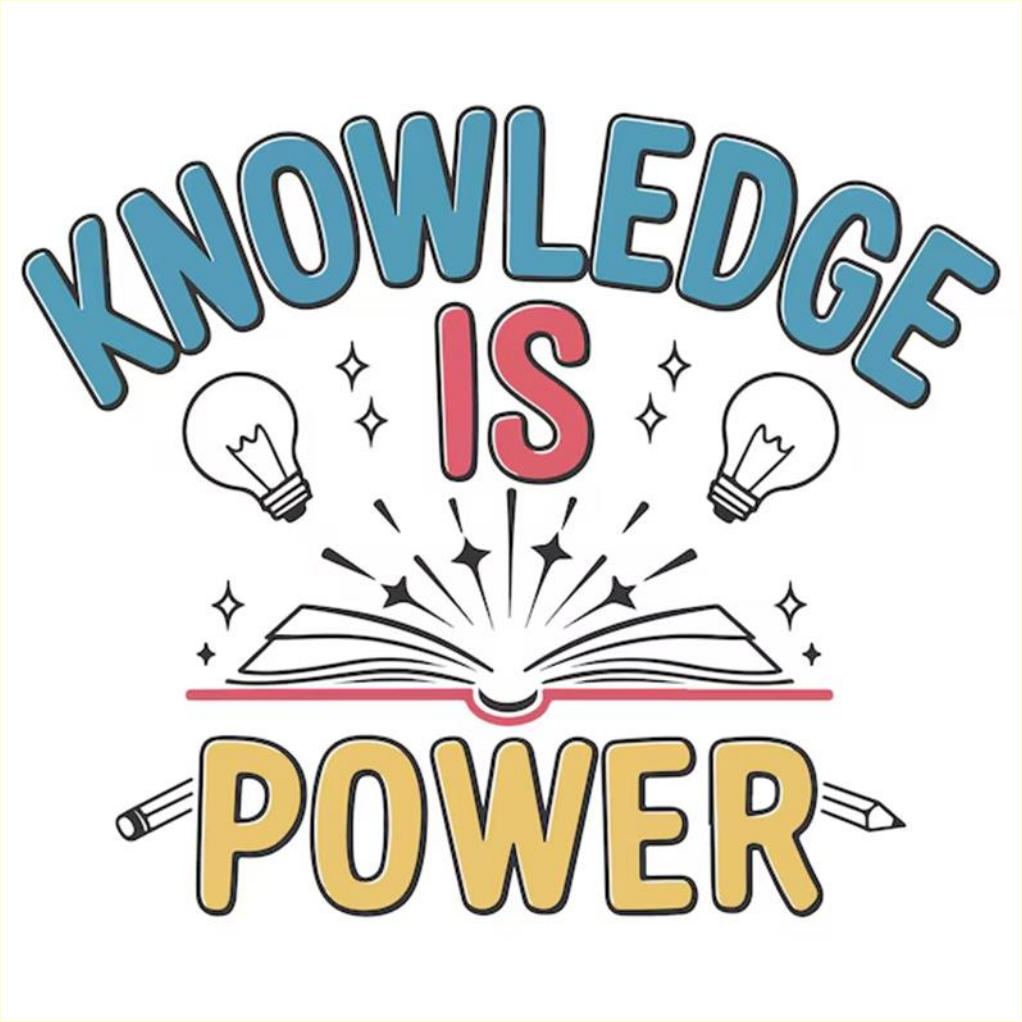
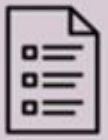
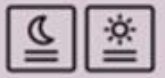
Open Academy Year 7 Knowledge Organiser

Summer Term 1



Contents Page

How to use you Knowledge Organiser: Step by step guide

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

Year 7 Art – Topic: One and Two-point Perspective

Vocabulary List:

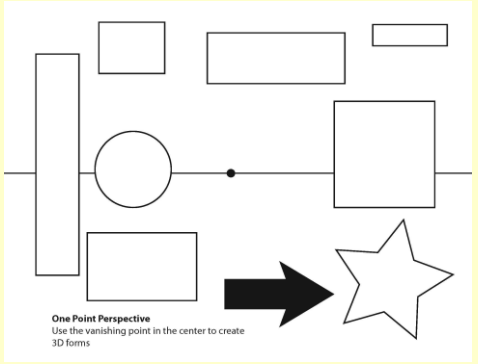
Perspective – A technique used to represent three-dimensional objects on a two-dimensional surface to create the illusion of depth and space.

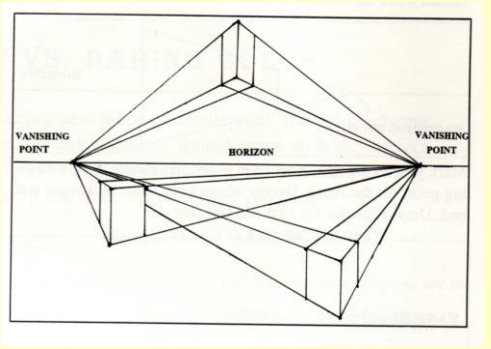
Horizon Line – A horizontal line across the picture; it represents the viewer's eye level and where the sky meets the ground.

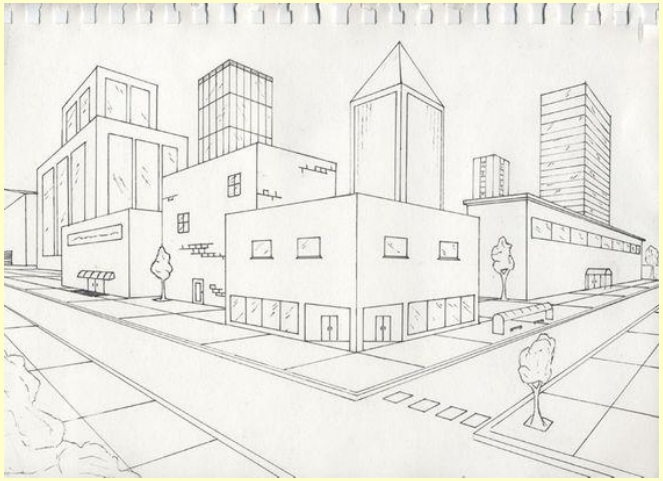
Vanishing Point – The point(s) on the horizon line where parallel lines appear to converge in perspective drawing.

One-Point Perspective – A drawing method that shows how things appear to get smaller as they get further away, converging towards a single vanishing point on the horizon line.

Two-Point Perspective – A more complex method that uses two vanishing points on the horizon line, typically used to draw corner views of objects like buildings.







Year 7 Drama: Topic 1 – Kneehigh Theatre Company

Kneehigh Theatre Company are **theatre practitioners** based in Cornwall, England.

They have been a theatre company for over 30 years.

Kneehigh's performances can be performed anywhere: Village halls, Big Tops, quarries, marquees etc.

They usually create their work from myths or storybooks and put their own unique twist using **puppets, music, gender reversal, song** and **multirole.**

Their performances have HIGH energy and can sometimes be considered a little silly. They definitely don't take themselves too seriously.

Multirole is where an actor plays more than one character.

A **theatre practitioner** is someone who produces theatre in a style that is unique to them.

Task: Have a look at the pictures above taken from Kneehigh's productions -

Describe what you think is happening.

What techniques that they use can you see in the pictures?

Key Vocabulary

Physical Theatre is a **genre** or style of theatre where physical movement is used to tell the story rather than dialogue.

Body as Props is where you use your body to create inanimate objects such as tables or chairs.

Narration is the telling the story, usually done by a narrator.

Direct address is talking directly to the audience.

Characterisation is how an actor shows a character to the audience.

Choral Speech is speaking as a group, either at the same time in unison or using canon to emphasise certain words or moments.

Exaggeration is making things seem larger than life.

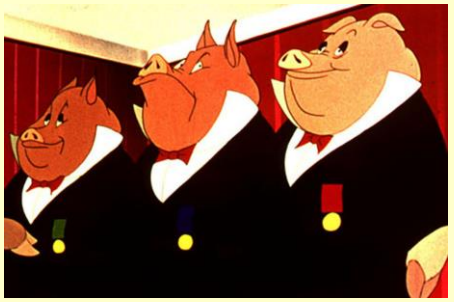
Year 7 English: Topic – Animal Farm

Summary

The first of our 'great novels' you'll study at Open Academy, Animal Farm tells the story of a group of animals who overthrow their owners and take charge of their lives. However, with power, the animals find themselves behaving more like the people they had previously despised than they imagined. A famous allegory, these animals' story parallels the communist regime of the early Soviet Union.

Why am I learning this?

Over the course of history, fiction and writing has been used to express our anger and opinions about the great political and social questions of our time. When we study texts like Animal Farm, we're encouraging you to be critical about the world around you, challenging unfairness and having the courage to stand up to authority for everyone's benefit.



Tasks:

1. To **clarify** the storyline, produce a storyboard tracking key events.
2. Read a chapter and **summarise** events..
3. **Predict** the next chapter.
4. What **questions** do you have for different characters?

Be ambitious:

This year we've introduced a number of critical theories. Consider how this text could be read through the lens of...

a) Psychoanalysis
b) Feminism
c) Marxism

Technical Vocabulary

Anthropomorphism – Giving human characteristics to animals.

Allegory – A story with a moral message behind it.

Context – Background information that helps us understand the text's meaning.

Imagery – Using sensory language and comparisons to create a vivid image.

Metaphor – Representing a thing through something else.

Rhetoric – Using art to be persuasive.

Use these in analysis to show awareness of the author's methods. Remember to explain their effects.

Ambitious Vocabulary

Cynical – Doubtful of people's behaviours or motives.

Corruption – The process of losing the purity of your morals.

Inequality – Difference of opportunity or resources.

Oppression – Keeping people under control through force.

Propaganda – Materials used to promote a particular belief.

Hierarchy – A structure that shows or suggests who holds power over others.

Satirical – Using humour to make a political point.

Try to use the ambitious vocabulary in your writing and analysis.

Year 7 Food Technology – Topic: Nutrition

Nutrients

Macro nutrients – Needed in large quantities in the diet

1. Protein
2. Fats
3. Carbohydrates

Micronutrients – needed in small quantities in the diet

1. Vitamins
2. Minerals

Protein

Food sources

Animal –beef, pork, lamb, poultry (chicken, turkey, duck), fish, cheese, butter milk

Plant – beans, chickpeas, lentils, peas, nuts, seeds, found in smaller amounts in some vegetables such as spinach and broccoli.

Function

Grown and repair of muscles and cells

Example exam questions

What is the function of sugary and starchy carbohydrates? (2 marks)

Why is protein especially important for children? (2 marks)

What are the functions of fat? (3 marks)

List 5 food sources of plant-based protein (5 marks)

What is the macro nutrient found in the following ingredients – butter, sugar, flour, egg? (4 marks)

Fat

There are two types of fat, saturated and non-saturated.

Saturated fats are classed as 'unhealthy fats', they are solid at room temperature and are generally animal based.

Unsaturated fats are classed as 'healthier fats' and are liquid or soft at room temperature and come from plant-based sources.

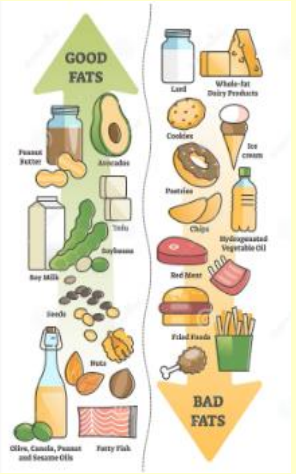
Function

Keeps us warm (provides insulation), secondary source of energy, protects vital organs and bones.

Food sources

Animal –beef, chicken skin, processed meat (sausages, salami, pepperoni), bacon, butter, cheese, full fat milk

Plant – vegetable oils (sunflower, olive, rapeseed), avocado, nuts, seeds



Carbohydrates

There are two types of carbohydrates, complex and simple. They are also known as starchy (complex) and sugary (simple).

