Receiving team's score	Current server (will be 1 or 2)
----------------------	------------------------	---------------------------------

Shots:

<p><u>Dinks</u></p> <p>Played closer to the net, these touch shots are hit into your opponent's kitchen and help keep the other team from attacking.</p>	<p><u>Volleys</u></p> <p>These shots are hit out of the air before the ball bounces. They can only be played outside the kitchen.</p>
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<p><u>Forehand/backhand Drives</u></p> <p>These powerful shots are hit off the bounce, often from the baseline. They are played using a forehand or backhand swing.</p>

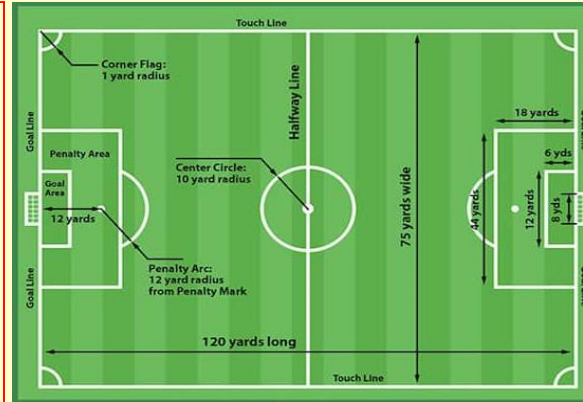
Key words:

- Scoring
- Serving
- Dinks
- Volleys
- Forehand
- Backhand
- Drive

Year 8 Physical Education – Topic: Football

Rules of The Game 11-a-side

- A match consists of two 45 minutes halves with a 15-minute rest period in between.
- Each team can name up to 7 substitute players. Substitutions can be made at any time of the match with each team being able to make a maximum of 3 substitutions per side.
- Each game must include one referee and two assistant referee's (linesmen). It is the job of the referee to act as timekeeper and make any decisions which may need to be made such as fouls, free kicks, throw ins, penalties and added on time at the end of each half. The referee may consult the assistant referees at any time in the match regarding a decision. It is the assistant referee's job to spot offside's in the match, throw ins for either team.
- If the game needs to head to extra time as a result of both teams being level in a match, then 30 minutes will be added in the form of two 15-minute halves after the allotted 90 minutes.
- If teams are still level after extra time, then a penalty shootout must take place.
- The whole ball must cross the goal line for it to constitute as a goal.
- For fouls committed a player could receive either a yellow or red card depending on the severity of the foul; this comes down to the referee's discretion.
- If a ball goes out of play off an opponent in either of the side lines, then it is given as a throw in. If it goes out of play off an attacking player on the base line, then it is a goal kick. If it comes off a defending player, it is a corner kick.



Key skills

Developed Passing - To be able to perform a pass using inside and outside of foot and understand the importance of receiving correctly.

Dribbling and Turns - To be able to perform and accurately replicate different types of dribbling with control, speed and fluency.

Develop Attack - To be able to outwit opponents using learnt skills and techniques at speed

Develop Shooting - To perform and replicate an accurate and controlled shot on goal.

Heading - To develop their understanding and knowledge of how to head the ball correctly and safely

Defensive strategies/tactics - To be able to perform and develop defensive strategies.

PRIOR LEARNING

It is helpful if the pupils have:

- Played a variety of conditioned football games
- Worked independently in small groups
- Used and applied football rules
- Some knowledge of tactics and team
- organization in football
- Developed basic football skills

Key Vocabulary

Indirect Free Kick
Direct Free Kick
Pressure
Attack
Defence
Push-up
Goal side
Play-on
Advantage

Year 8 Religious Studies – Topic-How does Creation narratives shape what it means to be human?

Christian beliefs on Creation

Christians believe that the world did not appear by random chance. Instead they believe that the universe was intelligently designed by God. The Bible teaches that the world was created in a planned and organised way and that each act of creation happened because God spoke it into being.

In the beginning there was darkness and nothingness and the earth was without shape or form, but then God spoke creation into being. First, light appeared.

Then, God separated the water of the seas from the water in the atmosphere by creating the sky. Next God commanded the ground to appear; separating the sea from the land. After this he created plants, vegetation and trees each with seeds within them, so that they could reproduce and grow.

Following this, lights were set in place in the universe so they could mark the passing of time; the days and seasons and years. These lights were called the sun, moon and stars. After this, God created all water creatures and birds and he gave them the ability to increase and reproduce. In the final acts of creation, God made all land, animals and human beings. According to the Bible, God gave the task of caring for the planet and the role of being responsible for looking after creation to human beings. The Christian Creation story teaches that the world was made perfect and wonderful, but that the selfish and disobedient behaviour of people spoils the world.

Hindu beliefs about Creation

Before time began there was no Earth, no heaven, no space, nothing. The waves of a vast, dark ocean lapped on the edge of this nothingness and a giant cobra floated on the waters. Lying asleep in the snake's coils was Lord Vishnu. The snake kept him safe and he slept peacefully.

Slowly, a sound started, "om". It grew louder and filled the emptiness. It throbbed with energy and drove the emptiness away. Lord Vishnu woke up and a magnificent lotus flower grew from his navel. Right in the middle of the flower sat Brahma. Lord Vishnu told Brahma to set to work and create a world.

Still sitting in the flower, Brahma calmed the wind, stilled the waves and brought peace. Brahma split the lotus flower making three different parts: the heavens, the earth and the sky. To start with the earth was bare so Brahma created grass, flowers, trees and plants. He let living things evolve so that the earth became full of animals, birds and fish.



Exam questions

1. What does the word Creation mean? (2 marks)
2. Explain using examples on what Christians believe about how the world was created.? (4 marks)
3. Give reasons as to why some people believe in the Big-Bang-Theory (4 marks)
4. How do you think the world was created? Give 2 reasons for your views. (4 marks)



Key Vocabulary

Creation
Evolution
Big Bang
Theory
Sacred
Holy
Genesis
Stewardship
Universe
Ex-nihilo
Myth
Dominion
Climate
Change
Recycling
Waste
Management
Environment
Fossil Fuels
Animal
Welfare

Creation stories for Sikhism and Buddhism are not included because they don't exist. Sikhs believe that the world was created by God, but don't have a story to explain how.

Buddhists generally do not see the point in trying to explain the origins of the world, preferring to deal with the here and now. They say that if you are shot by an arrow, you don't worry about where it came from, you just worry about getting it out.

Year 8 Science

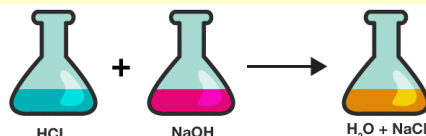
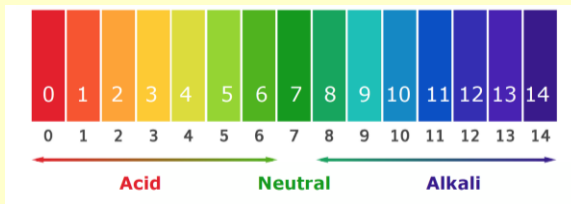
Spring 1 - Topic 1 – Acids & Alkalis (Soil Scientist)

Topic 1 – Key takeaways:

- Acids and alkalis are chemical opposites, and their properties can be identified using indicators.
- Neutralisation occurs when an acid reacts with an alkali, forming a salt and water.
- The pH scale measures how acidic or alkaline a substance is, ranging from 0 to 14.
- Copper sulphate crystals can be formed by reacting copper oxide with sulfuric acid and evaporating the water.

Topic key vocabulary:

Indicator
Neutralisation
Acids
Alkali
pH Scale
Crystallisation



Key Questions: Write the word equation for the neutralisation reaction between hydrochloric acid and sodium hydroxide.
What is the role of an indicator in identifying acids and alkalis? Name one example of an indicator.

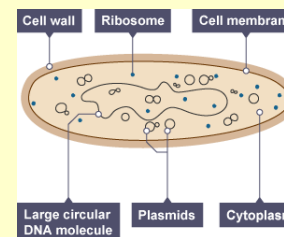
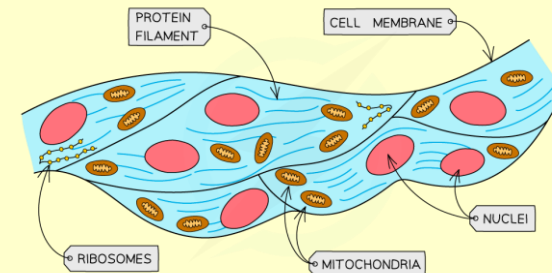
Topic 2 – Cells (Histologist)

Topic 2 – Key takeaways:

- Microscopes allow us to observe cells and structures too small to see with the naked eye.
- Animal cells are specialised to perform specific functions, such as carrying oxygen or sending signals.
- Plant cells are adapted to perform roles such as photosynthesis or water transport.
- Prokaryotic cells, such as bacteria, lack a nucleus and are simpler than eukaryotic cells.

Topic key vocabulary:

Prokaryotic Cell
Chloroplast
Specialised Cell
Microscope
Eukaryotic



Key Questions : How is a root hair cell adapted to its function?
Give an example of a specialised animal cell and describe its function.
What is the function of the objective lens in a microscope?

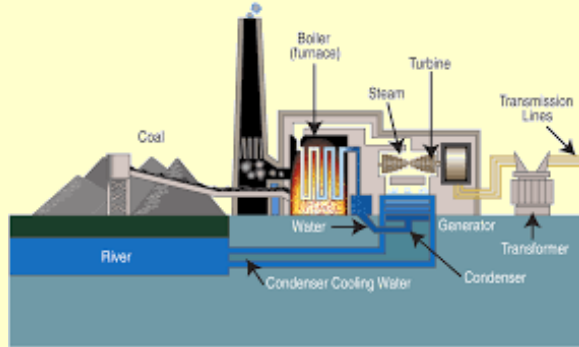
Year 8 Science

Topic 3 – Energy Resources (Green energy)

Topic 1 – Key takeaways:

- Renewable energy comes from sources that are naturally replenished, such as the Sun and wind.
- Geothermal and solar energy are renewable sources that can generate electricity and heat.
- Energy from water, such as hydroelectric and tidal power, is a renewable way to generate electricity.
- Burning fossil fuels contributes to carbon emissions, affecting the environment and climate change.

