

Year 8 Autumn Term Knowledge Organisers

What is a Knowledge Organiser?

It is a concise summary of all the core facts, key vocabulary and essential concepts you need to know, understand and be able to use within each subject area, it will cover all the information you need to prepare for your BASE assessments and your subject spotlights.

How do Knowledge organisers link to Homework?

In our new homework policy, all homework will link to using your knowledge organisers to help you revise and develop your knowledge and skills in each subject area. Your teacher may set you specific tasks to complete or may for example do a retrieval test at the beginning of the lesson to ensure you are completing homework revision tasks.

How long should I revise for?

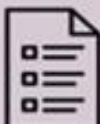
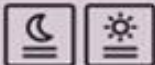
Everyone is different and you need to practice building the study habits that work for you, this includes working out how long to study for at a time and most importantly when to take breaks. Research says that the best habits are to study in short blocks of time with a break in between. The length of your break depends on how long you've been studying and how tired your brain feels. The goal is to rest just long enough to reset your focus without losing momentum.

- *Short breaks* (5–10 minutes): Best after 25–50 minutes of focused work. They keep your energy steady and stop your brain from switching off.
- *Longer breaks* (15–30 minutes): Useful after several study cycles or 1–2 hours of deep work. They help you recharge before starting again.
- *Micro-breaks* (1–2 minutes): A quick stretch, sip of water, or eye rest can refresh your concentration when working on something intense.

Research has shown that even these tiny “micro-breaks” can make a real difference. Taking just a minute or two to move or rest your eyes improves performance and helps prevent fatigue. The quality of your break matters more than the length. Two minutes spent walking, stretching, or breathing deeply can do far more for your concentration than ten minutes scrolling through your phone.

How can I use my Knowledge Organisers?

It takes time to learn what methods you prefer and work best for you. Use these knowledge organisers for each subject to recap on learning from lessons and test your understanding or develop your skills. There are some examples of tasks you could complete here, the important thing is that you are trying out different techniques to learn what works for you. Everyone is different and prefers a different way of working, if you have tried these techniques and they are not working for you, try something else. Always ask for support, your tutors can help as can you subject teachers.

	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, 

CROSSES

RULING CLASS.
POWER, PRIVILEGE & CONTROL.

X NOUGHTS & CROSSES

A DYSTOPIAN PLAY BY DOMINIC COOKE

NOUGHTS

MARGINALISED.
OPPRESSED.
FIGHTING FOR
EQUALITY AND JUSTICE.

KEY CHARACTERS

CALLUM MCGREGOR

Nought protagonist

- Loyal, intelligent, determined
- Challenges injustice
- Loves Sephy deeply

SEPHY HADLEY

Cross protagonist

- Empathetic, feisty, courageous
- Challenges her world
- Risks everything for love & change

RYAN MCGREGOR

Callum's father

- Bitter & radicalised
- Joins the Liberation Militia (LM)

MEGGIE MCGREGOR

Callum's mother

- Peaceful, caring, protective
- Believes in non-violent change

JUDE MCGREGOR

Callum's older brother

- Aggressive, resentful
- Rejects peaceful methods & joins LM

LYNETTE MCGREGOR

Callum's sister

- Traumatised after loss
- Struggles with mental health

KAMAL HADLEY

Sephy's father

- Deputy Prime Minister
- Powerful, prejudiced, cruel

JASMINE HADLEY

Sephy's mother

- Wealthy socialite
- Unhappy, trapped in privilege

KEY EVENTS (TIMELINE)

- Sephy & Callum grow up together as friends.
- Callum wins a scholarship to Heathcroft High.
- Callum faces racism, bullying & prejudice.
- Ryan & Jude join the Liberation Militia (LM).
- Tensions grow between Crosses & Noughts.
- Callum joins the LM to protect his family.
- A bombing by the LM nearly kills Sephy.
- Sephy & Callum pursue their relationship.
- Callum is falsely accused of abducting & raping Sephy.
- Callum is executed. Sephy is left devastated.

THEMES

RACISM & PREJUDICE

Deeply rooted prejudice creates division, fear and violence.

POWER & PRIVILEGE

Crosses control politics, education and the law.

LOVE

Sephy & Callum's love challenges society's rules and expectations.

IDENTITY

Characters struggle to define themselves beyond the labels of 'Cross' or 'Nought'.

EXTREMISM & TERRORISM

Violence is born from oppression and the desire for change.

FAMILY

Families influence choices, beliefs and conflict throughout the play.

INJUSTICE

The justice system favours Crosses – truth is not enough.

REBELLION & RESISTANCE

Characters fight back against an unfair and broken system.

QUOTES (FROM THE PLAY)

"Us noughts and you Crosses."

– Page 8

"Maybe we are in different places..."

– Page 35

"I'm not Cross. I'm not Nought. I'm me."

– Sephy

LINKS TO ROMEO & JULIET

Forbidden love →

Family conflict →

Rival groups →

→ Tragic ending

→ Society's rules

→ Love vs duty

KEY QUOTE (REMEMBER)

"Prejudice is dangerous. It divides. It destroys. It kills."

★ Inspired by Shakespeare's Romeo and Juliet

✊ A story about love, power and resistance

⚖️ Explores inequality, injustice and hope

👤 A warning about how hatred destroys lives

🎭 A play that challenges us to fight for equality

Maths – Autumn Year 8



MAYFIELD SCHOOL

ESTIMATION & ROUNDING

KNOWLEDGE ORGANISER – HOW TO SOLVE ESTIMATION AND ROUNDING QUESTIONS

Work smart.
Check your answer.
Be accurate!



1 WHAT ARE YOU BEING ASKED TO DO?

Look for key words that tell you which method to use.