Function

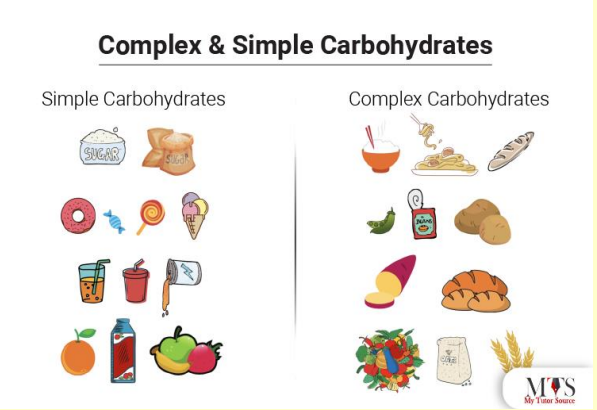
Starchy/complex carbohydrates are digested slowly and provide long term energy.

Sugary/simple carbohydrates are digested slowly and provide short term energy

Food sources

Starchy – bread, rice, pasta, potatoes, bagels, oats, flour, cereal and some vegetables.

Simple – fruit, some vegetables, sugar, honey, syrup, sweets, fizzy drinks



Key Vocabulary

Macro nutrients
Micronutrients
Protein
Fats
Carbohydrates
Vitamins
Minerals
Function
Sources
Types
Saturated
Unsaturated
Plant based
Animal Based

Year 7 Geography – Topic: Industry

What is Industry?

This is a human geography topic that focuses on work activities.
There are 4 main sectors of industry that people work within, these are:

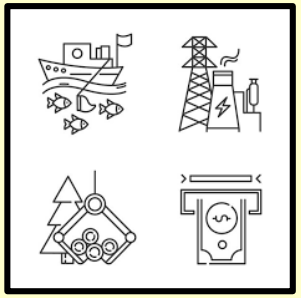
- The Primary Sector
- The Secondary Sector
- The Tertiary Sector
- The Quaternary Sector

Primary Sector Activities

This sector is only interested in the extraction of raw materials. This means taking, collecting or removing natural items from the landscape.

Examples are fishing, farming, mining or quarrying and forestry work.

These activities can have negative impacts upon the environment, often changing the look of a landscape or removing things from an ecosystem.



Secondary Sector Activities
This sector of Industry involves the making, changing, assembling and processing of raw materials, components or ingredients into finished products.

Industrialisation
During the Victorian Times Britain experienced an Industrial Revolution whereby factories grew in number and exported products around the world. These included ships, cars, trains, machinery, equipment, weapons, furniture etc.

De-Industrialisation
Today many of our products are made in Asian countries where costs are low. Britain has lost much of its Secondary sector and today specialises mainly in smaller 'niche' high-tech or precision engineered products.

Local Industry
Norwich once produced shoes, books, mustard, textiles and luxury cars.

Location of Industry
Factory locations rely upon certain factors for success, these include:

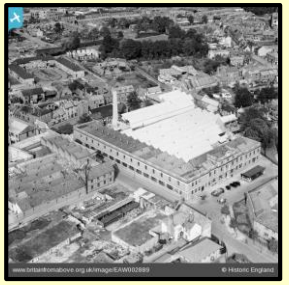
- Flat land for expansion
- Good road/rail links for transporting goods and raw materials
- A nearby supply of Labour (workers)
- Power/energy supplies
- Rapid Communications/Internet
- Nearby suppliers

Tertiary Sector

This sector provides services both within and between all of the different types of industries.

Examples of services provided could include security, finance, insurance or transport.

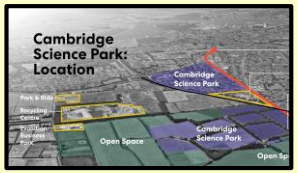
There are a vast array of jobs from care workers to bankers in this sector and most jobs are here.



Quaternary Sector
This sector is concerned with high-tech research and development. Norwich has a University and Hospital research park where crop science, genetic engineering and climate research are undertaken. Workers tend to be highly educated.

Key Vocabulary

Primary
Secondary
Tertiary
Quaternary
Raw Materials
Resource extraction
Quarrying
Production
Assembly Line
Manufacturing
Inputs
Processes
Outputs
Industrialisation
De-Industrialisation
Industry factors
Financial Services
Care sector
Education
Research Park
Science Park



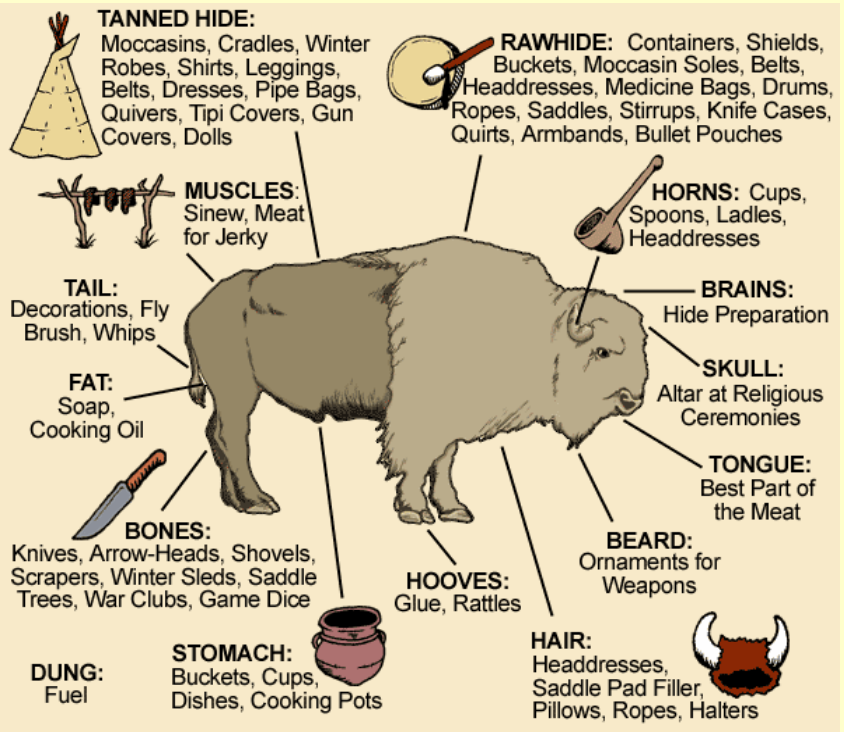
Year 7 History - Topic: Native Americans

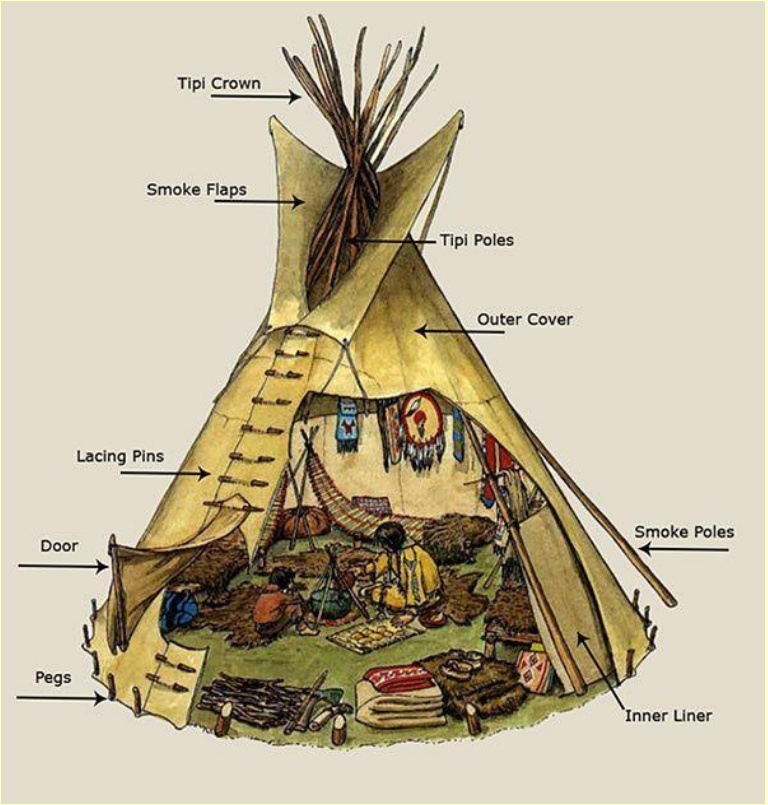
Native Americans

Before white settlers arrived in North America it was known as 'Turtle Island' and was inhabited by millions of people organised into hundreds of different tribes. Each tribe had their own way of life, including different diets, spiritual beliefs, languages and customs.

Some of the largest tribes were the Sioux, Navajo, Cherokee, Apache and Iroquois. Although up to 90% of the population were killed by white settlers, most tribes still remain today. However most of their original territory was taken from them and some now live in different regions to their ancestors.

Some tribes lived on the Great Plains (see key words above). These tribes mostly lived nomadically and hunted the Buffalo, of which they used the entire body. For example, they lived in Tipis, a type of tent build from Buffalo hide. Plains tribes also frequently raided each other, and the white settlers once they arrived. It was the Plains tribes who were some of the last to be defeated by the US military around the year 1900. On the right is a diagram showing the many different uses of the Buffalo.





Key Vocabulary

Buffalo – Large mammal living in North America. A source of food, clothing, shelter and many others.
Nomadic – A way of life, travelling around with no permanent place to live.
The Great Plains – The middle of the USA, an area covered mainly in grass and home to the Buffalo and many Native American tribes.
Tribe – A group of Native Americans made up of multiple family groups.
Tipi – What many Native Americans live in. Made of Buffalo hide. Similar to a tent.

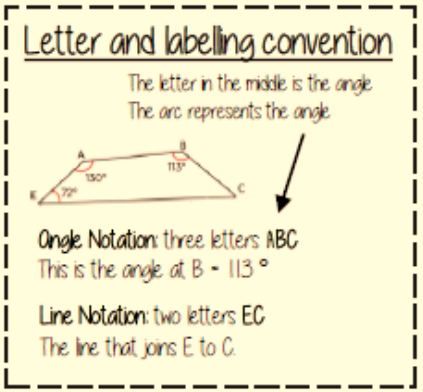
Year 7 Unit 11 –Constructing and Measuring

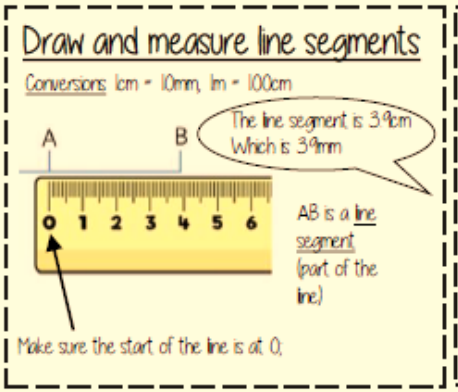
What do I need to be able to do?