Topic key vocabulary:
Carbon Footprint
Hydroelectric
Power Finite resource
Renewable
Thermal
Greenhouse gas



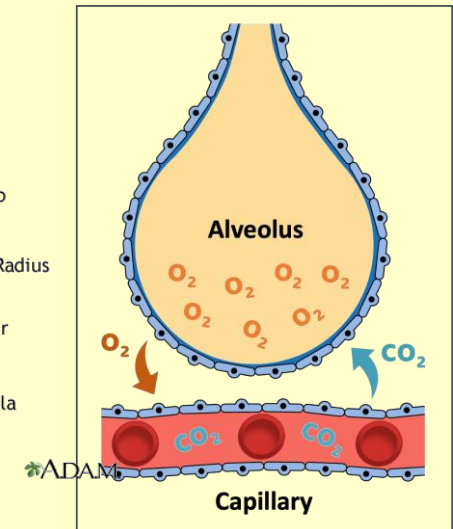
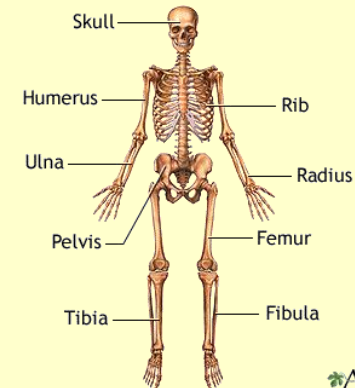
Key Questions: How is geothermal energy used to produce electricity?
Name two examples of renewable energy and explain why they are considered sustainable.
What are two ways to reduce a person's carbon footprint?

Topic 4 – Moving and breathing (Physiotherapist)

Topic 2 – Key takeaways:

- The skeleton provides support, protects organs, and enables movement.
- Muscles work in pairs to create movement by contracting and relaxing.
- Breathing involves the diaphragm and rib muscles to move air into and out of the lungs. Gas exchange happens in the alveoli, where oxygen enters the blood and carbon dioxide is removed.

Topic key vocabulary:
Alveoli
Gas exchange
Antagonistic pairs
Trachea
Bronchiole



Key Questions : Why are alveoli well-suited for efficient gas exchange?
What triggers an asthma attack, and how can it be treated?
Explain how antagonistic muscles allow your arm to bend and straighten.

Year 8 Spanish – Topic: Mi Insti

Opiniones Opinions

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

¿Qué estudias? What do you study?

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

Los profesores Teachers

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

VIP VERBS:

hacer – to do
Haber- to be
Aprender – to learn
Estudiar – to study

¿Cómo es tu insti? What's your school like?

Es... It's...
antiguo/a old
bonito/a nice
bueno/a good
feo/a ugly
grande big
horrible horrible
moderno/a modern
pequeño/a small

To listen

<https://www.activeteachonline.com/default/playr/audio/id/930431/external/0>

¿Cuál es tu día favorito? What is your favourite day?

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



¿Qué hay en tu insti? What is there in your school?

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

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

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

Year 8 Wellbeing – Topic: Meditation

Mindfulness and Meditation can help most people at times!

Our 'everyday mind' can end up full of worries about things which are no longer true or happening or fretting about what MIGHT happen in the future – even though we know it may not! The idea is that we are more than these conscious thoughts.

Challenging things happen, we cannot avoid that, but what we think about those challenges is very much up to us

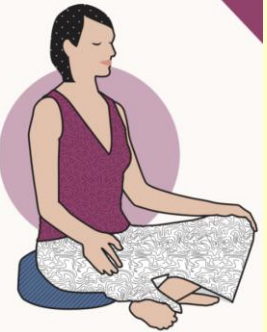
To worry and repeatedly think about difficult things can become suffering - a habit it is all too easy to fall in. The good news however is that we can avoid it! How?

When we notice that we are worrying about things - playing through possible futures like a film in our heads or imagining something going wrong, or even remembering difficult things, unpleasant experiences, **we can simply choose to bring ourselves back to the present moment, by thinking about our breathing.**

This practice comes with lots of benefits...

How to Practice Mindfulness

- 1 Take a seat.** Find a place to sit that feels calm and quiet to you.
- 2 Set a time limit.** If you're just beginning, it can help to choose a short time, such as 5 or 10 minutes.
- 3 Notice your body.** You can sit or kneel however is comfortable for you. Just make sure you are stable and in a position, you can stay in for a while.
- 4 Feel your breath.** Follow the sensation of your breath as it goes out and as it goes in.
- 5 Notice when your mind has wandered.** When you get around to noticing this—in a few seconds, a minute, five minutes—simply return your attention to the breath.
- 6 Be kind to your wandering mind.** Don't judge yourself or obsess over the content of the thoughts you find yourself lost in. Just come back.



The Benefits of Meditation for Students

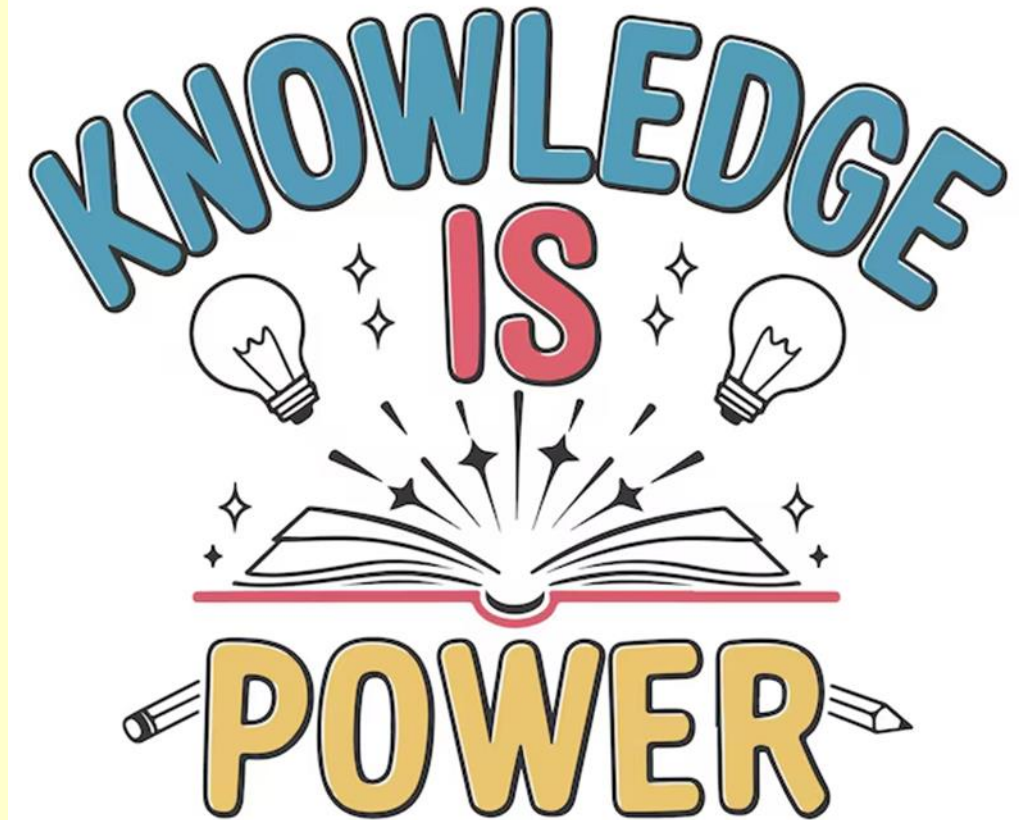


I know it seems way too simple! But this is an ancient practice with traditions in all major religions – including Islam and Christianity! I know that it will seem odd at first. That is your worrying mind trying to stop you taking control over it! But stick with it – it will help! Regularly practicing will really help!

If you are struggling with worries regularly you might want to get some support – you can start with Kooth – go to their website and sign up – it is easy, and they will help! If you need help on a specific aspect of Mental Health you can always start at the excellent FYI website here: <https://www.fyionorfolk.nhs.uk/> - it costs nothing to sign up and get help!

Open
Academy
Year 8
Knowledge
Organiser

Spring Term
2



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Page 50 – Science –Topic 1– Earth Structure (Geologist). Topic 2 – Respiration (Sports Scientists)

Page 51 – Science –Topic 3 – Magnets (Car Mechanic)

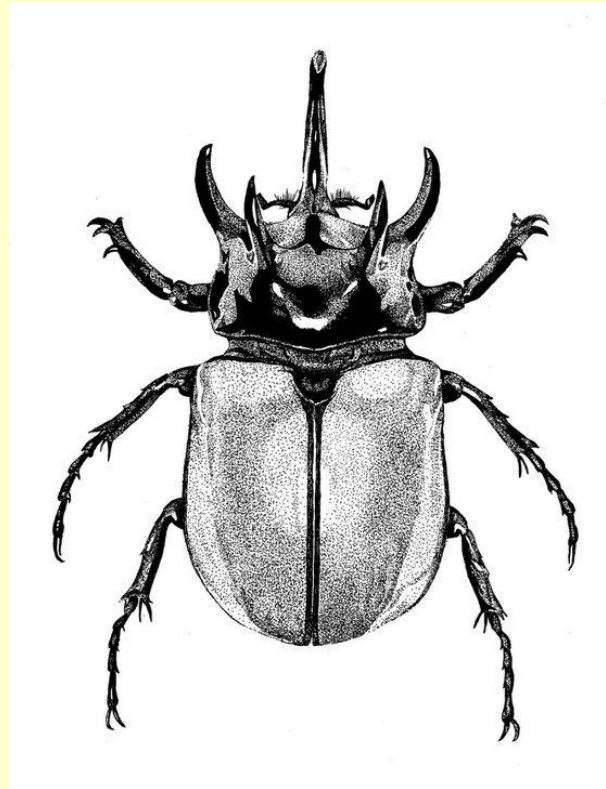
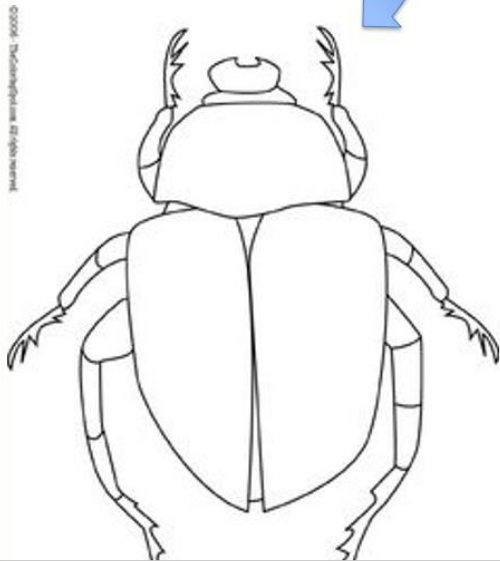
Page 52 – Spanish – Topic: Mi familia y mis amigos

Page 53 – Wellbeing – Topic: Meditation - continued

Year 8 Art – Topic: Bugs!