	Nearest 10 / 100 / whole number <i>e.g. nearest 10, nearest 100, nearest whole number</i>
	Decimal places (d.p.) <i>e.g. 1 d.p., 2 d.p., to 2 decimal places</i>
	Significant figures (s.f.) <i>e.g. 2 s.f., 3 significant figures</i>
	Estimate a calculation <i>e.g. estimate, calculate an approximate value</i>
	Find bounds / error interval <i>e.g. bounds, between, error interval</i>

2 ROUNDING NUMBERS – STEP BY STEP

STEP 1 Find the place value you are rounding to.

STEP 2 Look at the digit to the right.

STEP 3 0, 1, 2, 3, 4 → round down.
5, 6, 7, 8, 9 → round up.

STEP 4 Keep the digits before the place you are rounding to.

STEP 5 Change all digits after that place to 0 (if any).

EXAMPLES

627 to nearest 10
6 2 7 = 630
↑

627 to nearest 100
6 2 7 = 600
↑

3.57 to 1 d.p.
3 . 5 7 = 3.6
↑

3 SIGNIFICANT FIGURES – STEP BY STEP

STEP 1 Start at the first non-zero digit.

STEP 2 Count the required number of significant figures (s.f.).

STEP 3 Look at the next digit.
0, 1, 2, 3, 4 → round down.
5, 6, 7, 8, 9 → round up.

STEP 4 Round the last significant figure.
Change all later digits to 0.

EXAMPLES

1054.3 to 3 s.f.
1 0 5 4 . 3 = 1050
↑

0.0304 to 2 s.f.
0 . 0 3 0 4 = 0.030
↑

502 to 2 s.f.
5 0 2 = 500
↑

4 ESTIMATING CALCULATIONS

STEP 1 Round each number to 1 s.f. or to easy numbers.

STEP 2 Do the calculation.

STEP 3 Use the estimate to check if your answer is sensible.

STEP 4 Your estimate does not need to be exact – just reasonable.

EXAMPLES

19.8×3.1
 $\approx 20 \times 3$
 $= 60$

$198 \div 4.9$
 $\approx 200 \div 5$
 $= 40$

TIP: Estimates help you spot mistakes and build confidence. If your answer is very different, check your working!

5 BOUNDS AND ERROR INTERVALS

If a value rounds to 3.6 to 1 d.p.

Lower bound

3.55

rounds up to 3.6

Upper bound

3.65

is the first value that would round to 3.7

Error interval: $3.55 \leq x < 3.65$

- Lower bound is included ($\leq$).
- Upper bound is not included ($<$).
- The interval contains all values that round to 3.6 to 1 d.p.

6 COMMON MISTAKES

Forgetting to check the digit to the right. Always look!

Confusing decimal places (d.p.) with significant figures (s.f.). They are not the same.

Writing $3.55 < x < 3.65$ instead of $3.55 \leq x < 3.65$. The lower bound is included.

Rounding too early in a calculation. Round only when it helps with the estimate.

Giving an estimate instead of an exact answer when the question does not ask for an estimate.

Not checking what is being asked (d.p. or s.f., estimate or exact).

7 EXAM TECHNIQUE / FINAL CHECK

Underline or highlight what you are being asked to round to.

Show the rounded numbers or steps clearly.

Use estimates to check if your answer is sensible.

For bounds, use inequality signs carefully ($\leq$ or $<$).

Check whether the question wants d.p. or s.f.

Read the question again before you finish.

Smart checking leads to better results!

REMEMBER:

Use rounding and estimation to save time and check your answers!

KEY FACTS & SHORTCUTS

5 or more rounds up.

4 or less rounds down.

Overestimate = higher than actual value.

Underestimate = lower than actual value.

Exact answers are not rounded unless asked.



MAYFIELD SCHOOL

SOLVING LINEAR EQUATIONS

KNOWLEDGE ORGANISER – HOW TO SOLVE EQUATIONS

Solve with confidence!
Practice makes progress.



1 THE GOAL



Solve means isolate the variable so it is alone.

RULE: Whatever you do to one side, do to the other side.

Think of it like a balance – keep both sides equal.



2 ONE-STEP EQUATIONS

METHOD: Use the inverse operation.

$+5$ $x + 5 = 12 \rightarrow x = 7$
 -5

-4 $x - 4 = 9 \rightarrow x = 13$
 $+4$

$\times 3$ $3x = 15 \rightarrow x = 5$
 $\div 3$

$\div 4$ $\frac{x}{4} = 6 \rightarrow x = 24$
 $\times 4$

3 TWO-STEP EQUATIONS

METHOD: Undo addition/subtraction first, then undo multiplication/division.

EXAMPLE:

$2x + 7 = 19$ Original equation
 $2x + 7 - 7 = 19 - 7$ Subtract 7
 $2x = 12$ Simplify
 $2x \div 2 = 12 \div 2$ Divide by 2
 $x = 6$ Solution

4 EQUATIONS WITH BRACKETS OR VARIABLES ON BOTH SIDES

METHOD:

- Expand brackets.
- Collect like terms.
- Move variables to one side.
- Move numbers to the other side.
- Solve.

EXAMPLE:

$2(x - 3) + 5 = 3x + 1$ Original equation
 $2x - 6 + 5 = 3x + 1$ Expand brackets
 $2x - 1 = 3x + 1$ Simplify
 $2x - 1 - 3x = 3x + 1 - 3x$ Subtract 3x
 $-1 = x + 1$ Simplify
 $-1 - 1 = x + 1 - 1$ Subtract 1
 $x = -2$ Solution

5 CHECKING YOUR ANSWER

METHOD: Substitute your solution back into the original equation.