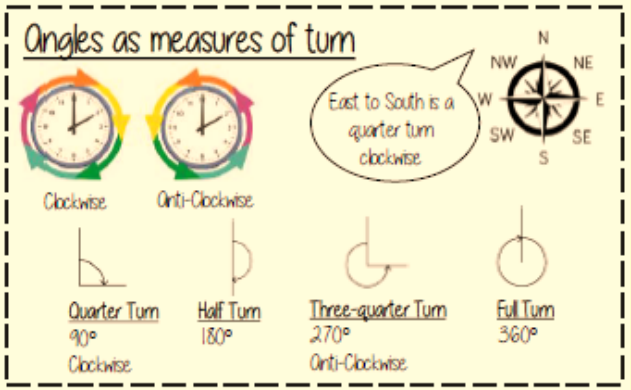
- Use letter and labelling conventions
- Draw and measure line segments
- Identify parallel and perpendicular lines
- Recognise types of triangle
- Recognise types of quadrilateral
- Identify polygons
- Constructing triangles
- Draw Pie Charts

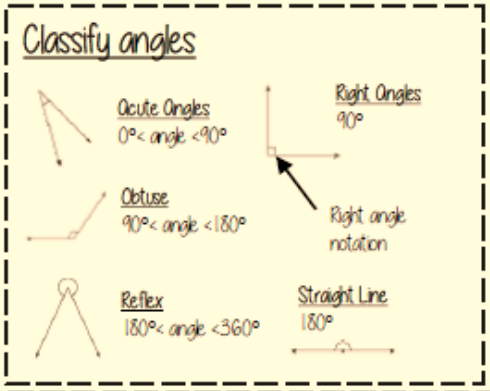
Vocabulary

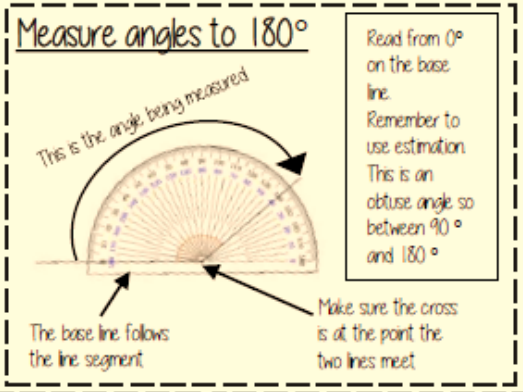
Compass: equipment used to draw arc and circles
Equilateral Triangle: a triangle with 3 equal sides and 3 equal angles.
Frequency: the number of times a data value occurs
Isosceles Triangle: a triangle with two lengths and two angles the same
Polygon: a 2D shape made with straight lines
Protractor: equipment used to measure the size of an angle.
Radius: the distance from the edge of the circle to the middle.
Right-angled triangle: a triangle with a 90 degree angle
Rotation: to turn in a given direction
Scalene Triangle: a triangle with all different sides lengths and angles
Sector: a part of a circle made by two radii touching the centre

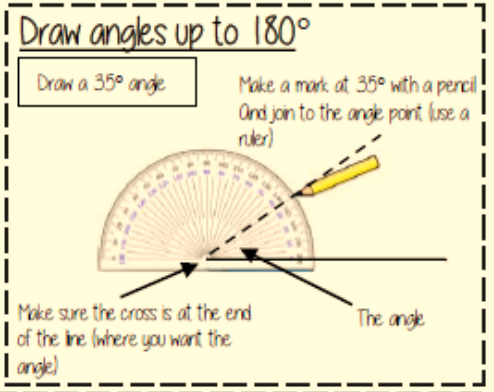












Classifying Angles

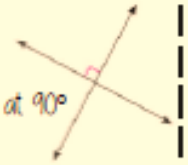
Measuring Angles

Drawing Angles

Parallel and Perpendicular lines

Parallel lines
Straight lines that never meet
(Have the same gradient)

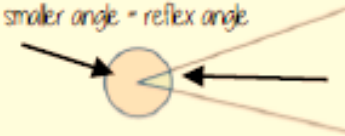
Perpendicular lines
Straight lines that meet at 90°



Angles over 180°

Use your knowledge of straight lines
180° and angles around a point
360°

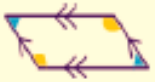
360° - smaller angle = reflex angle



Measure the smaller angle first (less than 180°

Properties of Quadrilaterals

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



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

Rectangle
All angles 90°
Opposite sides are parallel

Trapezium
One pair of parallel lines

Rhombus
All sides equal size
Opposite angles are equal

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

Draw Pie Charts

Type of pet	Dog	Cat	Hamster
Frequency	32	25	3

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

This fraction of the 360 degrees represents dogs

$\frac{32}{60} \times 360 = 192°$

Use a protractor to draw
This is 192°

SAS, SSS, ASA constructions

Side, Angle, Angle

Side, Angle, Side

Side, Side, Side

Polygons

3	- Triangle	5	- Pentagon	8	- Octagon
4	- Quadrilateral	6	- Hexagon	9	- Nonagon
		7	- Heptagon	10	- Decagon

If all the sides and angles are the same, it is a *regular* polygon

Parallel Lines

Perpendicular Lines

Drawing Pie Charts

Quadrilaterals

Polygons

Constructing Triangles

A job that relies on geometry:

An Architect

Architects design buildings and other structures.
Buildings must be not only attractive, but also safe and functional. Architects may be involved in all phases of development, from the first discussion with the client through to construction. Architects sometimes specialize in the design of one type of building, such as hospitals or homes.

Year 7 Unit 12 – Angles

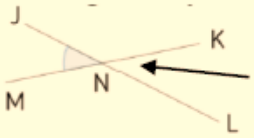
What do I need to be able to do?

- Understand and use angles around a point.
- Understand and use angles on a straight line.
- Understand and use vertically opposite angles
- Know and apply the sum of angles in a triangle.
- Know and apply the sum of angles in a quadrilateral
- Angles in Parallel Lines

Vocabulary

Acute Angle: an angle less than 90 degrees
Equilateral Triangle: a triangle with 3 equal side lengths and 3 equal angles.
Interior Angles: angles inside a shape
Isosceles Triangle: a triangle with 2 equal lengths and 2 equal angles
Polygon: a 2D shape made up of straight lines.
Obtuse Angle: an angle more than 90 degree but less than 180 degrees.
Quadrilateral: a four sided shape
Reflex Angle: an angle more than 180 degrees
Scalene Triangle: a triangle with 3 different lengths and 3 different angles
Sum: total of a set of values
Vertically Opposite: angles formed when two or more straight lines cross at a point.

Vertically opposite angles

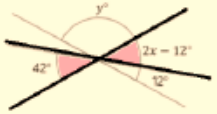


Angle JNM is vertically opposite to angle KNL

JNM = KNL

Vertically opposite angles are the same

Other angle rules still apply
Look for straight line sums and angles around a point.



Form equations with information from diagrams:

$2x - 12 = 42$
$2x = 54$
$x = 27°$

Sum of angles in triangles

Sum of interior angles in a triangle = 180°

The two base angles will be the same size

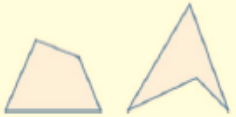
Look at triangle notation
This indicates an isosceles triangle
∴ 180 − 43 = 137
137 ÷ 2 = 68.5°

A triangle can only have ONE right angle

Have a go!
Tearing the corners from triangles forms a straight line which is therefore 180°

Sum of angles in quadrilaterals

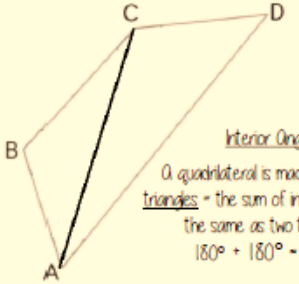
Sum of interior angles in a quadrilateral = 360°



Convex Quadrilateral

Concave Quadrilateral

Interior angles are those that make up the perimeter (outline) of the shape



Interior Angles

A quadrilateral is made up of two triangles - the sum of interior angles is the same as two triangles:
180° + 180° = 360°

Sum of Angles in Triangles

Sum of Angles in Quadrilaterals

Sum of angles at a point

The sum of angles around a point is 360°

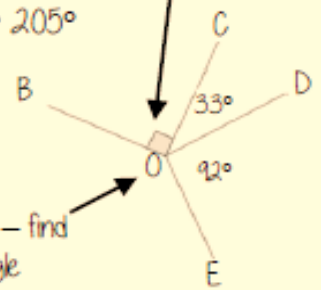
Find angle BOE

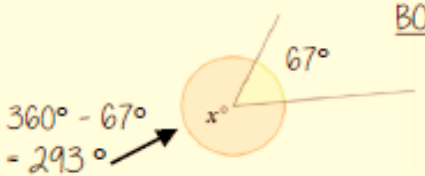
90° + 33° + 92° = 205°

360° − 205°

BOE = 155°

Angle notation — 90°



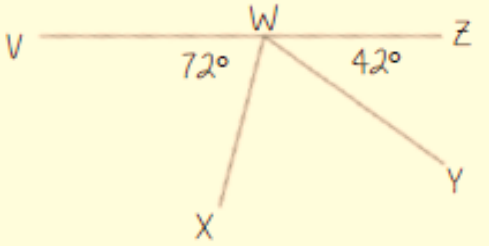


360° − 67° = 293°

Angle notation — find this missing angle

Sum of angles on a straight line

Adjacent angles that share a common point on a line add up to 180°



Find angle XWY

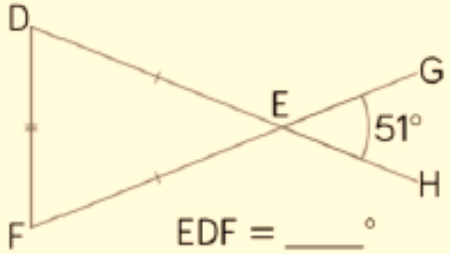
72° + 42° = 114°

180° − 114° = 66°

Angle Problems

Split up the problem into chunks and explain your reasoning at each point using angle notation

Keep working out clear and notes together



1. Angle DEF = 51° because it is a vertically opposite angle DEF = GEH
2. Triangle DEF is isosceles (triangle notation) ∴ EDF = EFD and the sum of interior angles is 180°
   180° − 51° = 129° 129° ÷ 2 = 64.5°
3. Angle EDF = 64.5°

Angle Problems

A job that relies on geometry:

A Carpenter

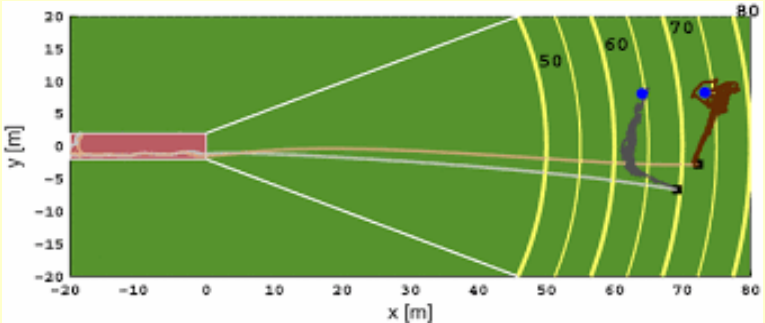
Carpenters work with timber depending on the role and experience. They create window frames, doors and floorboards. They also install shelves, cupboards, countertops and assemble fitted or free-standing furniture. Carpenters install roofing timber, staircases, door frames and they erect wooden supports to hold the setting concrete in place during home construction. They often work on tasks such as creating and fitting interiors in public offices and business premises.

Year 7 Physical Education -Topic: Athletics

Running, Sprinting – 100m
•Explosive **start** from crouch position
•Drive phase – lean forward for first 20m, pumping arms and legs fast.
•Upright running – high knees, relaxed shoulders.
•Strong finish – dip at the line.
Rules
False starts result in disqualification.
Must stay in own lane.

Running, Distance -800m
This is 2 laps of a normal 400m running track
•Pace yourself – don't sprint at the start.
•Last 200m: Increase speed, sprint finish.
Rules
•Can break into inside lane after 100m.
•Interference with other runners results in disqualification

Javelin throwing area



Jumping – Long Jump
Run-up – sprint.
Take-off – one-footed jump from the board.
Flight – drive knees up, keep body balanced.
And fall forwards
Rules:
Must take off from the take off board and not go over the board
Furthest point back on landing is measured.

Throwing – Javelin
•Grip: Hold javelin at grip point, fingers under.
•Throw: Strong push from back leg, release at 45°
Rules
•Must throw within the marked sector.
•Javelin tip must hit ground first.

Throwing -Shot Put
•Grip: Shot rests at base of fingers, not palm.
•Stance: Start in low position, weight on back leg.
•Push, not throw! – Extend arm, drive forward.
Rules:
•Must stay inside the circle.
•Shot must land in sector.

Key Vocabulary
Sprinting
Speed –The time taken to cover a set distance
Reaction time – the time take for an athlete to respond to a stimulus and initiate a response
Distance Running
Pacing –running at a speed to allow you to complete the race. Ina distance event you don't want to start too fast
Aerobic endurance – the ability of the cardio respiratory system to provide oxygen to the working muscles
Long Jump
Shot
Javelin
Power – a combination of speed and strength

Year 7 Physical Education – Topic: Cricket

Basic Rules
- **Teams**: 11 players per team.
- **Overs**: Each over consists of 6 balls.
- **Batting**: Two batters are on the pitch at a time, aiming to score runs.
- **Bowling**: Bowlers deliver the ball with a straight arm action.
- **Fielding**: Players try to prevent runs and take wickets.