TASK 1 – Research insect patterns and stick an image to this sheet

TASK 2
Using patterns found on bugs add pattern to the beetle in the style of Wanda Shum



Try drawing from these insects using regular pencil, pen and then oil pastel on a black surface.

Focus on small areas if easier and watch the demo videos on the left first.



Insect Speed drawing video

<https://www.youtube.com/watch?v=zomfrHyCMhw>

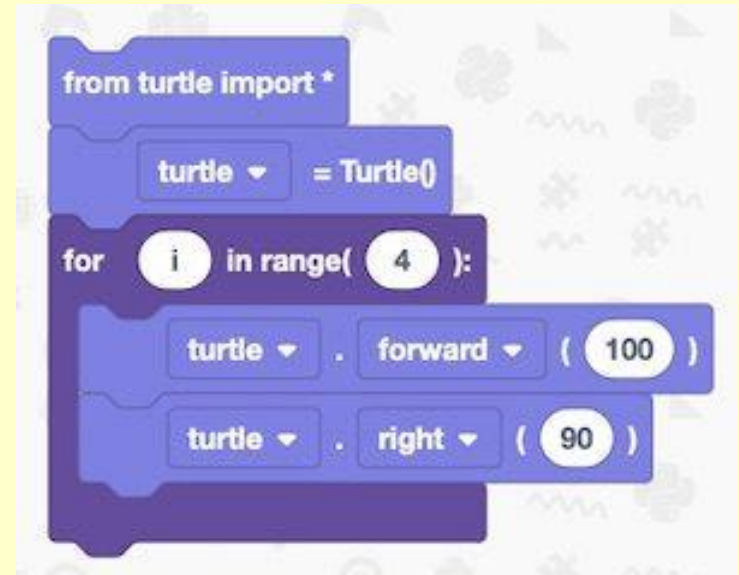
Pen drawing video

<https://www.youtube.com/watch?v=LJORA9itXLc>

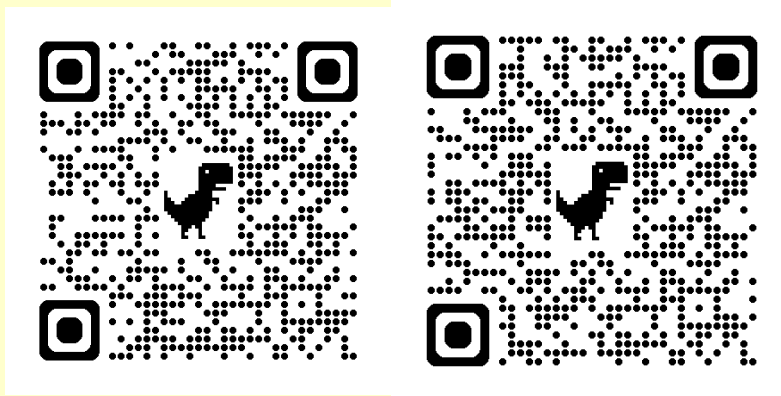
Year 8 Computer Science – Topic: EduBlocks

Topic 1 – Key takeaways:

- The turtle module lets users create graphics by controlling the movement of a turtle.
- Simple commands like `forward()` and `left()` build basic shapes.
- Loops in EduBlocks allow you to repeat actions, making code more efficient.
- Nested loops are used for creating patterns and more complex designs.
- Conditional statements allow programs to respond to different inputs. In Turtle, conditions can make the program interactive based on user inputs.



Topic key vocabulary:
Iteration
Conditional Statement
Turtle.pen()
If $x > 2$
Selection
Sequencing
Boolean



Key Questions: How can turtle programming help you understand geometry?
How would you use a loop to draw a hexagon with Turtle?
What is the role of if-else in making a Turtle game?

Year 8 Design and Technology – Topic: Sweet Dispensers



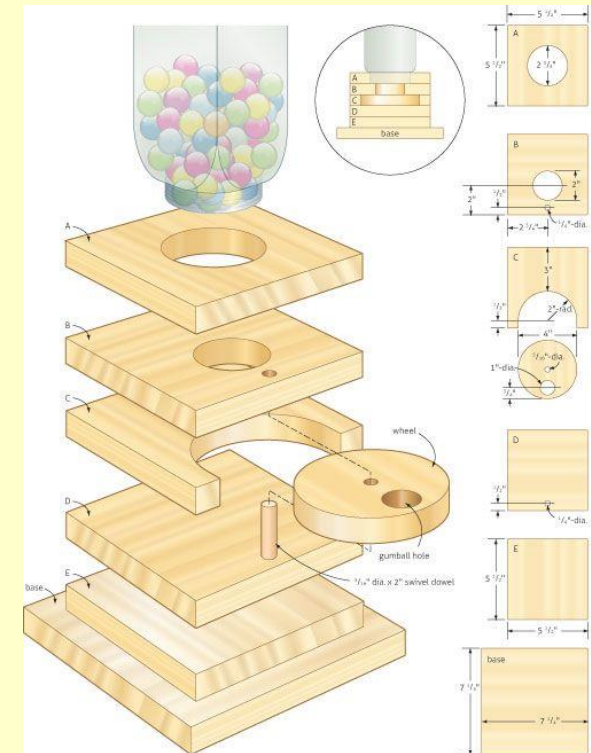
Word Bank

Pine
Fretsaw
Measurements
Accuracy
Function
Half moon file
Sanding
Midpoint

These are the key principles of design we will be looking at this term when working in the Workshop with Resistant Materials. The project is to follow step by step instructions and measurements to produce a functioning sweet dispenser.

Exam Style Questions?

- Which practical skills will you use when making your sweet dispenser to ensure an accurate outcome?
- How does using natural materials have a positive impact on the environment compared to using manmade materials?
- How will you ensure a high-quality outcome? What quality control checks will you put in place?



1. Source of Origin

- **Softwoods** come from coniferous trees, which are typically evergreen (e.g., pine, fir, spruce, cedar).
- **Hardwoods** come from deciduous trees, which shed their leaves annually (e.g., oak, maple, walnut, mahogany).

2. Density and Durability

- **Softwoods** tend to be less dense, lighter, and easier to work with, but they can be less durable and more prone to dents and scratches.
- **Hardwoods** are usually denser, stronger, and more durable, making them better suited for heavy-duty applications, furniture, and flooring.

3. Growth Rate

- **Softwoods** grow much faster than hardwoods, which is why they are often less expensive and more readily available.
- **Hardwoods** grow slower, meaning they are more expensive due to longer maturation times and limited availability.

4. Grain and Appearance

- **Softwoods** typically have a simpler, straighter grain and a lighter color (e.g., light yellow, pale brown).
- **Hardwoods** often have a more complex grain pattern, with a wider variety of colors and textures (e.g., rich browns, reds, and deep tones).

5. Uses

- **Softwoods** are commonly used for construction, paper products, and inexpensive furniture due to their availability and ease of use.
- **Hardwoods** are often used for high-quality furniture, cabinetry, flooring, and other fine wood products because of their strength and aesthetic appeal.

Year 8 Drama – Topic: Working with texts

Meaning can be shown both physically and vocally. The following are skills used by actors to communicate characters' personality and intention – this is known as Characterisation.

Key Terminology

- **Body Language** – Showing what you feel by the way you stand.
- **Gesture** – how you communicate with your hands and/or arms.
- **Facial expression** – showing what you feel on your face.
- **Voice tone** – the emotion that you are putting into your voice. E.g an angry tone of voice.
- **Pitch** – how high or low you are speaking.
- **Pace** – how fast or slow you are speaking.
- **Pause** – Allowing breaks in the speaking
- **Accent** – changing the way you speak to show where you are from.
- **Status** – how important your character is. This can be shown by the way you stand, talk, walk etc...



Key Questions:

- What is being communicated in these two pictures?
- How is body language being used?
- How is costume being used?

Meaning can also be shown through the design elements.

Costume is what the character wears and is used to show more about their personality. It can show their age, status, and the time period the play is set in.

Lighting is used to create atmosphere and show the time of day. This is done using colour, angle, and intensity. For example, a dimly lit stage with a cold blue light may create an atmosphere of mystery or suspense, set in the early evening.

Sound is used to add to the atmosphere, heighten emotions and can also be used to show locations for example a wind blowing and a wolf howling can create an eerie atmosphere.