EXAMPLE: Check $x = -2$ in $2(x - 3) + 5 = 3x + 1$

Left-hand side (LHS)	Right-hand side (RHS)
$2(-2 - 3) + 5$	$3(-2) + 1$
$= 2(-5) + 5$	$= -6 + 1$
$= -10 + 5$	$= -5$
$= -5$	

✓ LHS = RHS, so the solution is correct.

6 COMMON MISTAKES

- Not doing the same thing to both sides. This breaks the balance.
- Sign errors with negatives. E.g. $- -5 = +5$, not -5 .
- Expanding brackets incorrectly. E.g. $2(x - 3) = 2x - 3$, not $2x - 6$.
- Forgetting to divide by the coefficient at the end. E.g. getting $3x = 15$ but forgetting to $\div 3$.
- Leaving the variable on both sides. Always collect variables on one side.

7 EXAM TECHNIQUE / FINAL CHECK



- Show each line clearly.
- Write one operation per step.
- Keep equals signs lined up.
- Check your answer by substitution.
- If the answer is a fraction, leave it simplified.

★ Neat, logical working gains more marks!



REMEMBER:
Inverse operations undo each other.



Addition $\leftrightarrow$ Subtraction
Multiplication $\leftrightarrow$ Division



Coefficient =
number multiplying the variable.



Solution =
value that makes the equation true.



Keep it balanced –
do the same to both sides.



MAYFIELD SCHOOL

SEQUENCES

KNOWLEDGE ORGANISER – HOW TO SOLVE SEQUENCE QUESTIONS

Spot the pattern.
Use the rule.
Crack the code!



1 WHAT TYPE OF SEQUENCE IS IT?



ARITHMETIC SEQUENCE

The same amount is added or subtracted each time.

Examples:

Sequence	Rule (common difference)
4, 7, 10, 13, ...	+3
20, 15, 10, 5, ...	-5



FIBONACCI-STYLE SEQUENCE

Add the previous two terms to get the next term.

Example:

$$2, 3, 5, 8, 13, \dots$$

$$2+3=5 \quad 3+5=8 \quad 5+8=13 \quad 8+13=21$$

2 FINDING THE NEXT TERM

STEP 1: Find the difference between terms.

Example:

$$7, 11, 15, 19, \dots$$

$$+4 \quad +4 \quad +4$$

Difference = +4

STEP 2: Continue the pattern.

$$19 + 4 = 23$$

Next term = **23**

TIP: Check the pattern is consistent before continuing.

3 FINDING THE n^{TH} TERM (ARITHMETIC SEQUENCES)

STEP 1

Find the common difference.

Example: 4, 7, 10, 13, ...

$$+3 \quad +3 \quad +3$$

Difference = 3

STEP 2

Start with difference $\times n$.

Difference is 3, so start with

$3n$

n is the position
(1st term, 2nd term,
3rd term, ...)

STEP 3

Find the constant.

Test $n = 1$ (the first position).
 $3 \times 1 = 3$ but the first term is 4.
We need 1 more.

Add 1

STEP 4

Write the n^{th} term.

$n^{\text{th}} \text{ term} = 3n + 1$

This rule works for
any position, not
just the first few
terms.

4 CHECK YOUR ANSWER

Use your rule to generate terms and check they match.

Example rule: $3n + 1$

Position (n)	1	2	3	4	5	6
Calculate $3n + 1$	$3(1)+1$	$3(2)+1$	$3(3)+1$	$3(4)+1$	$3(5)+1$	$3(6)+1$
Term	4	7	10	13	16	19

Matches the original sequence: 4, 7, 10, 13, 16, 19, ...



5 COMMON MISTAKES



Using the term number instead of the term value.

Wrong: Using 3 instead of 10 when finding the next term.
Always use the actual term value.



Forgetting the common difference.

Make sure the difference is the same between every pair of consecutive terms.



Confusing term-to-term rules with n^{th} term rules.

Term-to-term tells you how to get from one term to the next. n^{th} term works for any position.



Assuming every sequence is arithmetic.

Check carefully – it might be Fibonacci-style or another pattern.

EXAM METHOD



NEXT TERM QUESTION

- Find the difference between terms.
- Continue the pattern to find the next term.



n^{TH} TERM QUESTION (ARITHMETIC)

- Find the common difference.
- Multiply the difference by n .
- Adjust the constant (test with $n = 1$).
- Write the n^{th} term.
- Check your answer.



REMEMBER: Look for patterns, think about the rule, and use it to find any term in the sequence.



KEY FACTS & SHORTCUTS

n^{th} term = (common difference $\times n$) + constant
 n means the position in the sequence.

KEY WORDS

Sequence: numbers in order that follow a rule.

Term: a number in a sequence.

Common difference: the constant amount added or subtracted.

n^{th} term: a rule to find the term at any position n .



MAYFIELD SCHOOL

LINEAR GRAPHS

KNOWLEDGE ORGANISER – HOW TO DRAW AND READ LINEAR GRAPHS

Use the steps,
check your work,
and be accurate!



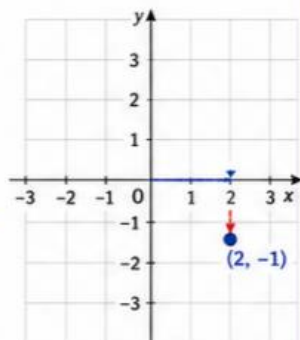
1 PLOTTING COORDINATES

Method:

- Read x first, then y .
- Move along the x -axis, then up or down the y -axis.

Example:

(2, -1) means
2 right and 1 down.