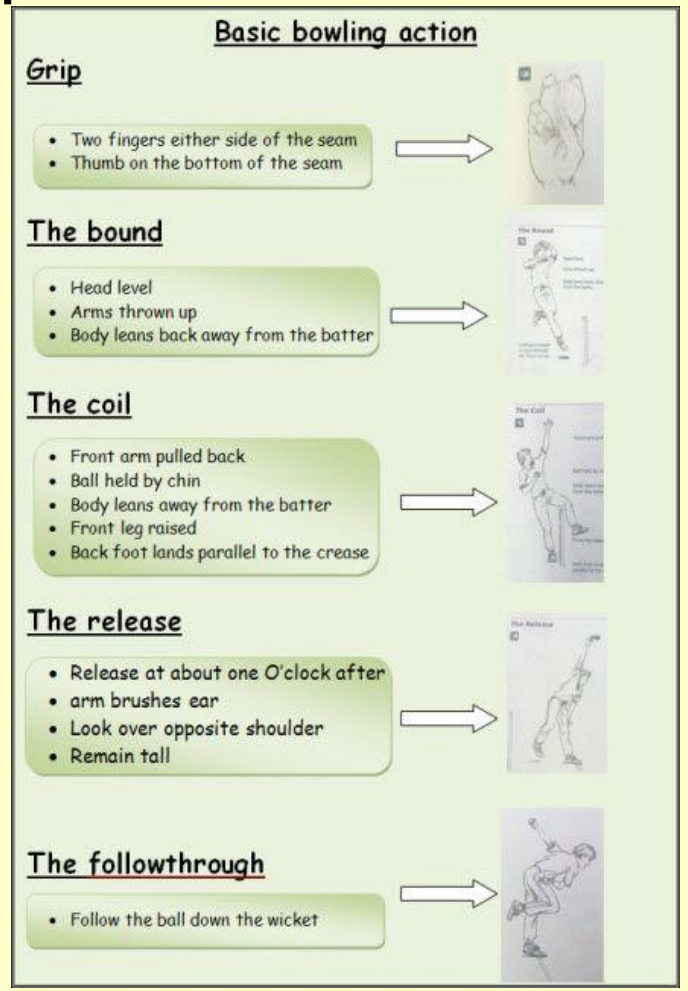
Rules of The Game

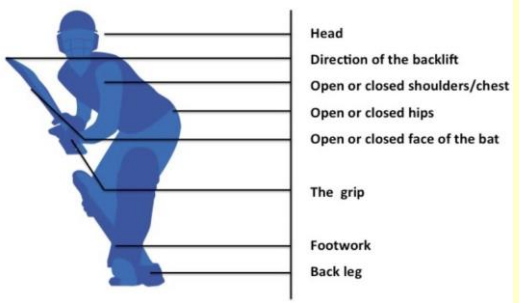
Ways to Get Out
- **Bowled** – Ball hits the stumps.
- **Caught** – Ball is hit in the air and caught before bouncing.
- **LBW (Leg Before Wicket)** – Ball would hit the stumps but is blocked by the batter's leg.
- **Run Out** – Batter is outside the crease when the stumps are hit.
- **Stumped** – Wicketkeeper removes bails while batter is out of their crease.

Scoring Runs
- **Single, Two, Three** – Running between the wickets.
- **Four** – Ball reaches boundary after bouncing.
- **Six** – Ball crosses boundary without bouncing.

Batting Skills
- **Grip**: Hands together, "V" shape pointing towards the off-side.
- **Stance**: Feet shoulder-width apart, knees slightly bent.
- **Shots**:
- **Defensive shot** – Blocks the ball.
- **Drive** – Front foot shot along the ground.
- **Pull/Cut** – Back foot shots for short-pitched deliveries.

Key Terms
- **Crease** – Lines marking where the batter stands.
- **Innings** – Each team's turn to bat.
- **All-rounder** – A player good at batting and bowling.
- **Umpire** – Official who enforces rules.
- **Boundary** – Perimetre of playing area

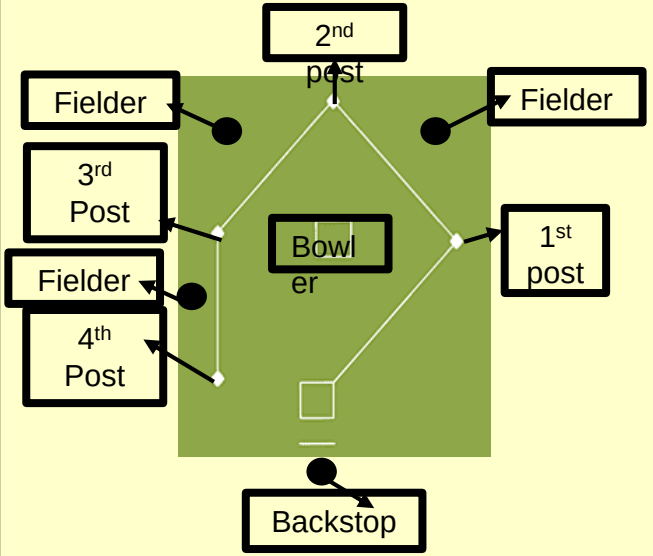


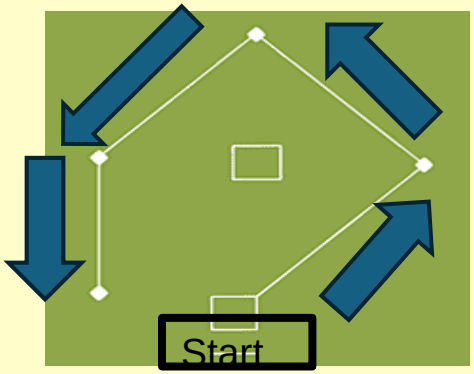


Year 7 Physical Education – Topic: Rounders

What is Rounders?

- Rounders is a bat and ball game played between two teams.
- It involves batting (hitting the ball with a bat) and running around a circuit of bases to score points.
- Opponents use fielding to prevent the batter running around the circuit. Fielding involves catching, tracking and stopping the ball and throwing it to others to stomp the runner out.
- When fielding, it is important to work as a team and have good communication skills.
- In rounders, there are 9 players on a team.





In rounders, the batter starts in the batter box. Once the bowler has bowled the ball, they must run in an anti- clockwise direction until they make it to 4th post.

Key Vocabulary:

Bowler
Backstop
Fielder
Rounders
Posts

Rounders position:	What is their role?
Bowler	Stand with one-foot infront of the other. Step forward with the opposite foot to throwing up to stay balanced. Use your non throwing arm to point in the direction that you want the ball to go. The bowler should bowl the ball underarm. Point fingers at target as you release.
Backstop	In rounders, a backstop is the person who stands behind the batter. Their job is to catch any balls that are missed or that get past the batter. This helps to make sure the ball doesn't roll too far away, so the game can keep going without losing the ball. The backstop also tries to stop the batter from running to the next post by getting the ball back to the players quickly.
Fielders	In rounders, fielders are players who stand in different positions around the field to stop the batter from running to the posts. They try to catch the ball or get it to the posts quickly to get the batter out.

Summer 1

Year 7 Science: Topic: Energy

Key Vocabulary:
Energy store
Energy transfer
Radiation
Waves
Convection
Conduction
Mechanical
Kinetic
Gravitational
Elastic

Key Question:
Give an example of different scenarios with these different energy stores.
Chemical
Kinetic
Gravitaional

Key points:
Energy cannot be created or destroyed it can only be transferred from one store to another.
Clever, Kids, Enjoy, Getting Taught. Is a simple rhyme to remember some of the energy stores.

Key points:
We can measure the chemical store of food by burning them. However, we need to be able to control a lot of variables to ensure it is a fair test.

Key Vocabulary:
Efficiency
Chemical
Independent
Dependent
Control
Hypothesis
Reliability

Key Question:
If 50J of energy is released but only 15J is useful.
What is the efficiency of this transfer?
Where does this wasted energy go?

Year 7 Spanish – Topic: **¿Qué hay en tu ciudad?**

¿Qué hay en tu ciudad?	***What is there in your town?***
Hay…	There is…
un castillo	*castle*
un centro comercial	shopping centre
un estadio	a stadium
un mercado	a market
un museo	a museum
un parque	a park
una piscina	a swimming pool
una plaza	a square
un polideportivo	a sports centre
un restaurante	a restaurant
una tienda	a shop
una universidad	*a university*

En…	*In…*
mi barrio	*my neighbourhood*
mi ciudad	*my town, my city*
mi pueblo	*my village, my town*
No hay museo.	*There isn't a museum.*
No hay nada.	*There's nothing.*
unos museos	*some museums*
unas tiendas	*some shops*
muchos museos	*a lot of museums*
muchas tiendas	*a lot of shops*

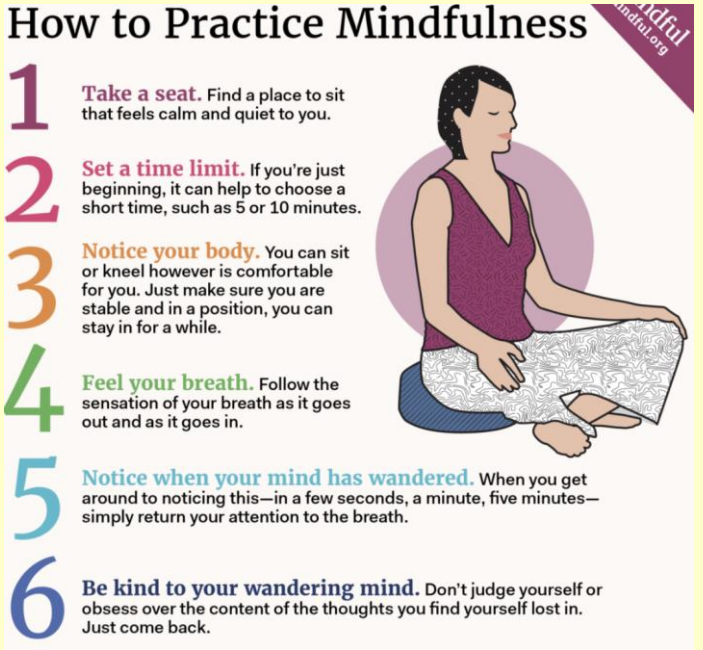
¿Qué haces en la ciudad?	***What do you do in town?***
Salgo con mis amigos.	I go out with my friends.
Voy…	I go…
al cine	to the cinema
al parque	to the park
a la bolera	to the bowling alley
a la cafetería	to the café
a la playa	to the beach
de compras	*shopping*
de paseo	*for a walk*
No hago nada.	*I do nothing.*

¿Qué hora es?	***What time is it?***
Es la una.	It's one o'clock.
Son las dos.	It's two o'clock.
Es la una y cinco.	It's five past one.
Son las dos y diez.	It's ten past two.
Son las tres y cuarto.	It's quarter past three.
Son las cuatro y veinte.	It's twenty past four.
Son las cinco y veinticinco.	*It's twenty-five past five.*
Son las seis y media.	*It's half past six.*
Son las siete menos veinticinco.	*It's twenty-five to seven.*
Son las ocho menos veinte.	*It's twenty to eight.*
Son las nueve menos cuarto.	*It's quarter to nine.*

Son las diez menos diez.	*It's ten to ten.*
Son las once menos cinco.	*It's five to eleven.*
Son las doce.	*It's twelve o'clock.*
¿A qué hora?	*At what time?*
a la una	*at one o'clock*
a las dos	*at two o'clock*