Set includes the scenery, and anything on the stage which is used to show when and where the play takes place. It is used to create levels and make the performing space look visually interesting

Year 8 English – Hamlet

Plot summary

Hamlet is one of Shakespeare's most famous tragedies. The story takes place in Denmark and follows Prince Hamlet, who is deeply upset after his father, the King, dies unexpectedly. Hamlet's uncle Claudius, swiftly marries Hamlet's mother, assuming the title of king. One night, Hamlet sees the ghost of his father, who reveals that Claudius murdered him for power. The ghost sets Hamlet upon the path of revenge. Hamlet's choices lead to several misunderstandings and tragedies, including the death of his lover Ophelia. Eventually, Hamlet confronts Claudius, ending with great consequences.

Key characters and research prompts:

Hamlet – Throughout the play, Hamlet grapples with the potential consequences of his choices and actions. His actions invite the audience to consider questions of morality.

Research views on morality in Hamlet. How might different characters view his choices?

Claudius – A murderer and now King of Denmark. Claudius is characterised through an ability to manipulate and persuade others.

Research inspirations behind Shakespeare's character Claudius.

Ophelia – Hamlet's lover, his choices drive her to madness and ultimately her death.

Research similarities between her and Juliet from Romeo and Juliet. What questions might Shakespeare be exploring?

Context

Hamlet was written during a time of political uncertainty. This uncertainty is mirrored in the play. Queen Elizabeth I was sixty-eight and had no heirs. It was unclear who would succeed her. By choosing not to name her successor, she became victim of accusations about being an irresponsible ruler. In Hamlet's Denmark, there are also questions of who should rule. The new king Claudius is neglectful and rumours swirl about an imminent invasion, hoping to take advantage of Denmark's weakness without an obvious ruler. Shakespeare captures the late Elizabethan fear of a very near future.

Links - Feminism

In Year 7 we studied Macbeth. In that tragedy, Lady Macbeth convinces her husband to kill his king and assume power. Ultimately, her choices drive her to madness.

As we read Hamlet, consider how Shakespeare presents females in his dramas. Do they control their fates/destinies or are they victims of decisions made by men?

What issues with Shakespeare's presentation of women might be realised today?

Links

When we studied Lord of the Flies we considered what good leadership looks like. In Hamlet, Shakespeare is also asking the question of who should lead and what is required of that person.

Tip: When answering questions, consider what point of view or perspective Shakespeare wants to leave his audience with.



Year 8 English – Hamlet

Study skills for this course:

Studying Shakespeare can be a challenge because of his language and the subtle differences in his influences.

1. Make a glossary of any unfamiliar words you read in Hamlet and discuss with your teacher/search in a dictionary. Try to use them in a sentence of your own.
2. Produce a poster of research on key context to Hamlet. You can then refer to this when writing an include key context that helps explain your points.

Example Progress Folder Tasks

1. How does Shakespeare use language to show Hamlet's conflicted feelings?
2. Write a diary entry from the perspective of Ophelia.
3. A student says, 'By the end of the play, the audience has little sympathy with Hamlet. His actions have caused the death of innocent lives.' To what extent do you agree with this statement?

Success Criteria

Analysis tasks require you to make sure you have specific ingredients in your answer. By Spring in Year 8, you will be familiar with these and need to develop them further.

Thesis Statements – Include an introduction that shows the 'golden idea' you're going to explore.

Evidence – Try to find more than one piece of evidence that supports your point. These should be relevant.

Context – What has motivated Shakespeare to make this choice?

Ambitious Vocabulary

Apostasy – The abandonment of a religious or political belief.

Dichotomy – A division or contrast between two things that are entirely different.

Ephemeral – Lasting for a very short amount of time.

Impetuous – Acting or done quickly without thought or care.

Interloper – A person who becomes involved in a situation where they are not wanted.

Machiavellian – Characterised by cunning and deceitful behaviour.

Revenant – A person who has returned, especially from the dead.

Surreptitious – Kept secret, especially because it would not be approved of.

Usurpation – The act of wrongfully taking something, especially power.

Venal – Willing to behave dishonestly for money or personal gain.

Dramatic / Linguistic Vocabulary

Anagnorisis – The moment in a tragedy when a character makes a critical discovery.

Catharsis – The process of evoking strong or repressed emotions.

Hamartia – A flaw in a character's personality that will lead to their downfall.

Prose – Language without structured rhythm or meter. Shakespeare often uses this in informal or emotional situations.

Soliloquy – A type of dialogue when only one character is present on stage.

Verse – A form of writing that uses structured meter and incorporate rhyme. Shakespeare typically uses when significant characters are speaking.

Tip: Use the ambitious vocabulary in your answers and the dramatic vocabulary to identify the methods the author is using.

Year 8 Food Technology – Topic: Dietary related Health Problems and The Eatwell Guide

The Eatwell guide

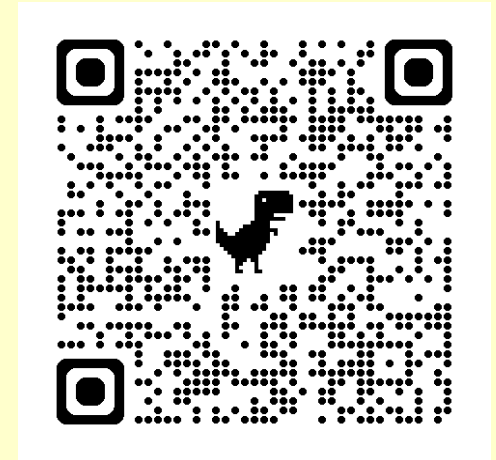
The Eatwell guide is a government guide designed to show you the proportions of different foods groups you should eat over a day or more.

The Eatwell guide is made up of 5 sections:

- **Fruit and vegetables:** Eat 5 portions of fruit and vegetables a day, this should make up 1/3 of your plate a day!
- **Potatoess, bread, rice, pasta and other starchy carbohydrates:** Choose wholemeal options of foods such as bread, rice and pasta.
- **Oils and spreads:** Choose unsaturated fats such as vegetable oils and margarine over butter.
- **Dairy and alternatives:** Choose lower fat options such as skimmed milk and low fat and salt cheese.
- **Beans, pulses, fish, eggs, meat and other proteins:** Eat more beans and pulses as they are high in fibre and fill you up for longer and cut the visible fat off meat.

Dietary related health problems

- **Obesity** – This is when someone is very over-weight. This can cause serious health problems like diabetes and heart conditions. Causes of obesity include a lack of excersise and unhealthy diet high in fat and sugar.
- **Coronary Heart Disease** – A condition where the blood vessels to the heart become narrow or blocked. This can cause chest pains or in more serious cases heart attacks. Causes include a lack of exercise, diet high in fat and salt.
- **Diabetes** – This is when the body doesn't produce enough insuline to regulate blood sugar levels. Causes include being obese or having a diet high in sugar.



Scan to veiw the Eatwell Guide!

Key Vocabulary

The Eatwell Guide
Proportions
Wholemeal
Unsaturated
Low-fat
Pulses
Obesity
Coronary heart
disease
Diabetes
Causes

Example questions:

What is the Eatwell Guide?
How can you make healthy choices when eating dairy and alternatives?
What are the main causes of obesity?
What is diabetes?
What are the main causes of coronary heart disease?

Year 8 Geography – Topic: Glaciation

Glaciation

The Earth has experienced periods of much colder climate throughout its past climate over the last million years.

The last Ice Age

This ended approximately 10,000 years ago but was interrupted by the '**yunger-dryas**' sudden downturn. The Victorian period saw colder winters in a time that was termed 'the little ice age' but this was not a real one.

Glacial processes

Under huge amounts of weight, snow that built up in layers, compacted into ice, this then slowly moved down hill under gravity.

'**Glaciers**' were formed and these 'carved' the landscape in mountainous areas into steep slopes and deep valleys.

Erosion and **deposition** were two of the main processes.

Additional research:

How do UK glaciated areas link to the UK's current river systems?

Glacial erosion

Under the sheer weight of ice, glaciers moved down hill, picking up loose rocks and using them as grinding tools to wear away the valley floors.

As the valley floors were worn down, they created smoothed rock surfaces and deep valleys, scoured by '**abrasion**'.

A second process called '**plucking**' caused ice to melt and freeze around rocks at the base, picking them away from the rock faces.

4 main features found in 'glaciated' areas:

Pyramid peaks

Aretes

Corries

Ribbon Lakes



Glaciated areas and humans:

Hydro-electric power and water supply

Tourism – walking, biking, climbing, skiing

Farming – Pastoral farming

Fishing – Salmon and trout fishing

Mining and forestry

Key Vocabulary

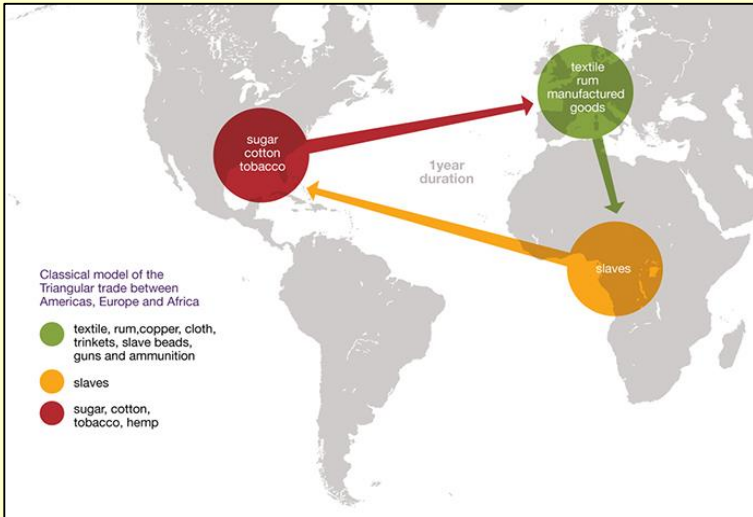
Glaciers
Glacial epoch
Inter-glacial
Landforms
Processes
Arete
Corries
Freeze-thaw
weathering
Neve
Erosion
Avalanche
Carving
Striations
Roche Moutonee
Drumlins
Meltwater
Rock fall
Erratics
Fjords
Screes
Pyramid peaks
Ice cap
Basal slipping
Moulin
Eskers

Year 8 History – Topic: The Transatlantic Slave Trade

1. During the 19th century, Britain saw its **empire** grow significantly. It was regarded as a great source of wealth and status for Britain. However, this came at a terrible human cost in the **Transatlantic Slave Trade**.
2. Slaves were traded across the world. Ships were loaded in England with goods such as guns, cloth and salt. This was taken to Africa and traded for slaves.
3. The ships then went on a 2-3-month journey, known as the **Middle Passage**, to the Caribbean.
4. Here the slaves were sold to work in the **cotton plantations** and farms.
5. The ship was then loaded with sugar and cotton, to be taken back to England to be sold for huge profits.