2 DRAWING A GRAPH FROM AN EQUATION

Example: $y = 2x + 1$

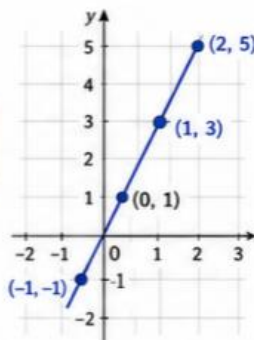
STEP 1: Make a table of values.

x	-1	0	1	2
$y = 2x + 1$	-1	1	3	5

STEP 2: Plot the points.

(-1, -1), (0, 1), (1, 3), (2, 5)

STEP 3: Join them with a ruler to make a straight line.



3 READING THE GRADIENT

$$\text{Gradient} = \frac{\text{rise}}{\text{run}}$$

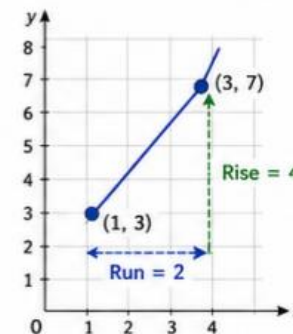
Use two points on the line.

Example: (1, 3) and (3, 7)

Rise = 4

Run = 2

$$\text{Gradient} = \frac{4}{2} = 2$$



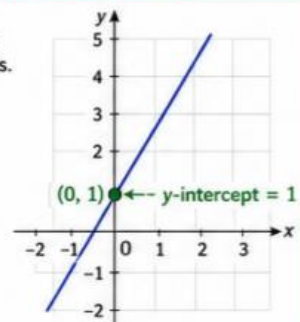
4 READING THE y-INTERCEPT

The y -intercept is where the line crosses the y -axis.

In $y = mx + c$,
the y -intercept is c .

Example:

$y = 2x + 1$ has
 y -intercept 1.



5 FINDING THE EQUATION OF A LINE

STEP 1: Find the gradient (m).

Use two points and calculate rise/run.

STEP 2: Find the y -intercept (c).

Read where the line crosses the y -axis.

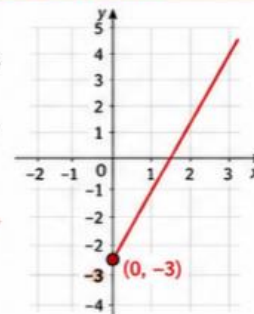
STEP 3: Write the equation.

Use $y = mx + c$.

Worked example:

Gradient = 2 and y -intercept = -3

Equation: $y = 2x - 3$



6 COMMON MISTAKES

- Mixing up x and y coordinates.
- Forgetting to use a ruler.
- Reading rise and run the wrong way round.
- Confusing gradient with y -intercept.
- Drawing a curve instead of a straight line for a linear graph.

7 EXAM TECHNIQUE / FINAL CHECK



- 1 Label axes clearly.
Include x and y
and the origin (0,0).



- 2 Choose a sensible
scale.
Use even intervals.



- 3 Plot carefully.
Use small, neat
crosses or dots.



- 4 Check if the line
should continue.
Extend with a thin
line and arrowheads
if appropriate.



- 5 Use the graph to
estimate values
only when asked.
Don't read values
unless requested.



REMEMBER

Apply the steps, check your work
and show clear working.



KEY FACTS & SHORTCUTS

Linear graphs
are straight lines.

Equation of a line:
 $y = mx + c$

m = gradient
(slope)

c = y -intercept
(where the line crosses
the y -axis)



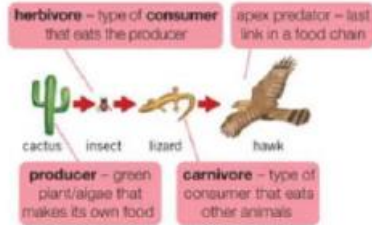
x -intercept:
where the line crosses
the x -axis ($y = 0$)

Science – Autumn Year 8

Food chains and webs

- **Food chains** show the direction in which energy flows when one organism eats another
- The direction of the arrows represent the direction in which the energy flows
- **Food webs** show how a number of different food chains are connected

Food chain



Food web



- **Producers** are the organisms which start the food chain, they convert energy from the Sun, making their own food, these are often plants
- **Prey** are organisms which are eaten by other organisms
- **Predators** are the organisms which eat the prey

Disruption to food chains

- **Interdependence** is the way in which living organisms rely on each other to survive
- A food chain will be disrupted if one of the organisms die out
- If the producer dies out the rest of the food chain will also die out unless they have a different food source
- If the **consumer** population die out the number of organisms which they eat will increase unless they are eaten by another organism
- **Bioaccumulation** is the process by which chemicals such as pesticides and insecticides build up along a food chain

Parts of a flower

Stamen

Male part of the flower

- The **anther** produces **pollen**
- The **filament** holds up the anther



Carpel

Female part of the flower

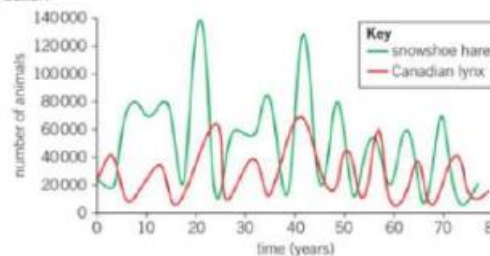
- The **stigma** is sticky to catch grains of pollen
- The **style** holds up the stigma
- The **ovary** contains **ovules**

Ecosystems

- All of the organisms which live in one area are known as a **population**
- An **ecosystem** is all of the organisms which are found in a particular location and the area in which they live in, both the living and non-living features
- A **community** are all of the areas in an ecosystem, the area in which the organisms live in is known as the **habitat**
- A **niche** is the specific role in which an organism has within an ecosystem, for example a panda's diet consists of 99% bamboo

Competition

- **Competition** is the process in which organisms compete with one another for resources
- Animals compete for food, water, space and mates
- Plants compete for light, water, space and minerals
- The best competitors are those who have adapted in order to best gain these resources
- As the number of a predator in a population increases the number of the prey will decrease as more are being eaten
- As the number of the predator decreases the number of the prey will increase as less are being eaten
- The relationship between the predator and the prey is known as a **predator-prey relationship**



Pollination and fertilisation

Pollination is the **fertilisation** of the ovule, the point at which the pollen is transferred to the ovule from the anther to the stigma, there are two types of pollination

- Cross pollination is between two different types of plant
- Self pollination happens within the same plant



The tube grows out of the pollen grain and down through the style.