Year 7 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…

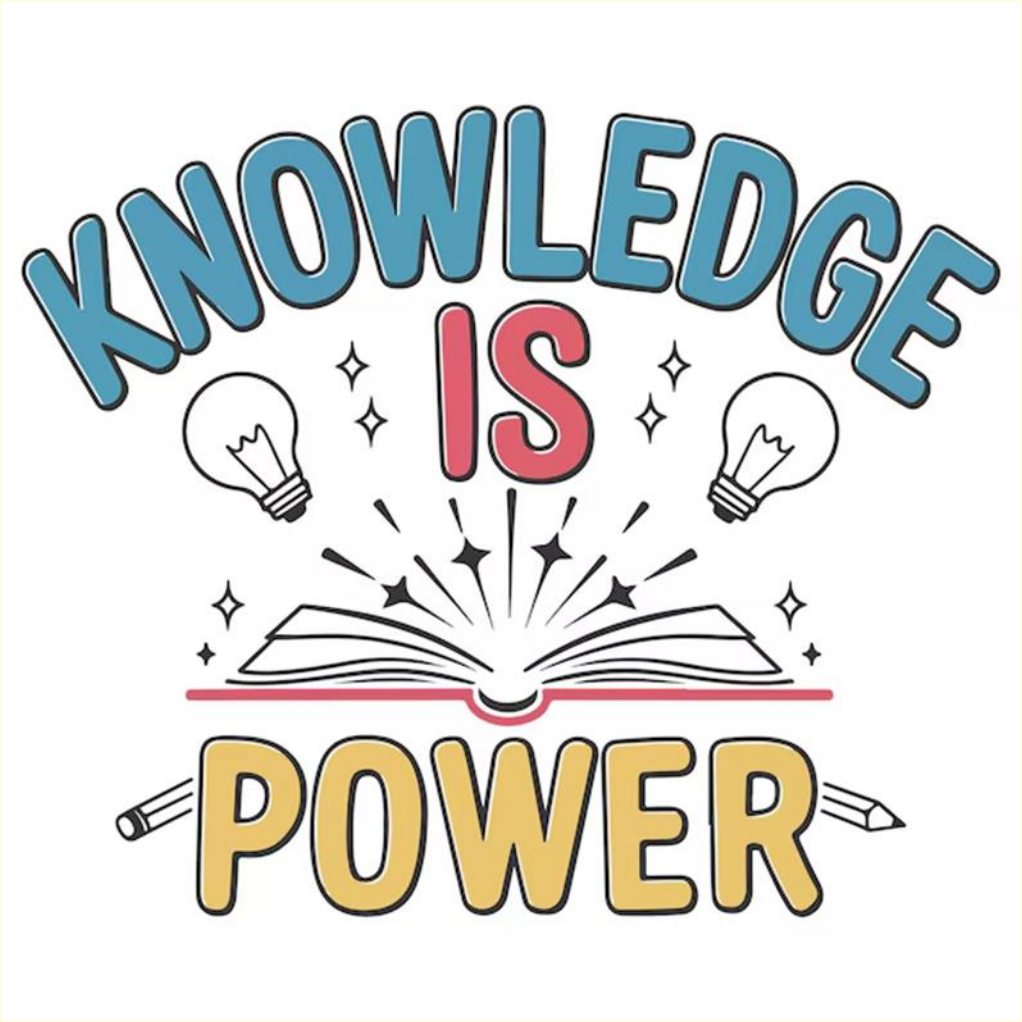


I know it seems way too simple! But this is an ancient practice with traditions in all major religions – including Islam and Christianity!
I know that it will seem odd at first. That is your worrying mind trying to stop you taking control over it!
But stick with it – it will help! Regularly practicing 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.fyinorfolk.nhs.uk/ - it costs nothing to sign up and get help!

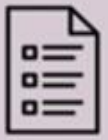
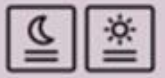
Open Academy Year 7 Knowledge Organiser

Summer Term 2



Contents Page

How to use you Knowledge Organiser: Step by step guide

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

Year 7 Art – Topic: One and Two-point Perspective

Vocabulary List:

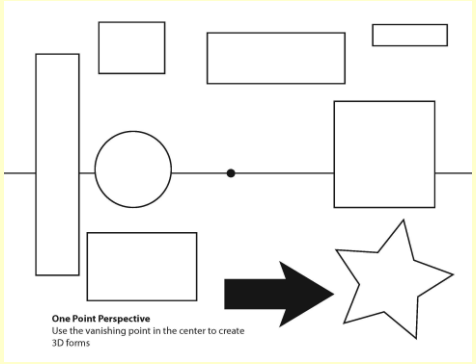
Perspective – A technique used to represent three-dimensional objects on a two-dimensional surface to create the illusion of depth and space.

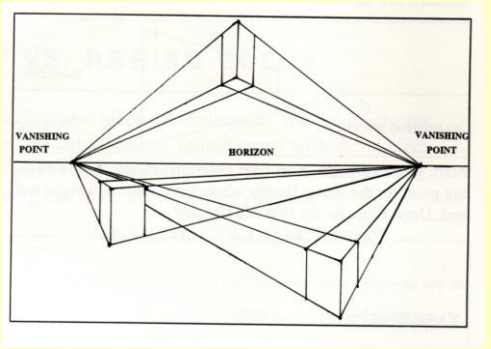
Horizon Line – A horizontal line across the picture; it represents the viewer's eye level and where the sky meets the ground.

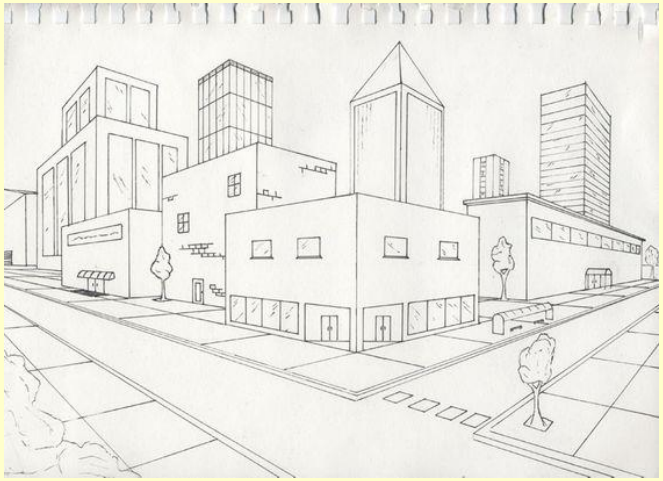
Vanishing Point – The point(s) on the horizon line where parallel lines appear to converge in perspective drawing.

One-Point Perspective – A drawing method that shows how things appear to get smaller as they get further away, converging towards a single vanishing point on the horizon line.

Two-Point Perspective – A more complex method that uses two vanishing points on the horizon line, typically used to draw corner views of objects like buildings.







Year 7 Drama: Topic 2 – Kneehigh Theatre Company

Kneehigh Theatre Company are **theatre practitioners** based in Cornwall, England.

They have been a theatre company for over 30 years.

Kneehigh's performances can be performed anywhere: Village halls, Big Tops, quarries, marquees etc.

They usually create their work from myths or storybooks and put their own unique twist using **puppets, music, gender reversal, song** and **multirole.**

Their performances have HIGH energy and can sometimes be considered a little silly. They definitely don't take themselves too seriously.

Multirole is where an actor plays more than one character.

A **theatre practitioner** is someone who produces theatre in a style that is unique to them.

Task: Have a look at the pictures above taken from Kneehigh's productions -

Describe what you think is happening.

What techniques that they use can you see in the pictures?

Key Vocabulary

Physical Theatre is a **genre** or style of theatre where physical movement is used to tell the story rather than dialogue.

Body as Props is where you use your body to create inanimate objects such as tables or chairs.

Narration is the telling the story, usually done by a narrator.

Direct address is talking directly to the audience.

Characterisation is how an actor shows a character to the audience.

Choral Speech is speaking as a group, either at the same time in unison or using canon to emphasise certain words or moments.

Exaggeration is making things seem larger than life.

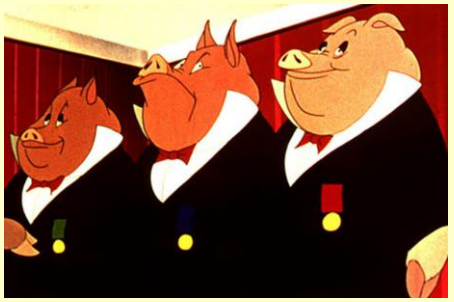
Year 7 English: Topic – Animal Farm

Summary

The first of our 'great novels' you'll study at Open Academy, Animal Farm tells the story of a group of animals who overthrow their owners and take charge of their lives. However, with power, the animals find themselves behaving more like the people they had previously despised than they imagined. A famous allegory, these animals' story parallels the communist regime of the early Soviet Union.

Why am I learning this?

Over the course of history, fiction and writing has been used to express our anger and opinions about the great political and social questions of our time. When we study texts like Animal Farm, we're encouraging you to be critical about the world around you, challenging unfairness and having the courage to stand up to authority for everyone's benefit.



Tasks:

1. To **clarify** the storyline, produce a storyboard tracking key events.
2. Read a chapter and **summarise** events..
3. **Predict** the next chapter.
4. What **questions** do you have for different characters?

Be ambitious:

This year we've introduced a number of critical theories. Consider how this text could be read through the lens of...

a) Psychoanalysis
b) Feminism
c) Marxism

Technical Vocabulary

Anthropomorphism – Giving human characteristics to animals.

Allegory – A story with a moral message behind it.

Context – Background information that helps us understand the text's meaning.

Imagery – Using sensory language and comparisons to create a vivid image.

Metaphor – Representing a thing through something else.

Rhetoric – Using art to be persuasive.

Use these in analysis to show awareness of the author's methods. Remember to explain their effects.

Ambitious Vocabulary

Cynical – Doubtful of people's behaviours or motives.

Corruption – The process of losing the purity of your morals.

Inequality – Difference of opportunity or resources.

Oppression – Keeping people under control through force.

Propaganda – Materials used to promote a particular belief.

Hierarchy – A structure that shows or suggests who holds power over others.

Satirical – Using humour to make a political point.

Try to use the ambitious vocabulary in your writing and analysis.

Year 7 English: Topic – Horror

Summary

To finish off our first year at Open we explore a classic storytelling genre, Horror. Reading a series of short stories and practicing our own creative skills we consider how language and structure can be used to shock and scare the reader.

Why am I learning this?

Along with our poetry course, this topic give us the chance to practice and develop our own creative writing skills, specifically how we can use language and structure to create specific effects.

Most of all however, it's our chance to read through a genre that has captivated audiences and readers for generations. Maybe prepare your best ghost/horror stories ready to share on Year 7 camp.

Tasks:

1. **Re-read** a story. Do you notice anything the second time that helped solve the mystery?
2. Read a story and **summarise** events..
3. What **questions** do you have for different characters?
4. Re-write the story from a different perspective.

Be ambitious:

This year we've introduced a number of critical theories. Consider how the characters could be read through the lens of...

a) Psychoanalysis
b) Feminism
c) Marxism

Technical Vocabulary

Anthropomorphism – Giving human characteristics to animals.

Context – Background information that helps us understand the text's meaning.

Plot twist – A surprising or unexpected change of direction in the plot, used to create an ending we didn't see.

Pathetic Fallacy – Giving human feelings to non-living things.

Sibilance – Alliteration of 's' sounds. Used to create either a smooth sound or a harsh one.

Use these in analysis to show awareness of the author's methods. Remember to explain their effects.

Ambitious Vocabulary

Chilling – Creaitng an upsetting or nervous feeling.

Eerie – Creating an unnerving or tense feeling.

Grotesque – Particularly gross or disgusting. Unnatural.

Ominous – Feeling of danger or obvious threat.

Ghastly – Horrifying, particularly relating to ghosts or supernatural.

Sinister – Serious or severe. Giving the impression of harm.

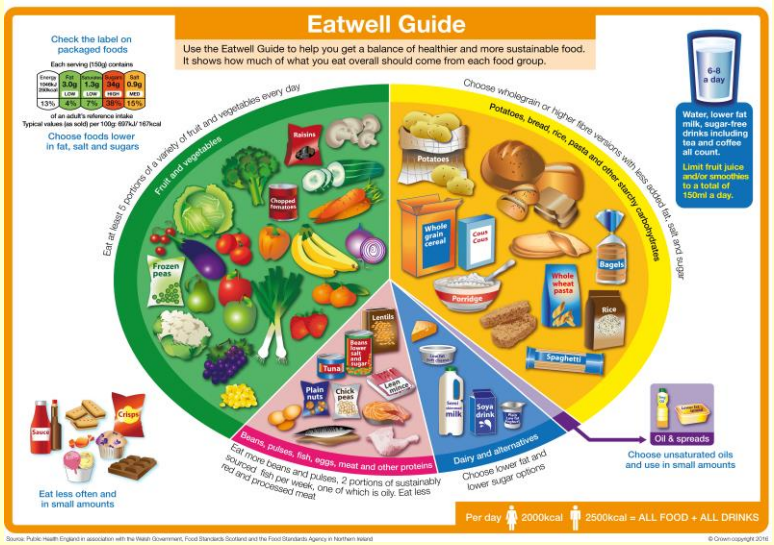
Supernatural – Unexplained events such as ghosts and vampires.