Example questions:

1. Which 3 places made up the 'Triangular Trade'? [3 marks]
2. Describe conditions on the Middle Passage [5 marks]
3. Explain why the slave trade ended [9 marks]



Who benefitted from the slave trade?

Plantation Owners - Grew 'cash' crops of sugar, tobacco, coffee, spices and cotton for sale back in Europe.

African Tribal Leaders - Captured slaves through war between rivals over land. They would then trade their captures for weaponry and gunpowder to increase their power in their native land.

British Businessmen - Areas such as Liverpool and Bristol where the ships were built and goods imported got extremely rich

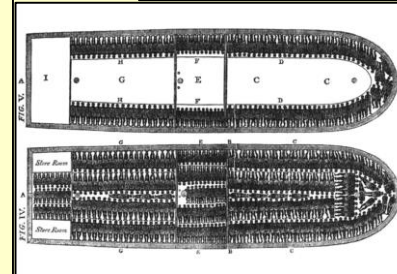
British towns, cities, and British people in general - Most people in Britain benefitted directly or indirectly from the slave trade. It made Britain a rich country.

The Middle Passage.

Slaves suffered through terrible conditions on the Middle Passage. Many died during the journey. They were packed into the ship tightly and laid down for most of the journey. They were severely punished should they disobey orders. Slaves were chained up for the entire journey; diseases spread quickly. Some threw themselves overboard.

Key Vocabulary

- Abolition
- Africa
- Britain
- Caribbean
- Empire
- Middle Passage
- Plantation
- Profit
- Slave
- Trade
- Triangular Trade



A diagram showing a packed slave ship.

Why was slavery abolished?

1. **Economics** - Sugar plantations closed as cheap sugar could be bought from Brazil and Cuba.
2. **Campaigners** – Individuals like Granville Sharp and Thomas Clarkson fought freedom cases in court. Olaudah Equiano, and ex-slave, sold his story. Press and publicity influenced attitudes against slavery.
3. **Religion** - Christian groups, such as the Quakers, thought that slavery was a sin. William Wilberforce used his position as MP to campaign for change.
4. **Slave rebellions** – for example, the Maroons in Jamaica.

Year 8 Maths - Unit 8 – Fractions and Percentages

What do I need to be able to do?

- Convert between Fractions, Decimals and Percentages
- Increase or Decrease using multipliers
- Express an amount as a percentage
- Find percentage change

Vocabulary

Decimal: numbers to the right of the decimal point

Equivalent: have the same value

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

Integer: a whole number with no decimal, can be positive, negative or zero.

Interest: an increase to an amount

Invest: use money with the goal of it increasing over time

Growth: to increase or go up

Percent: parts per 100, written using the % symbol

Reduce: to make smaller in value

FDP



Fraction of Amount



Percentage of Amount



Percentage Multipliers



Convert FDP

R

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

Using a calculator → → $\frac{70}{100}$ → 0.7 → $\times 100$ converts to a percentage

Be careful of recurring decimals
eg $\frac{1}{3} = 0.3333333$
The dot above the 3

Fraction/ Percentage of amount

R

Find $\frac{3}{5}$ of £60 → $\frac{3}{5} \times 60 = 36$ → £36

Remember $\frac{3}{5} = 60\%$

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

Remember $\frac{3}{5} = 60\% = 0.6$
 $0.6 \times 60 = 36$

Convert FDP < and > 100%

100 hundredths 10 tenths 100% → 40 hundredths 4 tenths 40% → 140 hundredths 14 tenths 140%

$100\% + 40\% = 1 + 0.4 = 1.4$

Percentage decrease: Multipliers

100% → 42% → Decrease by 58%

$100\% - 58\% = 42\%$
 $100 - 0.58 = 0.42$

Multiplier Less than 1

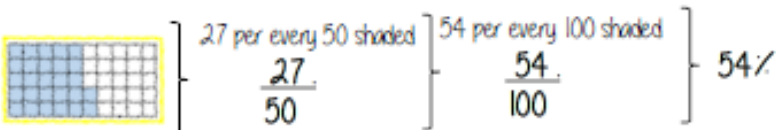
Percentage increase: Multipliers

100% → 12% → Increase by 12%

$100\% + 12\% = 112\%$
 $100 + 0.12 = 1.12$

Multiplier More than 1

Express as a % - Non-calculator Percent - per hundred



Denominator 100 Equivalent fractions

Express as a % - Calculator

Rosie

$$\frac{13}{30} \rightarrow \frac{13}{30} \rightarrow \times 100 \rightarrow 43.3333... \rightarrow 43\%$$

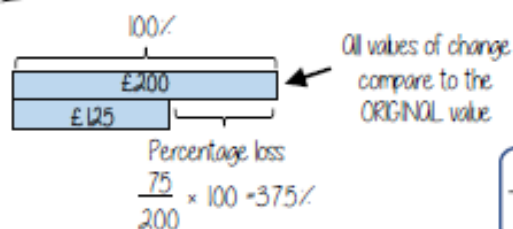
Can't use equivalence easily to find 'per hundred'

This the same as 13 - 30

Decimal percentages are still a percentage.

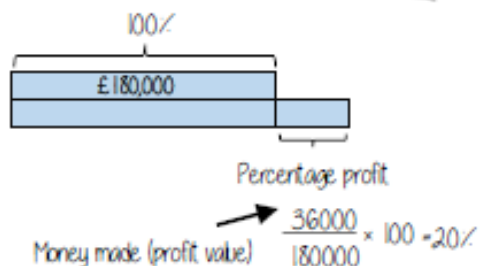
Percentage change

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



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

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



Choose appropriate method

The language and wording of the question is the key

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

Expressing Percentages



Percentage Change



Percentage Increase and Decrease



Fractions to Percentages



A job based on Number Skills:

Chef



A chef's maths begins with the basics of addition, subtraction, multiplication, and division along with ratios, yields, and percentages. Ingredients must be measured and scaled accurately, food production quantities are calculated, and recipes are increased or decreased to scale based on demand.

Year 8 Maths - Unit 9 – Standard Form

What do I need to be able to do?

- Write numbers in standard form as ordinary numbers
- Convert ordinary numbers to standard form
- Add and Subtract with Standard Form
- Multiply and Divide with Standard Form

Vocabulary

Base: The big number that gets multiplied when there is indices.

Commutative: an operation is commutative if changing the order does not change the result

Convert: Turn from one form to another

Exponent /Indices/ Power: The little number that tells you have many times to multiply a number by itself.

Negative: a value below zero

Product: the result of multiplying two numbers together

Standard (Index) Form: a system of writing very big or very small numbers

Sum: the result of adding two numbers together

Positive powers of 10

1 billion – 1 000 000 000

$$10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 = 10^9$$

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

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

Numbers between 0 and 1

0.054
= 5.4×10^{-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

Standard form with numbers > 1

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

Example

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

Non-example

0.8×10^4
 5.3×10^{07}

Negative powers of 10

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

Any value to the power 0 always = 1

Negative powers do not indicate negative solutions

Order numbers in standard form

10^2	10^1	10^0	10^{-1}	10^{-2}	10^{-3}	10^{-4}
6.4×10^{-2}	2.4×10^2	3.3×10^0	1.3×10^{-1}			
0.064	240	1	0.13			

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

Use a place value grid to compare the numbers for ordering

Multiplication by Powers of 10



Division by Powers of 10



Standard Form



Indices



Mental calculations

$$6.4 \times 10^2 \times 1000 \quad \text{Not in Standard Form}$$

$$= 6.4 \times 10^2 \times 10^3 \quad \text{Use addition for indices rule}$$

$$= \underline{6.4 \times 10^5}$$

$$(2 \times 10^3) \div 4 \quad \text{Divide the values}$$

$$= (2 \div 4) \times 10^3$$

$$= \underline{0.5 \times 10^3}$$

$$8 \times 10^5 \times 3 \quad \text{Not in Standard Form}$$

$$= 2.4 \times 10^1 \times 10^5 \quad \text{Use addition for indices rule}$$

$$= \underline{2.4 \times 10^6}$$

Remember the layout for standard form

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

Addition and Subtraction

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

Method 1

$$= 600000 + 800000$$

$$= 1400000$$

$$= \underline{1.4 \times 10^6}$$

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

Method 2

$$= (6 + 8) \times 10^5$$

$$= 14 \times 10^5$$

$$= 1.4 \times 10^1 \times 10^5$$

$$= \underline{1.4 \times 10^6}$$

This is not the final answer \rightarrow

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

Multiplication and division

$$\frac{1.5 \times 10^5}{0.3 \times 10^3}$$

Division questions can look like this

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

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

$$= \underline{5 \times 10^2}$$

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

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

Multiplication law for indices

$$a^m \times a^n = a^{m+n}$$

Subtraction law for indices

$$a^m \div a^n = a^{m-n}$$

Using a calculator

$$14 \times 10^5 \times 3.9 \times 10^3$$

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

Input 14 and press $\times 10^x$ Then press 5 (for the power)
Press \times
Input 3.9 and press $\times 10^x$ Then press 3 (for the power)
Press $=$

This gives you the solution



Click calculator for video tutorial

To put into standard form and a suitable degree of accuracy

Press **SHIFT** **SETUP** and then press 7 for sci mode.