The pollen nucleus moves down the tube.



The pollen nucleus joins with the ovule nucleus. Fertilisation takes place and a seed will form.

Germination is the process in which the **seed** begins to grow, for this to occur the seed needs:

- Water to allow the seed to swell and grow and for the embryo to start growing
- Oxygen for that the cell can start respiring to release energy for germination
- Warmth to allow the chemical reactions to start to occur within the seed

Key terms

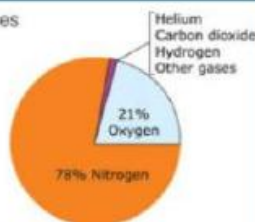
Make sure you can write definitions for these key terms.

anther bioaccumulation carpel community competition consumer ecosystem fertilisation food chain food web germination habitat interdependence
niche ovary ovule petal predator prey producer pollen pollination population seed sepal stamen stigma style

Science – Autumn Year 8

The atmosphere

- The air around us all of the time is known as the **atmosphere**, it is made up of a mixture of gases
- When the Sun heats the Earth's surface, some of the radiation is absorbed and some is reflected back into space
- Some of the gases in the atmosphere absorb radiation that is about to be reflected into space, this keeps the Earth at a warmer temperature than it would be without the atmosphere, this is needed as otherwise it would be too cold for life
- The gases in the atmosphere which absorb and trap this radiation are known as **greenhouse gases**, the most commonly known greenhouse gases are carbon dioxide and methane

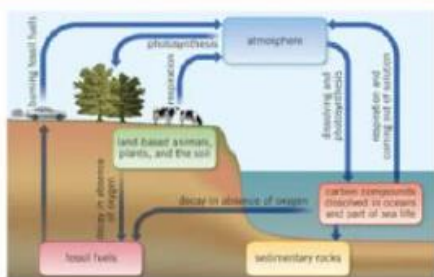


Global warming

- Global warming** is the gradual increase in temperature of the Earth
- This is closely linked to the rise in carbon dioxide levels in the atmosphere

The carbon cycle

- The **carbon cycle** is the processes by which carbon is naturally transferred to different stores through a range of natural processes
- Carbon is released into the atmosphere through **combustion** of **fossil fuels**, and animal **respiration**
- It is then reabsorbed by plants during **photosynthesis**



Climate change

- Long term changes to weather patterns are known as **climate change**
- This can cause the ice caps to melt, leading to sea levels rising and flooding of low level land
- Graphs alone cannot confirm that humans are the cause, but the majority of scientists now believe that human activity is a very likely cause
- We can help to prevent climate change by:
 - Using renewable energy resources
 - Using cars less
 - Buying and wasting less resources

Extracting metals

- Metals are a **natural resource**, with most being found joined with other elements in compounds
- Naturally occurring metals and their compounds are known as **minerals**
- An **ore** is a naturally occurring rock which contains enough of a mineral to be worth extracting
- An example of an ore is Bauxite, which contains aluminium hydroxide

- When metals are extracted they first have to be separated from other minerals in the ore, then they need to undergo a chemical reaction to separate them from the other element that they are joined to in a compound
- If a metal is below carbon in the reactivity series, it can be extracted by reacting it with carbon in a displacement reaction
- As carbon is more reactive it will take the place of the metal in the compound, leaving the metal on its own:
 - carbon + metal oxide → metal + carbon dioxide
 - carbon + copper oxide → copper + carbon dioxide
- If the metal is above carbon in the reactivity series, **electrolysis** can be used, this involves separating the metal by using electricity

Reactivity series

magnesium
aluminium
carbon
zinc
iron
lead
copper

Recycling

- Recycling** is the collecting and processing of materials that have been used so that the resources can be used again
- Recycling can have both advantages and disadvantages:

Advantages	Disadvantages
- Resources will last longer - It uses less energy than extracting new materials - It reduces waste and pollution	- Separating rubbish can be seen as a nuisance - The lorries collecting recycling produce pollution - Some materials are easier to recycle than others



Key terms

Make sure you can write definitions for these key terms.

atmosphere carbon cycle climate change combustion electrolysis fossil fuel global warming greenhouse gas mineral
natural resource ore photosynthesis recycling respiration

Science – Autumn Year 8

Elements and atoms

- An **element** is a substance that only contains one type of atom, it is found on the **Periodic Table**
- Each element has its own unique chemical symbol which is the same in every language, these are also found on the Periodic Table
- An **atom** is the smallest part of which an element can be broken down into
- As there are around 100 types of elements that can occur naturally, there are around 100 different atoms

Compounds

- Compounds** are formed when two or more different elements chemically bond together
- The compound will have different **physical properties** to the elements which make up the compound, for example water is a liquid, but it made from oxygen and hydrogen which are both gases
- Compounds are hard to separate and need a chemical reaction to do this
- When naming a compound, we always mention the metal first and the non metal second
- The name of the metal will not change but the name of the non metal will, for example oxygen can change to oxide
- Chemical formulae tells us how many atoms of each element are in the compound in relation to each other