Try to use the ambitious vocabulary in your writing and analysis.

Year 7 Food Technology – Topic: 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.



Tips on making healthy choices from the eatwell guide:

Fruit and vegetables: eat 5 portions of fruit and vegetables a day, this should make up 1/3 of your plate a day, fresh, canned dried and fruit juice/smoothies all count, don't exceed 150ml of fruit juice/smoothie a day as it can cause tooth decay, try snacking on fruit over high sugar and fat foods,

Potatoes, bread, rice, pasta and other starchy carbohydrates: choose non-sugary cereals, leave the skin on potatoes, 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, use in small amounts.

Dairy and alternatives: choose lower fat options such as skimmed milk and low fat and salt cheese, choose low sugar yogurts and add fruit as a natural sweetener.

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, cut the visible fat off meat, choose lower fat meat options, eat 2 portions of fish a week.

Water: drink 2-3 litres of water a day, choose lower sugar option drinks.

Key Vocabulary

Balanced
Carbohydrates
Eatwell guide
Fat
Healthy Eating
Oils and spreads
Proportions
Protein
Saturated fat
Unsaturated fat

Example exam questions

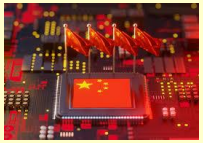
Why is it important to have a diet based on the Eatwell guide?
Why are sweets, chocolate and crisps not included in the guide?
Why should we base our meals on starchy carbohydrates?
Why is it important to eat 5 portions of fruit and vegetables a day?
List 3 different sources of unsaturated fat.
Explain why is it recommended to use margarine instead of oil.

Year 7 Geography – Topic: Asia

What is Asia?
Asia is the largest continent on Earth. It includes the largest population and the largest and fourth largest countries by areas of Rusia and China.

Asia's physical features
Asia is defined by the regions East of the 'Ural' mountains, south of the 'Caucasus' mountains, East of Africa and North of Australia.

China
China is a traditional centre of learning and civilisation.
China is the 2nd largest country by population and by area in Asia but arguably the most important. It has a number of large cities and a growing economy that trades with the rest of the world. Despite its large population, children are a small proportion of the total population and people are living longer. It has vast areas of wilderness with deserts, mountains and rainforests. China is a rapidly developing country, this means it is advancing with technology but also needs vast amounts of energy which can also damage the environment.



Location of Industry
Factory locations rely upon certain factors for success, these include:
- Flat land for expansion

Japan
After its defeat in WW2 Japan adopted economic growth and rapidly recovered to become a major economy in the world specialising in electronics and engineering. Japan is also a highly traditional country with an ordered society based upon rules, respect and hard work. Japan famously straddles earthquake zones and volcanoes like Mt. Fuji. The largest city on Earth, Tokyo at 32 million people, ¼ of Japan's 124m people. Its population is however falling due to low birth rates, and it has the longest life expectancy on Earth (82 years).

India
India is the largest population in Asia at 1.25billion people. It is also a rapidly changing and developing country. India trades with the East (China, Russia etc) and the West (USA/EU etc). Famously it is home to elephants and tigers in its 'jungle' rainforests.

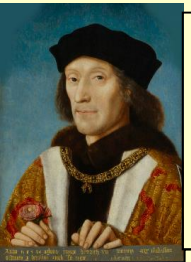
Indonesia
Indonesia is a rapidly growing population of 240 million people. It is also home to large areas of threatened tropical rainforest and home to animals like the Orangutan.

The Middle East
The middle east includes the ancient holy lands of 3 of the worlds major religions. It is a beautiful land of incredible peoples but has sadly been subjected to wars and conflicts. It could be a center for solar power as well as oil and gas. Middle Eastern cultures are ancient and once were the 'cradle' of peaceful civilisation.

Key Vocabulary

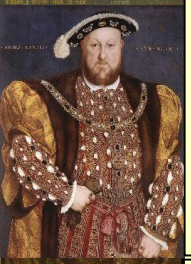
Colonialism
Imperialism
Communism
Zionism
Arab-Israeli conflict
Kashmir dispute
Korean peninsula
Siberia
Himalayas
Gobi Desert
Yangtze River
Ganges River
Pacific Plate
Collision margin
Urbanisation
Economic growth
'Tiger' economies
Sweatshops
Fossil Fuels

Year 7 History Topic - The Tudors



Henry VII, reigned 1485-1509

Henry VII took the throne by defeating the previous King, Richard III. Henry made efforts to control the barons in England. He taxed them heavily and punished them harshly for disobeying him.



Henry VIII, reigned 1509-1547

Determined to have a son of his own, Henry married six different women and had three surviving children. In the 1530s Henry claimed to have become a Protestant and changed the religion of England to Protestant with himself as head of the Church.

Edward VI, reigned 1547-1553

Henry VIII's only son and just nine years old when he was crowned King and dead by the age of 15, Edward never really had the chance to rule England. Edward was raised as a Protestant so England became more Protestant during his reign.

Mary I, reigned 1553-1558

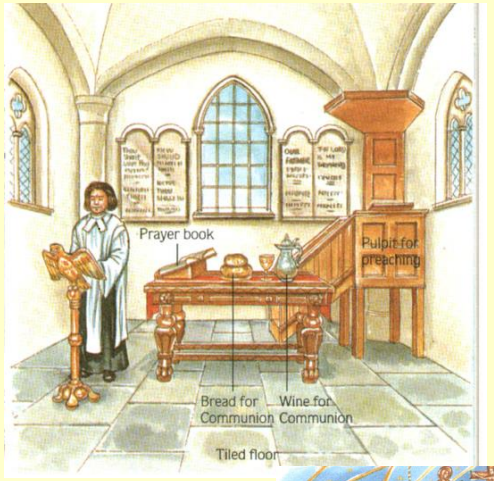
Mary was Henry VIII's eldest daughter and a strong Catholic. Nicknamed 'bloody Mary' she is often remembered for executing many Protestants but was also a strong queen in a difficult time.

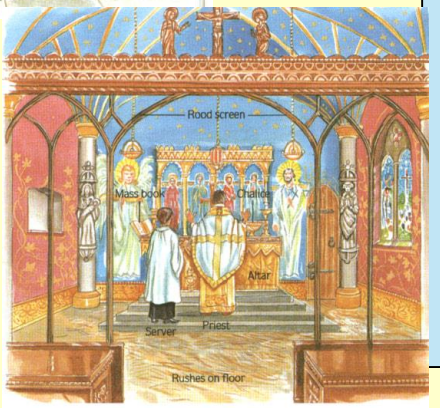
Elizabeth I, reigned 1558-1603

Elizabeth was Henry VIII's youngest child and a Protestant like her brother. Often remembered as one of England's greatest queens, she continued to make England more Protestant, with increasingly harsh punishments of Catholics who resisted.

The Tudors

The Tudors were a family who ruled England between 1485 and 1603. They are remembered for the amount that they changed England. One of the biggest changes they introduced under Henry VIII, Edward VI and Elizabeth I was the English Reformation. This was when England changed from a Catholic country to being a Protestant country.





Key Vocabulary

The Reformation - A process of religious change in early modern Europe, where much of Europe converted from Catholicism to Protestantism

Catholicism - A type of Christianity that believes that the Pope is the head of the Church and that the Bible and church services should be in Latin

Protestantism - A type of Christianity that does not believe that the Pope is the head of the Church and that the Bible and church services should be read by people in the own language

Henry VIII - King of England between 1509 and 1547. Most famous for his six wives, Henry was also important in making England a more Protestant country with himself as head of the English Church

Martin Luther - A German Protestant who wrote several important books/articles about religion that helped spread the Protestant religion around Europe

Year 7 Unit 13 –Developing Number Sense

What do I need to be able to do?

- Use mental methods for addition and subtraction
- Use mental methods for multiplication and division
- Use factors to simplify calculations
- Use estimation to check calculations
- Use fact families
- Use algebraic facts

Vocabulary

Associative: when you add or multiply you can do so regardless of how the numbers are grouped.
Commutative: changing the order of the operations does not change the result.
Dividend: the number being divided
Divisor: the number we divide by.
Equation: a mathematical statement with two things that are equal
Expression: a maths sentence with a minimum of two numbers and at least one maths operation but no equals sign
Quotient: the result of a division.

Mental methods for addition/ subtraction

Addition is commutative

6 + 3 = 3 + 6

The order of addition does not change the result

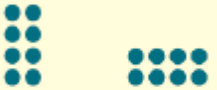
Subtraction the order has to stay the same

360 – 147 = 360 – 100 – 40 – 7

- Number lines help for addition and subtraction
- Working in 10's first aids mental addition/ subtraction

Mental methods for multiplication/ division

Multiplication is commutative



2 × 4 = 4 × 2

The order of multiplication does not change the result

Partitioning can help multiplication

24 × 6 = 20 × 6 + 4 × 6
= 120 + 24
= 144

Division is not associative

Chunking the division can help 4000 ÷ 25
"How many 25's in 100" then how many chunks of that in 4000

Mental methods for decimals

Multiplying by a decimal < 1 will make the original value smaller e.g × 0.1 = ÷ 10

Methods for multiplication 1.2 × 0.03

12 × 3 = 36
1.2 × 3 = 3.6
1.2 × 0.3 = 0.36
1.2 × 0.03 = 0.036

12 × 3 = 36
÷ 10 ÷ 100 ÷ 1000
1.2 × 0.03 = 0.036

Methods for division 1.5 ÷ 0.05

Multiply by powers of 10 until the divisor becomes an integer

1.5 ÷ 0.05
×100 ×100
150 ÷ 5 = 30

Methods for addition 2.3+2.4

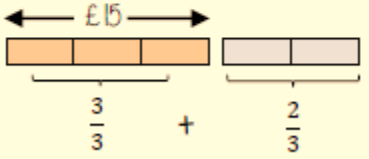
2 + 2 = 4
0.3 + 0.4 = 0.7
4 + 0.7 = 4.7

Mental methods for fractions

Use bar models where possible

I've spent $\frac{2}{5}$ of my money I have £21 left

How much did they have to begin with?



What is $\frac{5}{3}$ of £15?

Multiplying Decimals

Dividing Decimals

Reverse Fractions

Using factors to simplify calculations

30 x 16

10 x 3 x 4 x 4

10 x 3 x 2 x 8

2 x 5 x 3 x 2 x 2 x 2 x 2

16 x 10 x 3

Multiplication is commutative
Factors can be multiplied in any order

Estimation

Estimations are useful – especially when using fractions and decimals to check if your solution is possible.

Most estimations round to 1 significant figure

Estimations are useful – especially when using fractions and decimals to check if your solution is possible.

210 + 899 < 1200

This is true because even if both numbers were rounded up, they would reach 300 + 900.

The correct estimation would be 200 + 900 = 1100.

Number facts

Use 124 x 5 = 620

For multiplication, each value that is multiplied or divided by powers of 10 needs to happen to the result

620 ÷ 124 = 50

For division you must consider the impact of the divisor becoming smaller or bigger.
Smaller – the answer will be bigger
(It is being shared into less parts)
Bigger – the answer will be smaller
(It is being shared into more parts)

Algebraic facts

2a + 2b = 10 — Everything x 2

0.1a + 0.1b = 0.5 — Everything ÷ 10

a + b = 5

Add 2 to the total

a + b + 2 = 7

The unknown quantity isn't changing but the variables change what is done to give the result.

Estimation

Factors

Number Facts

A job that relies on number skill:

A Stockbroker

A stockbroker is someone who buys and sells stock on the stock exchange. They buy and sell stock, as a normal person cannot walk into the stock exchange for example, and ask to buy stock. They can also advise people the best way to manage their stock.