Choose a degree of accuracy so in most cases press 2

Answer: 5.5×10^8

Use of a Calculator



Laws of Indices



Standard Form Calculations



A job based on standard form:

Astronomer



Astronomers are scientists who study the origin of the universe and its objects and how it works. As an astronomer, you can work in observational astronomy, using telescopes and cameras to look at the stars, galaxies and other astronomical objects, or in theoretical astronomy, where you'll use maths and computer models to explain observations and predictions. You could choose to specialise in studying: planets, stars, galaxies or cosmology (the origin of the universe)

Year 8 Maths - Unit 10 – Number Sense

What do I need to be able to do?

- Round numbers to significant figures
- Round numbers to decimal places
- Estimate calculations
- Use BIDMAS for order of operations
- Calculate with money and time

Vocabulary

- Capacity:** how much stuff something can hold
Decimal: place holders after the decimal point
Estimate: to roughly calculate a calculations using numbers close to the original values
Metric: a modern system of measurement e.g Kilograms, metres
Over-Estimate: Rounding up gives a solution higher than the real value
Round: making a number simpler but keeping it close to its value
Significant : Place value of importance
Under-Estimate: Rounding down- gives a solution lower than the real value

Significant Figures



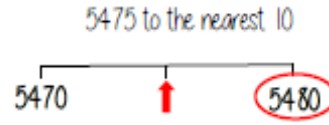
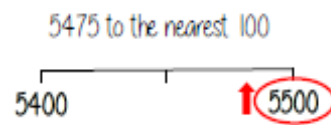
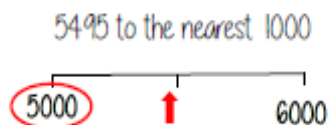
Decimal Places



Estimation



Round to powers of 10 and 1 sig. figure R If the number is halfway between we 'round up'



370 to 1 significant figure is 400
 37 to 1 significant figure is 40
 3.7 to 1 significant figure is 4
 0.37 to 1 significant figure is 0.4
 0.00037 to 1 significant figure is 0.0004

Round to the first non-zero number

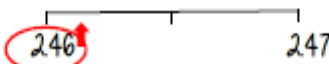
Round to decimal places 2.46192

"To 1dp" – to one number after the decimal
 "To 2dp" – to two numbers after the decimal

2.46192 (to 1dp) - Is this closer to 2.4 or 2.5



2.46192 (to 2dp) - Is this closer to 2.46 or 2.47



2.46192 This shows the number is closer to 2.5

2.46192 This shows the number is closer to 2.46

Estimate the calculation

Round to 1 significant figure to estimate

$$4.2 + 6.7 \approx 4 + 7 \approx 11$$

This is an overestimate because the 6.7 was rounded up more

The equal sign changes to show it is an estimation

$$21.4 \times 3.1 \approx 20 \times 3 \approx 60$$

This is an underestimate because both values were rounded down

It is good to check all calculations with an estimate in all aspects of maths – it helps you identify calculation errors

Order of operations



Brackets Operations in brackets are calculated first

Other operations e.g. powers, roots,

Multiplication/ Division

They are carried out in the order from left to right in the question

Addition/ Subtraction

They are carried out in the order from left to right in the question

Calculations with money

Debit - You have £0 or more in an account

Credit - You have less than £0 in an account



Using a calculator - ensure you are working in the correct units

£1.30 + 50p = 130 + 50 (in pence)
= 130 + 0.50 (in pounds)

Money calculations are to 2dp

£1 = 100p



Order of Operations



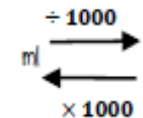
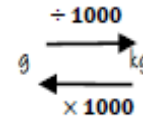
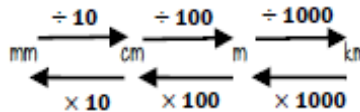
Metric Conversions



Time



Units are important: Useful Conversions



Metric measures of length

Kilo - 1000 x meter Centi - $\frac{1}{100}$ x meter

Milli - $\frac{1}{1000}$ x meter

Time and the calendar



1 Year - the amount of time it takes Earth to go around the sun 365 (and a quarter) days
Leap Year - 366 days (every 4 years)



12 Months = one year = 52 weeks
31 days - Jan, March, May, July, Aug, Oct, Dec
30 days - April, June, Sept, Nov
28 days - Feb (29 leap year)

1 week - 7 days
Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday

1 day - 24 hours
1 hour - 60 minutes
1 minute - 60 seconds

Use a number line for time calculations!

Units of weight/ capacity

Weight - g, kg, t
Capacity (volume of liquid) - ml, L

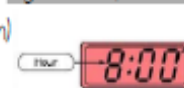
Analogue Clock



12-hour clock

- Use am (morning) and pm (afternoon)
- Only use hour times up to 12

Digital Clock (24-hour times)



24-hour clock

- 0-11 (morning hours)
- 12-23 (afternoon hours)

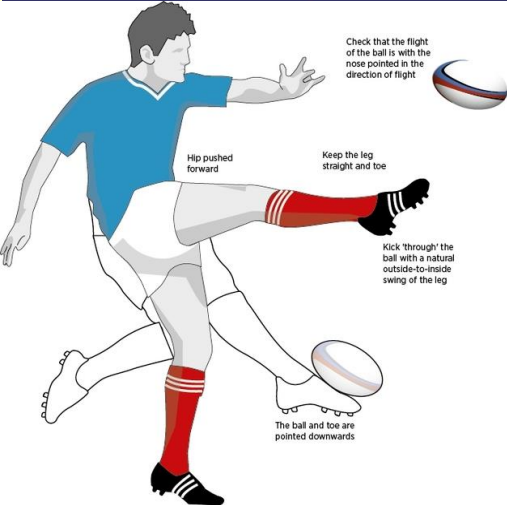
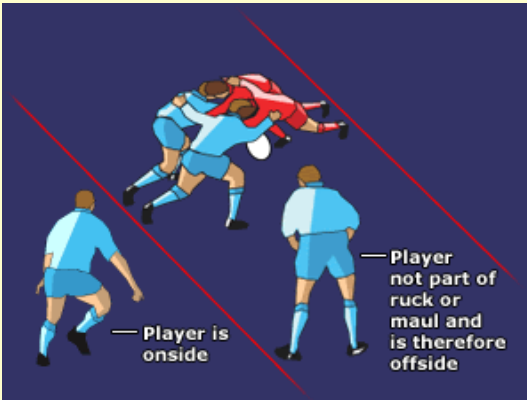
A job based on number sense:

Events Planner



Event planners **develop, plan, and execute a variety of both internal and external events**. They oversee all aspects of event planning and management, including identifying and working with a variety of external venues/facilities, negotiating contracts with vendors, and maintaining and managing event budgets.

Year 8 Physical Education – Topic – Rugby



Rules of The Game



Key skills

Developing passing

Is being able to understand and accurately replicate the scissors & miss pass, and how to receive it and to create and develop varying strategic ways of getting passed defenders. Performing skills in a small sided game with pressure from opposition.

Develop tackling technique

Is being able to develop an understanding & knowledge of tackling technique and safely replicating the correct technique on advancing opposition and understanding the rules regarding tackling within the game.

Kicking

Is being able to perform the correct kicking technique from the ground and out of hand with control and accuracy. This includes beginning to combine the use of passing and kicking to outwit opponents and understanding when to use the kick and the advantages gained from it.

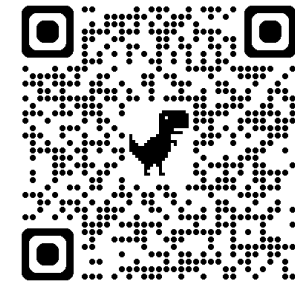
Tactical play/outwitting opponents

Is developing knowledge and understanding of strategic play used to outwit opponent and to be able to change and refine tactics based on the analysis of certain plays and opposition.



Ruck

A ruck typically evolves from a tackle situation and can develop into an effective method of retaining or contesting possession. A ruck can commit defenders, therefore creating an opportunity to create space. On formation of the ruck, offside lines are created.



Key Vocabulary

- Advantage
- Backwards
- Conversion
- Kicking
- Offside
- Pass
- Penalty
- Ruck
- Tackle
- Tactical
- Try

Year 8 Physical Education – Topic –Gymnastics.

Skills

I can perform basic shapes (pike, straddle, tuck, dish, arch) with body tension, extension and control.

I can perform effective flight off a bench, springboard and trampette. (2 footed jump)

I can jump on and off different apparatus. (Horse, box, bench, table)

I can demonstrate different types of vaults (squat, through, straddle, side, handspring, round off)

Health and Fitness

I can warm up effectively in preparation for gymnastics (pulse raiser, mobilisation and preparation stretches)

I can identify the different components of fitness required to perform well in gymnastics. Balance, **the ability to retain control over the distribution of weight or remain upright and steady static – This is a still action, dynamic – Keeping your balance whilst moving.** Flexibility **A full range of motion at a joint,** muscular strength **The ability to exert a large amount of force in a single maximum effort.**

I can identify ways in which I could improve these components of fitness.

Choreography

I can critically evaluate my own and other performances and give feedback to help improve work.

I can use technical language in planning routines and performances.

I can select different actions based on my skill level.

Leadership

I bring correct kit for PE

I show willingness to improve by actively engaging in each lesson.

I can successfully coach a partner or small group suggesting improvements.

I can identify strengths and weaknesses in my own and others performance.