- The small number tells us the number of each element which is in front of the number

Polymers

- Polymers** are long chains of groups of atoms which are repeated many times
- Natural polymers are not man-made and include wool, cotton, starch and rubber
- Synthetic polymers are man-made and include polythene, polystyrene and nylon

Groups and periods

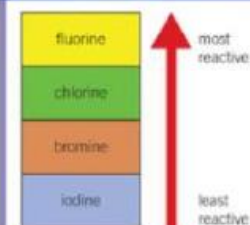
- Groups** are the columns in the Periodic Table, they go downwards
- Periods** are the rows in the Periodic Table, they go sideways
- Elements in the same group normally follow the same trends in properties such as melting point, boiling point and reactivity
- By placing these elements into these groups, scientists can make predictions about their properties

		group number																0
1	2																	He
Li	Be	B	C	N	O	F	Ne											
Na	Mg	Al	Si	P	S	Cl	Ar											
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr	
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe	
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn	
Fr	Ra																	

Group 0

- Group 0** elements are known as the **noble gases**
- They are all non metals with low melting and boiling points, meaning all are gases at room temperature
- The boiling point decreases going down the group
- All of the group 0 elements are unreactive
- When electricity is passed through the gas, they emit a brightly coloured light, this can be seen in neon signs

Halogens



Group 1

- Group 1** elements are also known as the **alkali metals**
- They share similar properties with other metals such as:
 - Being shiny when freshly cut
 - Being good conductors of electricity and heat
- Group 1 metals are much softer than other metals and also have much lower melting and boiling points
- Group 1 elements react with water to form alkali solutions

$\text{lithium} + \text{water} \rightarrow \text{lithium hydroxide} + \text{hydrogen}$
 $\text{metal} + \text{water} \rightarrow \text{metal hydroxide} + \text{hydrogen}$
- The further down the group that the metal is, the more vigorous the reaction will be. This is called a **trend**
- Another trend seen in Group 1 is with the boiling and melting points; the further down the group, the lower the boiling and melting points are

Group 7

- Group 7** elements are also known as the **halogens**
- They share similar properties with other non metals such as:
 - Having low melting and boiling points
 - Not conducting electricity
 - Moving down the groups the elements have an increased melting and boiling point
- The halogens also react in a similar way to one another, for example with iron:

$\text{iron} + \text{chlorine} \rightarrow \text{iron chloride}$
 $\text{iron} + \text{bromine} \rightarrow \text{iron bromide}$
- Halogens can undergo **displacement reactions**, this is where a more reactive halogen will take the place of a less reactive halogen
- The most reactive halogens are at the top of the group, and the least reactive halogens are at the bottom of the group
- If the most reactive halogen is on its own, it will take the place of the less reactive halogen in a compound

$\text{calcium bromide} + \text{chlorine} \rightarrow \text{calcium chloride} + \text{bromine}$



Key terms

Make sure you can write definitions for these key terms.

atom alkali metals compound displacement reaction element group Group 1 Group 7 Group 0 halogen
 noble gas period Periodic Table physical properties polymer trend

Science – Autumn Year 8

Energy adds up

The **law of conservation of energy** states that energy cannot be created or destroyed, only transferred.

$$\text{total energy before} = \text{total energy after}$$

Transferring energy

Light, sound, and electricity are ways of transferring energy between different stores.

Energy and temperature

- **Thermometers** measure temperature in degrees **Celsius (°C)**.
- Temperature measures the *average* energy.
- **Thermal energy** measures the *total* energy.

A warm bath has more thermal energy than a heated kettle, even though the kettle has a higher temperature.

Heating solids, liquids, and gases

- As we heat things the particles gain more **kinetic energy**, and vibrate more or faster.
- The energy needed to heat an object depends on the mass, material and temperature rise.

Equilibrium

Equilibrium is when objects have the same thermal energy.

Energy and power

Renewable resources

Renewable resources produce greenhouse gases when built, not when used, and will not run out.

For example, wind, tidal, wave, hydroelectric, geothermal, biomass, and solar powers.

The current created is sent to our offices, factories, and homes down long cables.

These fossil fuels produce **greenhouse gases**, such as carbon dioxide.

Fossil fuels are burned to heat water, which produces steam.

The steam turns a turbine, which spins a generator.

Non-renewable resources

Non-renewable resources include the **fossil fuels** coal, oil, and gas. These were formed millions of years ago from fossilised remains.

These are non-renewable because you cannot reuse them, and they will eventually run out.

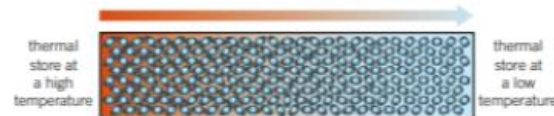
Coal, oil, or gas are used to run **thermal power stations**.

Particles

Thermal energy can be **transferred** by **conduction**, **convection** or **radiation**.

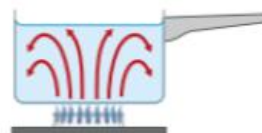
Conduction

- Particles collide into others when they vibrate.
- Occurs in solids.



Convection

- Occurs in liquids or gases.
- The part in contact with the heat source gets hotter. The particles move faster, causing them to become further apart, and a decrease in density.
- The hot part then rises, and cooler, denser parts fall and take its place at the bottom.
- They now heat, so the cycle continues. We call this a **convection current**.



Energy and power

Power is the rate of energy transfer – how much energy is transferred each second.