Key skills for stockbrokers
- IT and maths skills
- Ambition and determination
- Ability to persuade
- Communication skills
- Strong decision-making skills
- Ability to work in a high-stress environment
- Very good negotiation skills
- Ability to build lasting relationships.

Year 7 Unit 14 – Sets and Probability

What do I need to be able to do?

- Identify and represent sets
- Interpret and create venn diagrams
- Understand intersection and union of two sets
- Generate sample spaces for two events.
- Calculate probability of a single event.
- Use the probability scale

Vocabulary

Bias: where one outcomes is more likely to happen than another
Element: each number belonging to a set
Fair: where all outcomes have the same likelihood of happening
Intersection: the overlapping part of a venn diagram
Mutually Exclusive: events that do not occur at the same time
Probability: the chance of something happening
Random: something that happens by chances and is unable to be predicted
Set: A collection of things or numbers
Union: two sets that are joined

Venn Diagrams

Identify and represent sets

The **universal set** has this symbol ξ – this means EVERYTHING in the Venn diagram is in this set

A set is a collection of things – you write sets inside curly brackets { }

ξ = {the numbers between 1 and 50 inclusive}

My sets can include every number between 1 and 50 including those numbers

A = {Square numbers}

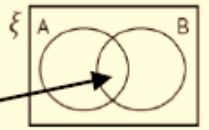
A = {1, 4, 9, 16, 25, 36, 49}

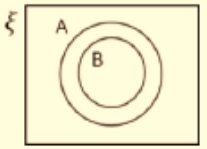
All the numbers in set A are square number and between 1 and 50

Interpret and create Venn diagrams

Mutualy exclusive sets
The two sets have nothing in common
No overlap

Union of sets
The two sets have some elements in common – they are placed in the intersection

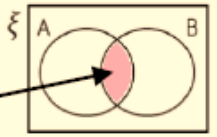




Subset
All of set B is also in Set A so the ellipse fits inside the set.

The box
Around the outside of every Venn diagram will be a box. If an element is not part of any set it is placed outside an ellipse but inside the box

Intersection of sets

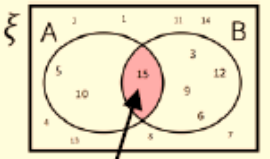


Elements in the intersection are in set A AND set B

The notation for this is $A \cap B$

ξ = {the numbers between 1 and 15 inclusive}

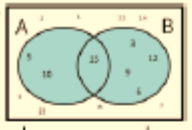
A = {Multiples of 5} B = {Multiples of 3}



The element in $A \cap B$ is 15

In this example there is only one number that is both a multiple of 3 and a multiple of 5 between 1 and 15

Union of sets



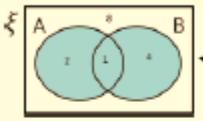
ξ = {the numbers between 1 and 15 inclusive}
A = {Multiples of 5} B = {Multiples of 3}

Elements in the union could be in set A OR set B

The elements in $A \cup B$ are 5, 10, 15, 3, 9, 6, 12

The notation for this is $A \cup B$

There are 7 elements that are either a multiple of 5 OR a multiple of 3 between 1 and 15



This Venn shows the number of elements in each set

Sample space – for single events

A sample space for rolling a six-sided dice is S = {1, 2, 3, 4, 5, 6}

A sample space for this spinner is S = {Pink, Blue, Yellow}

You only need to write each element once in a sample space diagram

- A Sample space represents a possible outcome from an event
- They can be interpreted in a variety of ways because they do not tell you the probability

Probability of a single event

Probability = number of times event happens / total number of possible outcomes

P(Blue) = 4/10 ← There are 4 blue sectors; There are 10 sectors overall

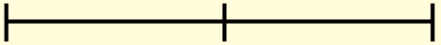
Probability notation P(event) = 2/5

Probability can be a fraction, decimal or percentage value

4/10 = 40/100 = 0.40 = 40%

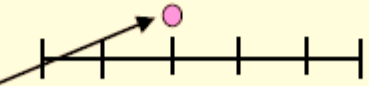
Probability is always a value between 0 and 1

The probability scale



Impossible 0 or 0% | Even chance 0.5, 1/2 or 50% | Certain 1 or 100%

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



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

There are 5 possible outcomes
So 5 intervals on this scale, each interval value is 1/5

Sum of probabilities

Probability is always a value between 0 and 1

The probability of getting a blue ball is 1/5
∴ The probability of NOT getting a blue ball is 4/5
The sum of the probabilities is 1

The table shows the probability of selecting a type of chocolate

Dark	Milk	White
0.15	0.35	

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

Sample Space

Probability

Probability Scale

A job that relies on probability:

A Budget Analyst

Budget Analysts are responsible for analysing budget proposals, determining funding allocations and predicting future financial requirements.

Budget Analysts are well-versed in statistical modeling and are expert mathematicians.

Budget Analyst Requirements:

- Bachelor's degree in finance, accounting, or related field.
- Master's degree preferred.
- Experience managing budgets.
- Highly analytical mindset.
- Proficiency in data analysis and statistical forecasting.
- Excellent mathematical aptitude.
- Good problem-solving skills.
- Excellent written and verbal communication.
- Exceptional interpersonal skills.
- Attention to detail.

Year 7 Unit 15 –Prime Numbers and Proof

What do I need to be able to do?

- Find and use mutliples
- Identify factors of a number
- Recognise and identify prime numbers
- Recognise square and triangular numbers.
- Find common factors including the HCF
- Find common multiples including LCM

Vocabulary

Conjecture: a statement that might be true but is not proven
Counter Example: a special type of examples that proves something wrong.
Factor: whole numbers that multiply to make another number
HCF: highest common factor (biggest factor shared by two numbers)
Integer: a whole number with no decimals involved.
LCM: lowest common multiple (the first number in both of the timestables)
Multiple: a number in the timestable of that number.
Prime: a whole number with only 2 factors, 1 and itself

Factors

Multiples

Prime

Square

Multiples — The "times table" of a given number

All the numbers in this lists below are multiples of 3

3, 6, 9, 12, 15...

This list continues and doesn't end

3x, 6x, 9x ...

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

Non example of a multiple

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

Not an integer

Factors

Arrays can help represent factors

5 x 2 or 2 x 5

Factors of 10
1, 2, 5, 10

10 x 1 or 1 x 10

The number itself is always a factor

Factors and expressions

6x × 1 OR 6 × x

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

2x × 3

3x × 2

Prime numbers

- Integer
- Only has 2 factors
- and itself

2

The first prime number
The only even prime number

Learn or how-to quick recall...

2, 3, 5, 7, 11, 13, 17, 19, 23, 29...

Square and triangular numbers

Square numbers

odd even odd

Representations are useful to understand a square number n^2

1, 4, 9, 16, 25, 36, 49, 64 ...

Triangular numbers

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

Add two consecutive triangular numbers and get a square number

1, 3, 6, 10, 15, 21, 28, 36, 45...

Common factors and HCF

1 is a common factor of all numbers

Common factors are factors two or more numbers share

HCF – Highest common factor

HCF of 18 and 30

18: 1, 2, 3, 6, 9, 18

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

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

HCF = 6

6 is the biggest factor they share

Common multiples and LCM

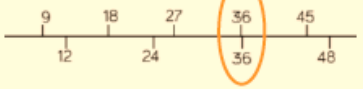
Common multiples are multiples two or more numbers share

LCM – Lowest common multiple

LCM of 9 and 12

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

LCM = 36 — The first time their multiples match



Comparing fractions

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

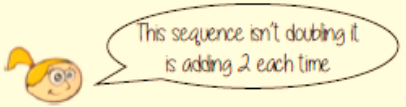
Conjectures and counterexamples

Conjecture

1, 2, 4, ...
The numbers in the sequence are doubling each time.

A pattern that is noticed for many cases

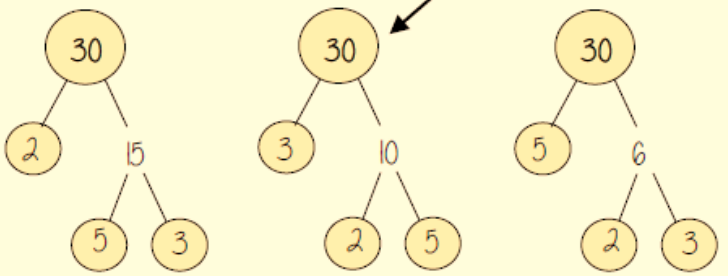
Counterexamples



Only one counterexample is needed to disprove a conjecture

Product of prime factors

Multiplication part-whole models



All three prime factor trees represent the same decomposition

Multiplication is commutative

30 = 2 x 3 x 5 ← Multiplication of prime factors

Using prime factors for predictions

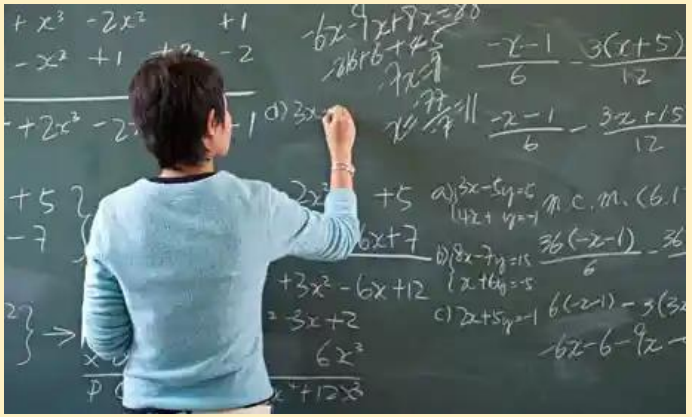
e.g. 60	30 x 2	2 x 3 x 5 x 2
150	30 x 5	2 x 3 x 5 x 5

Product of Primes

Highest Common Factor

Lowest Common Multiple

A job that relies on number skills:



A Maths Teacher

Things we love about being a maths teachers:

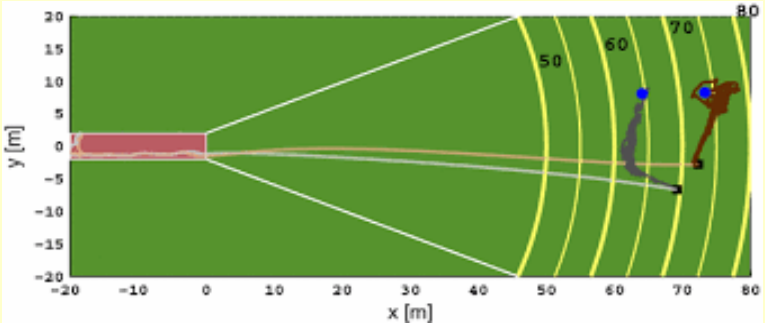
- Helping young people to achieve and move on to their next steps in life.
- Being able to work with lots of different people.
- Getting to do maths every day and keeping the brain sharp!
- Watching people who work hard be successful.

Year 7 Physical Education -Topic: Athletics

Running, Sprinting – 100m
•Explosive **start** from crouch position
•Drive phase – lean forward for first 20m, pumping arms and legs fast.
•Upright running – high knees, relaxed shoulders.
•Strong finish – dip at the line.
Rules
False starts result in disqualification.
Must stay in own lane.

Running, Distance -800m
This is 2 laps of a normal 400m running track
•Pace yourself – don't sprint at the start.
•Last 200m: Increase speed, sprint finish.
Rules
•Can break into inside lane after 100m.
•Interference with other runners results in disqualification

Javelin throwing area



Jumping – Long Jump
Run-up – sprint.
Take-off – one-footed jump from the board.
Flight – drive knees up, keep body balanced.
And fall forwards
Rules:
Must take off from the take off board and not go over the board
Furthest point back on landing is measured.

Throwing – Javelin
•Grip: Hold javelin at grip point, fingers under.
•Throw: Strong push from back leg, release at 45°
Rules
•Must throw within the marked sector.
•Javelin tip must hit ground first.