Rules

Remove all jewellery, tie back long hair and have bare feet or grip socks

Hold balances for 3 seconds

All routines should have a clear start and finish

Always perform agilities on a mat

Always have good tension, extension, and control

Ensure the springboard/ trampette/ vault/mat area are clear before performing a skill

Key Vocabulary

Body tension and extension

Control

Tuck, Pike, Straddle

Twist

Flight

Trampette

Somersault

Round off

Handspring

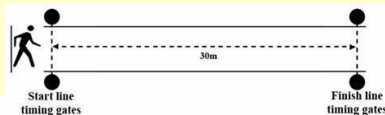
Squat vault, through vault, straddle vault, side vault

Year 8 Physical Education – Topic: Health Related Fitness

Speed:

The time taken to cover a set distance

Fitness test:
30m sprint test



Method of training:
Acceleration sprints

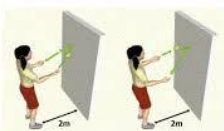
Sporting example:

100m sprinter = Usain Bolt

Co-ordination:

The ability to use two or more body parts at the same time.

Alternate Hand Wall Throw



Fitness test:

Alternate wall ball throw

Method of training:

Co-ordination drills

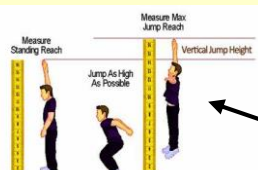
Sporting example:

Badminton player or tennis player



Power:

The combination of strength and speed.



Fitness test:

Vertical jump test
Standing broad jump



Method of training:

Plyometrics



Sporting example:

Long jumper or high jumper

Agility:

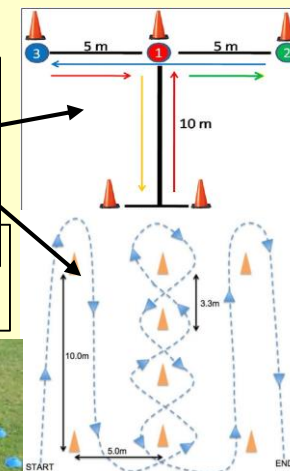
The ability to change direction quickly in control

Fitness test:

T-test
Illinois agility test

Method of training:

SAQ training
(Speed, agility, quickness)



Sporting example:

Basketball players when they dribble around opponents

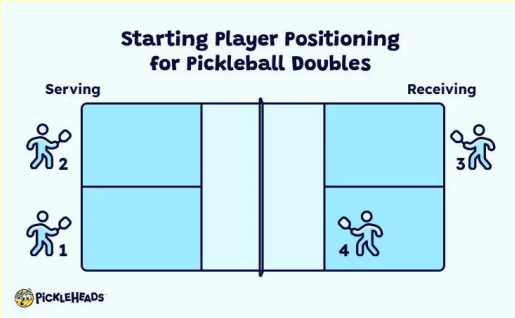
Key Vocabulary

Agility
Co-ordination
Power
Speed

Year 8 Physical Education – Topic: Pickleball

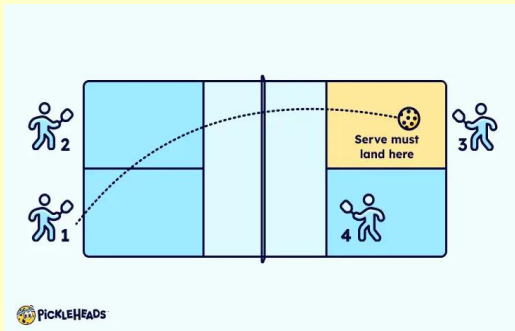
The pickleball court and serve:

first team to 11 points wins—but you must win by 2.



The pickleball game starts with a serve. The player on the right side of their court always starts the serve. You serve diagonally to your opponent.

The serve in pickleball is underarm.



Scoring:

In pickleball scoring, you'll hear players announce three numbers, like "0-0-2". Here's what each number means:

<p>First Number score of the serving team</p>	<p>Second Number score of the receiving team</p>	<p>Third Number which player of the team is serving, first server (1) or second server (2)</p>
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Let's say the game is tied at 3-3. If you start the serve, you'll announce "3-3-1", so everyone knows you are the first player in rotation serving.

If you lose the rally, the ball doesn't go to your opponents. It goes to your teammate who will announce "3-3-2".

If your partner loses their serve, a "side out" occurs. This means that they've lost their two serves and it's now their opponent's turn to serve. Their opponents then call out "3-3-1" before starting their serve.

3 - 3 - 1

Serving team's score	Receiving team's score	Current server (will be 1 or 2)
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Shots:

<p><u>Dinks</u> Played closer to the net, these touch shots are hit into your opponent's kitchen and help keep the other team from attacking.</p>	<p><u>Volleys</u> These shots are hit out of the air before the ball bounces. They can only be played outside the kitchen.</p>
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<p><u>Forehand/backhand Drives</u> These powerful shots are hit off the bounce, often from the baseline. They are played using a forehand or backhand swing.</p>
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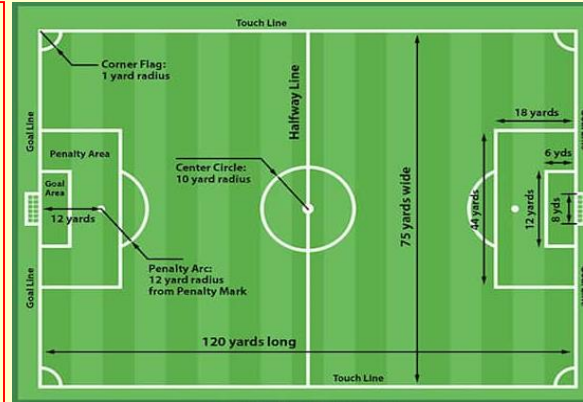
Key words:

- Scoring
- Serving
- Dinks
- Volleys
- Forehand
- Backhand
- Drive

Year 8 Physical Education – Topic: Football

Rules of The Game 11-a-side

- A match consists of two 45 minutes halves with a 15-minute rest period in between.
- Each team can name up to 7 substitute players. Substitutions can be made at any time of the match with each team being able to make a maximum of 3 substitutions per side.
- Each game must include one referee and two assistant referee's (linesmen). It is the job of the referee to act as timekeeper and make any decisions which may need to be made such as fouls, free kicks, throw ins, penalties and added on time at the end of each half. The referee may consult the assistant referees at any time in the match regarding a decision. It is the assistant referee's job to spot offside's in the match, throw ins for either team.
- If the game needs to head to extra time as a result of both teams being level in a match, then 30 minutes will be added in the form of two 15-minute halves after the allotted 90 minutes.
- If teams are still level after extra time, then a penalty shootout must take place.
- The whole ball must cross the goal line for it to constitute as a goal.
- For fouls committed a player could receive either a yellow or red card depending on the severity of the foul; this comes down to the referee's discretion.
- If a ball goes out of play off an opponent in either of the side lines, then it is given as a throw in. If it goes out of play off an attacking player on the base line, then it is a goal kick. If it comes off a defending player, it is a corner kick.



Key skills

Developed Passing - To be able to perform a pass using inside and outside of foot and understand the importance of receiving correctly.

Dribbling and Turns - To be able to perform and accurately replicate different types of dribbling with control, speed and fluency.

Develop Attack - To be able to outwit opponents using learnt skills and techniques at speed

Develop Shooting - To perform and replicate an accurate and controlled shot on goal.

Heading - To develop their understanding and knowledge of how to head the ball correctly and safely

Defensive strategies/tactics - To be able to perform and develop defensive strategies.

PRIOR LEARNING

It is helpful if the pupils have:

- Played a variety of conditioned football games
- Worked independently in small groups
- Used and applied football rules
- Some knowledge of tactics and team
- organization in football
- Developed basic football skills

Key Vocabulary

Indirect Free Kick
Direct Free Kick
Pressure
Attack
Defence
Push-up
Goal side
Play-on
Advantage

Year 8 Religious Studies- Topic- Why is Islam the way it is ?

A young Muhammad

Muhammad was born in 570 in Mecca. Muhammad was born into a noble tribe called the Quraysh. His father died before he was born, and his mother died when he was 6 years old. As an orphan he was looked after by his grandfather and when he died, by his uncle who was a merchant. When he was older, he became a trader for a rich widow called Khadijah, working as the leader of her caravans. He had done such an impressive job with profits through honesty (rather than cheating people like a lot of traders did in those days) that Khadijah asked him to marry her. Muhammad was 25 when he married Khadijah.

He was well known all over Makkah to be the most honest and hard-working man and was nicknamed 'Al-Amin' meaning 'The trustworthy'. Even the chiefs of the Quraysh praised him for this. Everyone knew that when Muhammad spoke, he always spoke to the truth.

In 622CE Muhammad left Makkah. He and his followers were invited to live in Madinah (about 400 km away). His departure, (Hijrah), was important because it was at Madinah that Muhammad set up the first Islamic community. Muslims begin their calendar from this date, the first year of hijrah. The Islamic calendar therefore reads AH 1 when the Christian calendar reads 622 CE.

This symbolises leaving behind darkness (disbelief) and moving into a new era full of light (belief).

Exam questions

1. What does the word pillar mean? (2 marks)
2. What does the word pilgrimage mean? (2 marks)
3. List 3 reasons why someone might go on pilgrimage (3 marks)
4. Why might prayer be important for a Muslim today? (2 marks)
5. There are different types of prayer. List the 4 types of prayer that a believer follows in their daily life.. (4 marks)
6. What are some challenges that a Muslim may experience in their daily lives? Explain your answer using examples. (4 marks)

Key Vocabulary

Tawhid
Pilgrimage
Mosque
Symbol
Pillars
Hadith
Surah
Sunni
Shia

Arabia- During the time of Muhammad

Countryside-Arabia was a very poor area, mostly desert or scrub.

People-Some of these were Bedouins who were Nomads, constantly moving their sheep, camels and tents from place to place in search of food and water for themselves and for their animals.

Houses-The Nomad Arabs lived in tents as they had to move around Arabia from place to place. However those who lived in villages and towns had houses made out of mud. As they moved there animals around from market to market they would take everything with them.