Energy bills

- Energy bills are measured in 1 **kilowatt** per hour (kWh).
For example, a 2kW device uses 4kWh.
- A bill covers the cost of the fuel used at the power station, the power station, staff, and infrastructure.
- To convert kWh this to joules, convert the time to seconds.
For example, $2000\text{J/s} \times 7200\text{s} = 14\,400\,000\text{J}$

Reducing bills

- Use fewer appliances or more efficient ones.
- Insulated houses lose less thermal energy so don't need to use as much power.

Work energy and machines

$$\text{Work done (J)} = \text{force (N)} \times \text{distance (m)}$$

Simple machines like **levers** and **gears** can make it easier to do work but you still get the energy out that you put in.

Radiation

- **Infrared radiation** transfers energy without particles – it is a wave.
- All objects emit radiation.
- The amount depends on their temperature and the surface (colour and rough/smooth).
- Radiation can be **absorbed** or **reflected**.

Food and fuels

- There is energy in the **chemical stores** associated with food and fuel.
- Energy is measured in **joules (J)**.
- You need different amounts of energy for different activities.

The energy in food varies.

For example:

- apple – 200kJ per 100g
- chips – 1000kJ per 100g

The energy used when we do things varies too.

For example:

- sitting – 6kJ per minute
- running – 60kJ per minute



Key terms

Make sure you can write definitions for these key terms.

absorb chemical store conduction convection convection current equilibrium fossil fuel gear greenhouse gas infrared radiation insulator joule kilowatt kinetic energy
law of conservation of energy lever non-renewable power station radiation renewable reflect thermal energy thermometer work

Art – Autumn Year 8

KS3 Year 8 Art Endangered Animals

This project covers the theme of endangered animals, focusing on a range of techniques and mediums. These range from tonal drawing and mark-making to painting and monoprinting.

Key words and terminology:

General terms:

Endangered: An endangered species is an animal at very high risk of extinction in the near future due to a rapid population decline or habitat loss

Climate change: the long-term, rapid heating of Earth's climate system

Artist: Sonny

South African-born street artist Sonny is globally recognised for his large-scale, hyper-realistic murals of endangered species. Sonny uses art to draw attention to threatened and endangered animals and raise funds for conservation.



Title page

A title page in art is the opening page of a portfolio/sketchbook that introduces the theme.

Colour wheel

Complementary colours: pairs of hues that sit directly opposite each other on the colour wheel, creating contrast

Primary colours: Red, Yellow and Blue.

Secondary colours : Purple, Orange and Green

Tertiary colours: made by mixing equal amounts of a primary colour and a secondary colour together

Artistic terms

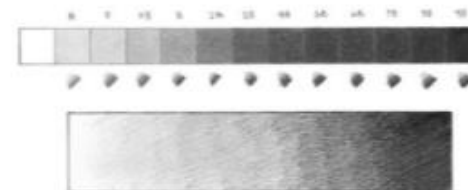
Shading: The lightness or darkness of a colour

Value: In art, value refers to the lightness or darkness of a colour, tone, or shade, independent of its hue

Texture: Texture refers to how something feels, including its appearance

Mark-making: the different lines, dots, marks, patterns, and textures we create in an artwork

Proportion: the comparative, harmonious relationship between the size and shape



Chroma: the purity, intensity or saturation of a colour

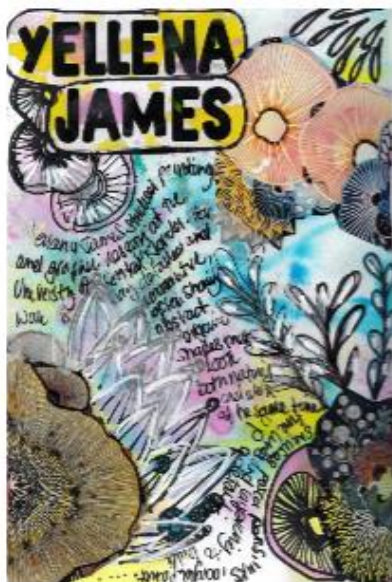
Saturation: the purity, intensity, or vividness of a color, defining how bright or dull a hue appears



Tech – Autumn Year 8

KS3 YEAR 8 TECH UNDER THE SEA TEXTILES

To develop a mixed media artwork inspired by underwater forms, demonstrating skills of watercolour techniques of soft, blended colours, refinement making use of various markers, and embroidering to develop textures.



Artist Yellena James

Yellena James grew up and attended art school in Sarajevo, Bosnia. At the age of 18, she moved to the U.S. After gaining her BA in painting and graphic design at the University of Central Florida, she eventually made her way to Portland, OR. Preferring pens, inks, markers, and acrylics, she combines complex abstract forms into dazzling images which take on lives of their own. Her colourful arrangements of organic shapes and tangled lines are at once floral and alien, organic and sci-fi. Each intimate world she creates seems to possess its own ethos and its own special ability to radiate emotion.

Terminology

Mixed media: an art form combining two or more different materials, such as paint, paper, ink, and thread.

Mark-making: the act of creating lines, dots, patterns, textures, and shapes on a surface.

Refine: to work continue work on an artwork to elevate the piece until it feels more complete.

Transparent: materials that allows the surface or details beneath to show through.

Opaque: a solid colour that completely covers something and prevents any detail from showing through.

Embroider: to decorate fabric by sewing patterns and colour using a needle and thread.



Elements of Art

Texture: the way that something feels.

Tactile texture: the actual physical feel of a surface.

Visual texture: the illusion of texture of a flat surface.

Complementary colours: colours that sit opposite each other on the colour wheel, that draw the eye when used together.

Harmonious colours: colours that lie alongside one another on the colour wheel, that creates a visual calmness.

Organic shape: rounded, fluid shapes inspired by things from nature.