Throwing -Shot Put
•Grip: Shot rests at base of fingers, not palm.
•Stance: Start in low position, weight on back leg.
•Push, not throw! – Extend arm, drive forward.
Rules:
•Must stay inside the circle.
•Shot must land in sector.

Key Vocabulary
Sprinting
Speed –The time taken to cover a set distance
Reaction time – the time take for an athlete to respond to a stimulus and initiate a response
Distance Running
Pacing –running at a speed to allow you to complete the race. Ina distance event you don't want to start too fast
Aerobic endurance – the ability of the cardio respiratory system to provide oxygen to the working muscles
Long Jump
Shot
Javelin
Power – a combination of speed and strength

Year 7 Physical Education – Topic: Cricket

Basic Rules
- **Teams**: 11 players per team.
- **Overs**: Each over consists of 6 balls.
- **Batting**: Two batters are on the pitch at a time, aiming to score runs.
- **Bowling**: Bowlers deliver the ball with a straight arm action.
- **Fielding**: Players try to prevent runs and take wickets.

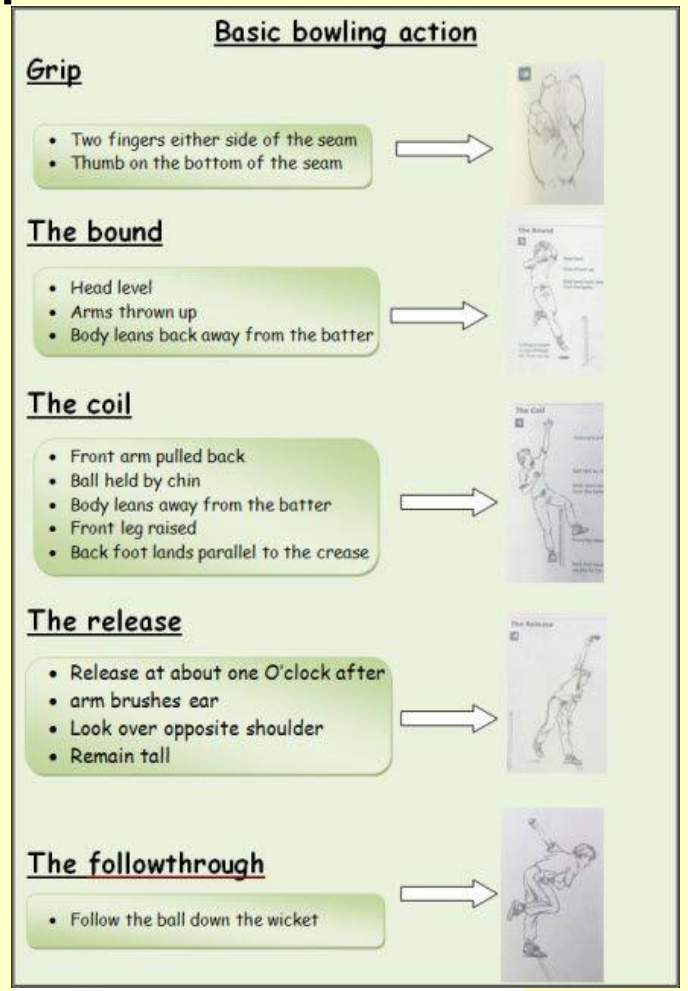
Rules of The Game

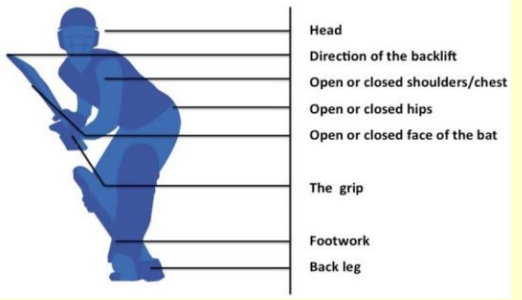
Ways to Get Out
- **Bowled** – Ball hits the stumps.
- **Caught** – Ball is hit in the air and caught before bouncing.
- **LBW (Leg Before Wicket)** – Ball would hit the stumps but is blocked by the batter's leg.
- **Run Out** – Batter is outside the crease when the stumps are hit.
- **Stumped** – Wicketkeeper removes bails while batter is out of their crease.

Scoring Runs
- **Single, Two, Three** – Running between the wickets.
- **Four** – Ball reaches boundary after bouncing.
- **Six** – Ball crosses boundary without bouncing.

Batting Skills
- **Grip**: Hands together, "V" shape pointing towards the off-side.
- **Stance**: Feet shoulder-width apart, knees slightly bent.
- **Shots**:
- **Defensive shot** – Blocks the ball.
- **Drive** – Front foot shot along the ground.
- **Pull/Cut** – Back foot shots for short-pitched deliveries.

Key Terms
- **Crease** – Lines marking where the batter stands.
- **Innings** – Each team's turn to bat.
- **All-rounder** – A player good at batting and bowling.
- **Umpire** – Official who enforces rules.
- **Boundary** – Perimetre of playing area

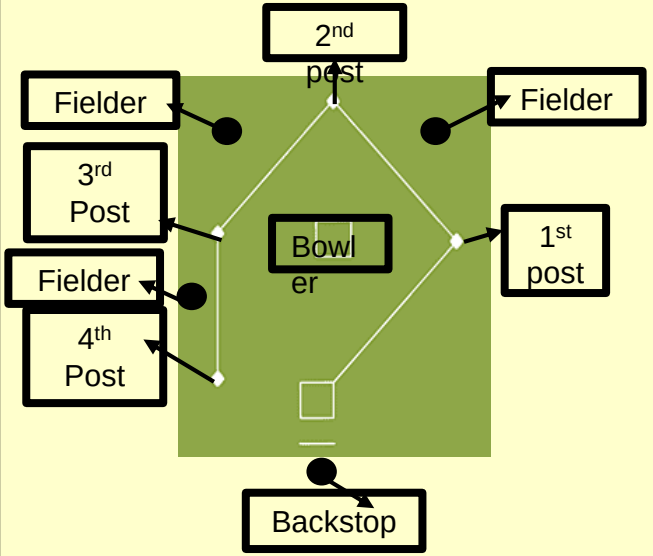


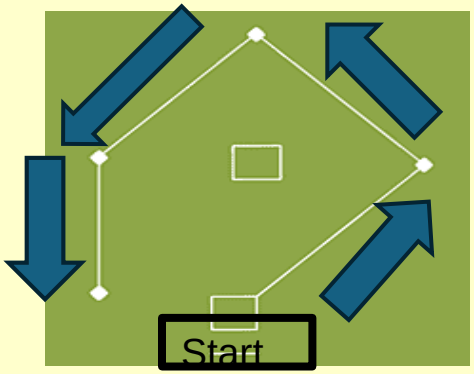


Year 7 Physical Education – Topic: Rounders

What is Rounders?

- Rounders is a bat and ball game played between two teams.
- It involves batting (hitting the ball with a bat) and running around a circuit of bases to score points.
- Opponents use fielding to prevent the batter running around the circuit. Fielding involves catching, tracking and stopping the ball and throwing it to others to stomp the runner out.
- When fielding, it is important to work as a team and have good communication skills.
- In rounders, there are 9 players on a team.





In rounders, the batter starts in the batter box. Once the bowler has bowled the ball, they must run in an anti- clockwise direction until they make it to 4th post.

Key Vocabulary:

Bowler
Backstop
Fielder
Rounders
Posts

Rounders position:	What is their role?
Bowler	Stand with one-foot infront of the other. Step forward with the opposite foot to throwing up to stay balanced. Use your non throwing arm to point in the direction that you want the ball to go. The bowler should bowl the ball underarm. Point fingers at target as you release.
Backstop	In rounders, a backstop is the person who stands behind the batter. Their job is to catch any balls that are missed or that get past the batter. This helps to make sure the ball doesn't roll too far away, so the game can keep going without losing the ball. The backstop also tries to stop the batter from running to the next post by getting the ball back to the players quickly.
Fielders	In rounders, fielders are players who stand in different positions around the field to stop the batter from running to the posts. They try to catch the ball or get it to the posts quickly to get the batter out.

Summer 2

Year 7 Science: Bioenergetics

Key Vocabulary:
Energy transfer
Photosynthesis
Chlorophyll
Glucose
Starch
Respiration
Oxygen
Carbon dioxide

Key Question:
What is the difference between photosynthesis and respiration?
How does energy transfer through food chains?

Photosynthesis is how plants make glucose.
Happens in chloroplasts using sunlight, CO_2, and water.
Word equation: carbon dioxide + water → glucose + oxygen
All living cells use respiration to release energy.
Word equation: glucose + oxygen → carbon dioxide + water

Habitat: where an organism lives.
Different organisms have adaptations to suit their habitat.
Animals adapt for survival: camouflage, hibernation, etc.
Variety of life in an area.
More biodiversity = healthier ecosystems.

Key Vocabulary:
Classification
Habitat
Food chain
Food web
Producer
Consumer
Predator
Prey
Biomass

Key Question:
Why is starch a useful test for photosynthesis?
What adaptations help plants survive in dry environments?
Why is biodiversity important?

Year 7 Spanish – Topic: **¿Qué hay en tu ciudad?**

¿Qué haces en la ciudad?	***What do you do in town?***
Salgo con mis amigos.	I go out with my friends.
Voy…	I go…
al cine	to the cinema
al parque	to the park
a la bolera	to the bowling alley
a la cafetería	to the café
a la playa	to the beach
de compras	*shopping*
de paseo	*for a walk*
No hago nada.	*I do nothing.*

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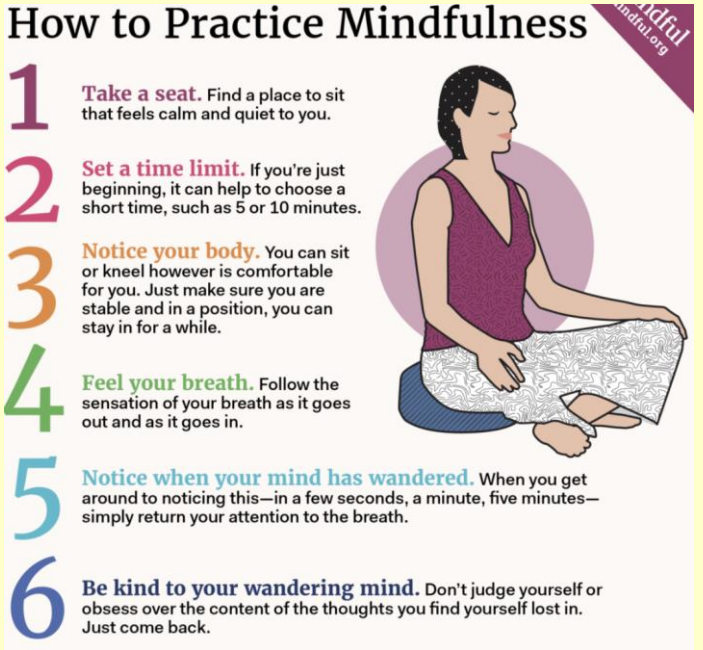
¿Te gusta vivir en…?	***Do you like living in…?***
Me gusta mucho vivir en…	I like living in… a lot.
No me gusta nada vivir en… porque hay/es…	I don't like living in… at all. because there is/it is…

En la cafetería	***In the café***
Yo quiero…	*I want…*
bebidas	*drinks*
un batido de chocolate/de fresa	*a chocolate/strawberry milkshake*
un café	*a coffee*
una Coca-Cola	*a Coca-Cola*
una Fanta limón	*a lemon Fanta*
un granizado de limón	*an iced lemon drink*
un té	*a tea*
raciones	*snacks*
calamares	*squid*
croquetas	*croquettes*
gambas	*prawns*
jamón	*ham*
pan con tomate	*tomato bread*
patatas bravas	*spicy potatoes*
tortilla	*Spanish omlette*
¿Algo más?	*Anything else?*
No, nada más.	*No, nothing else.*
¿Y de beber?	*And to drink?*
¿Cuánto es, por favor?	*How much is it, please?*
Son cinco euros setenta y cinco.	*That's 5,75 €.*

Year 7 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…



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.fyinorfolk.nhs.uk/ - it costs nothing to sign up and get help!