Travel and Work-Many Arabs made a living from tending sheep.

Others used camels in groups, called caravans, to carry goods from town to town to sell.

Religion-There was no single religion in Arabia.

Most Arabs worshipped several gods and spirits that they believed lived in rocks and trees. A very small number of them believed in one God (such as the Arab Christians and Arab Jews).

Kings & Rulers-The Arabs were split in to many tribes. There was no single king who ruled them. The Ka'ba was the most important building in all of Arabia. It was used as a temple for worship. The Ka'ba had over 360 altars, statues and other religious objects or idols which all the Arabs worshipped. People would travel hundred of miles to visit and worship at the Ka'ba.



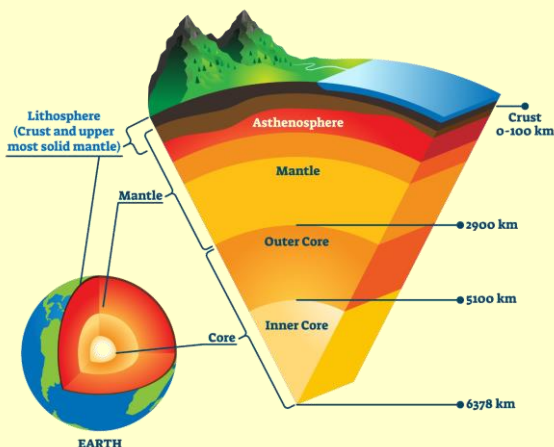
Year 8 Science

Spring 2 – Topic 1– Earth Structure (Geologist)

Topic 1 – Key takeaways:

- The Earth is made up of different layers: crust, mantle, outer core, and inner core.
- Earth's crust is divided into plates that move, causing earthquakes, volcanoes, and mountain formation.
- The rock cycle describes how rocks change between igneous, sedimentary, and metamorphic forms.
- Igneous rocks form from the cooling and solidification of molten magma or lava.
- The water cycle moves water through evaporation, condensation, precipitation, and collection.

Topic key vocabulary:
Mantle,
Crust,
Inner core,
Igneous,
Sedimentary,
Precipitation



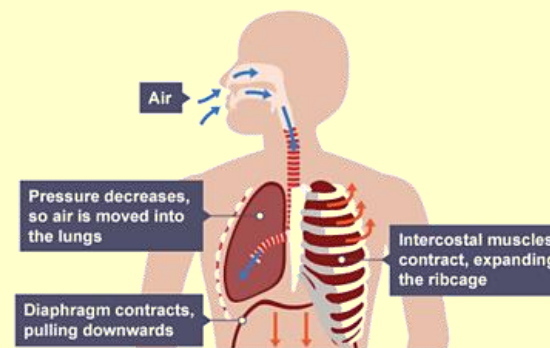
Key Questions: Write the word equation for the neutralisation reaction between hydrochloric acid and sodium hydroxide. What is the role of an indicator in identifying acids and alkalis? Name one example of an indicator.

Topic 2 – Respiration (Sports Scientists)

Topic 2 – Key takeaways:

- Respiration is a process where glucose and oxygen are used to release energy in cells.
- Combustion is a chemical reaction between a fuel and oxygen that releases energy as heat and light.
- The rate of breathing increases during exercise to supply more oxygen to the muscles.
- Anaerobic respiration occurs without oxygen and produces less energy, often forming lactic acid.

Topic key vocabulary:
Anaerobic
Respiration
Aerobic
respiration
Mitochondria
Oxygen debt
Breathing rate



Key Questions : Write the word equation for aerobic respiration. Compare the processes of combustion and respiration. Why does your breathing rate increase after physical activity? Compare the products of aerobic and anaerobic respiration in humans.

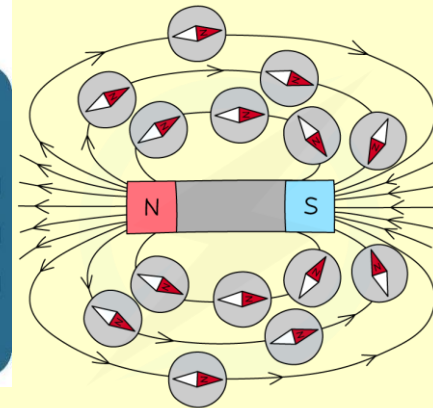
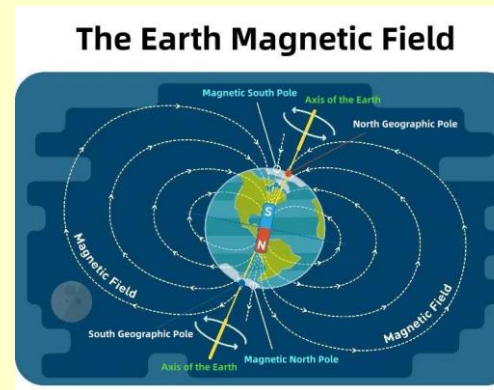
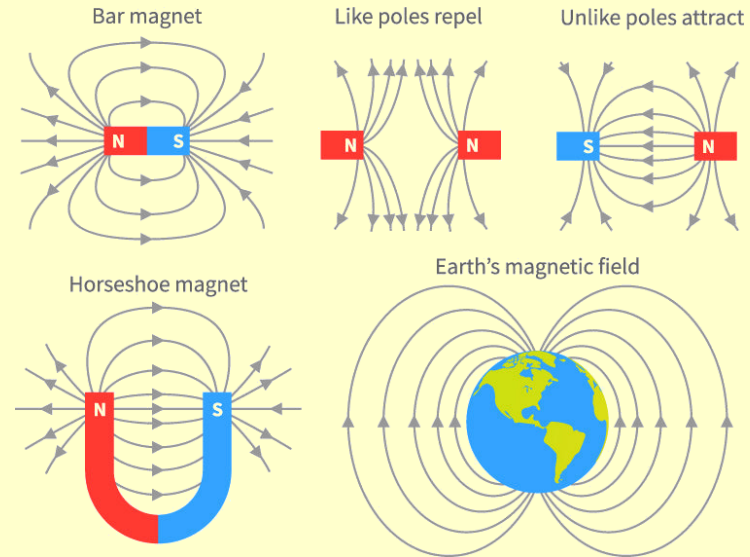
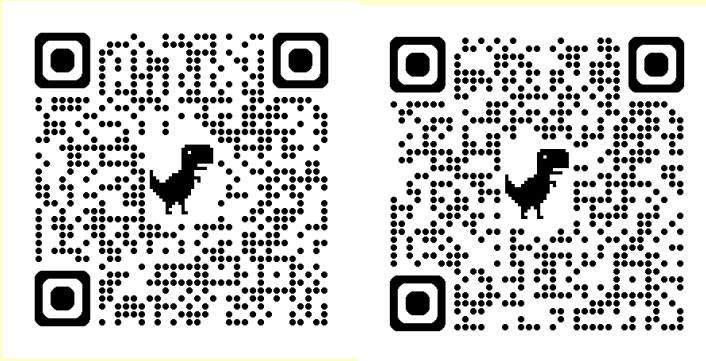
Year 8 Science

Topic 3 – Magnets (Car Mechanic)

Topic 1 – Key takeaways:

- Magnets produce a magnetic field and can attract or repel certain materials.
- Magnetic field lines show the direction and strength of the magnetic field around a magnet.
- A compass uses a small magnetic needle that aligns with Earth's magnetic field to show direction.
- Electromagnets are created by passing an electric current through a wire coil wrapped around a magnetic core.

Key vocabulary:
Magnetic
Material
Magnetic Field
Electromagnet
Induced
Repel
Attractive



Key Questions:

Name three magnetic materials and describe one use of a magnet in daily life. Describe two ways to make an electromagnet stronger.

Key Questions :

Draw and label the magnetic field lines around a bar magnet.
Explain how a compass works and why it is useful for navigation.

Year 8 Wellbeing – Topic: Meditation

Mindfulness and Meditation can help most people at times!

Our 'everyday mind' can end up full of worries about things which are no longer true or happening or fretting about what MIGHT happen in the future – even though we know it may not! The idea is that we are more than these conscious thoughts.

Challenging things happen, we cannot avoid that, but what we think about those challenges is very much up to us

To worry and repeatedly think about difficult things can become suffering - a habit it is all too easy to fall in. The good news however is that we can avoid it! How?

When we notice that we are worrying about things - playing through possible futures like a film in our heads or imagining something going wrong, or even remembering difficult things, unpleasant experiences, **we can simply choose to bring ourselves back to the present moment, by thinking about our breathing.**

This practice comes with lots of benefits...

How to Practice Mindfulness

- 1 Take a seat.** Find a place to sit that feels calm and quiet to you.
- 2 Set a time limit.** If you're just beginning, it can help to choose a short time, such as 5 or 10 minutes.
- 3 Notice your body.** You can sit or kneel however is comfortable for you. Just make sure you are stable and in a position, you can stay in for a while.
- 4 Feel your breath.** Follow the sensation of your breath as it goes out and as it goes in.
- 5 Notice when your mind has wandered.** When you get around to noticing this—in a few seconds, a minute, five minutes—simply return your attention to the breath.
- 6 Be kind to your wandering mind.** Don't judge yourself or obsess over the content of the thoughts you find yourself lost in. Just come back.



The Benefits of Meditation for Students



I know it seems way too simple! But this is an ancient practice with traditions in all major religions – including Islam and Christianity! I know that it will seem odd at first. That is your worrying mind trying to stop you taking control over it! But stick with it – it will help! Regularly practicing will really help!

If you are struggling with worries regularly you might want to get some support – you can start with Kooth – go to their website and sign up – it is easy, and they will help! If you need help on a specific aspect of Mental Health you can always start at the excellent FYI website here: <https://www.fyiorfolk.nhs.uk/> - it costs nothing to sign up and get help!