Composition: the arrangement of elements to create a completed work that feels whole and appeals visually.

Food Preparation Year 8 knowledge organizer

Recipes:

Vegetable curry– Knife Skills Focus
Pizza Making – Yeast & Raising
Agents, Kneading, Proving and knock
back.

Carrot cake- adapting recipes to
make more nutritious.
Why am I learning this?

Students will be showing they can identify the main ingredients of their intended recipe for the user's needs and be able to express this using full sentences, Exploring how to write a Specification and Evaluation whilst using **ACCESSFM**.

Students will be working with a range of tools, techniques, processes, and equipment, showing that they understand their characteristics and apply their knowledge and understanding by responding to several aspects of the problem.

Vegetable Knife, Pizza tray, Muffin baking tray, vegetable peeler, green chopping board, mixing bowl.



- Knowing the five main nutrients of the Eat Well guide
- Boiling, Baking, Simmering, Mixing, Peeling, Grating, Kneading Proving
- Knock back

Learning Objectives

- To describe and define the five main nutrients and their functions for the body with specific food examples.
- Compare different vegetables and make informed decisions as to how they could be used in cooking.
- Adapting recipes to make more nutritious
- Follow a recipe independently and solve problems when you encounter them.
- Student can name and describe in detail the cooking methods/techniques used to make your pizza dough.
- Present food attractively and safely.



Key Words

- **Aesthetics**- the way something looks
- **Eat Well Guide**-Government recommended nutritional guidelines.
- **Specification**- Specific info on recipes
- **Evaluation**- Report on WWW/EBI
- **Kneading** – working dough to develop gluten
- **Proving** – allowing dough to rise
- **Health & Safety in the Kitchen**
- Use knives safely (claw grip & bridge hold)
- Avoid **cross-contamination** (separate raw and ready-to-eat foods)
- Wash hands regularly
- Tie hair back and wear appropriate clothing
- Use ovens and equipment carefully

Links to Other Subjects

- **English** – reading recipes, key vocabulary, instructions
- **Science** – chemical reactions, yeast fermentation, function of ingredients
- **Maths** – weighing, measuring, ratios, timing
- **Geography** – sourcing ingredients, food origins



YEAR 8 KNOWLEDGE ORGANISER

DEVISING DRAMA

Creating your own drama from a stimulus



Devising is about making decisions as a group to create original, meaningful drama.

1. STIMULUS

A stimulus is the starting point for your drama. It can be anything that inspires ideas and stories.

Examples:

- A photograph
- A piece of music
- A news story
- An object
- A quote
- An emotion or theme

Use your stimulus to explore ideas, characters, settings and events.





2. STAGING

Staging means how the performance is presented to the audience.

Think about:

- Where the audience is
- Where the actors perform
- How the space is used
- Entrances, exits and movement
- Set, props, costume, lighting and sound



3. FLASHBACK

A scene that shows something that happened in the past.

How to create it:

- Use a change in lighting
- Sound effect or music
- A freeze from the present
- A character tells the audience or another character

Helps the audience learn more about events or characters.



4. FLASHFORWARD

A scene that shows something that will happen in the future.

How to create it:

- Use a change in lighting
- Sound effect or music
- A character imagines or predicts
- A narrator or thought-track

Creates suspense and gives the audience a glimpse of what might happen.



5. PROXIMIXS

How close or far apart actors are from each other on stage.

Think about:

- Close – intimate, private, tense
- Far – distant, isolated, powerful
- Groupings – in pairs, small groups or as a whole cast
- Moving closer or further away to show relationships

Proxemics helps communicate feelings and relationships.



6. SPLIT STAGE

Using two or more areas of the stage at the same time.

How to use it:

- Show two scenes happening at once
- Compare different situations
- Show cause and effect
- Keep the audience engaged



7. LEVELS

Using height in your performance to create meaning.

Examples:

- High levels – standing tall, power, confidence
- Medium levels – grounded, natural, everyday
- Low levels – crouching, kneeling, lying down, weakness, fear, sadness



TOP TIPS FOR DEVISING



WORK TOGETHER
Listen and build on each other's ideas.



ASK QUESTIONS
What? Why? Who? Where? How?



BE CREATIVE
Take risks and try new ideas.



MAKE DECISIONS
Choose what works best for your performance.



REFLECT AND IMPROVE
Watch, discuss and make your drama even better!

REMEMBER:

- ✓ There are no wrong ideas in devising.
- ✓ The process is just as important as the performance.
- ✓ Your creativity brings your drama to life!

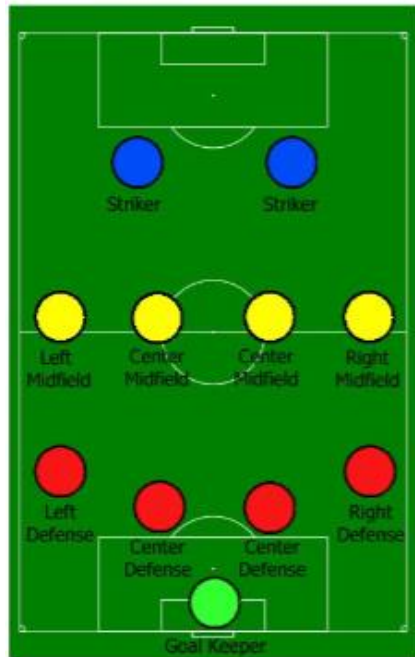


Subject specific words

TIER 1	TIER 2	TIER 3
Ambition, Inclusion, Respect	Explain	Challenge
Q & A	Dribbling	Comprehensively
Jump	Striking	Justify
Run	Feedback	Optimise
Ball	Naming of muscles	Bio-mechanics
Catch	Co ordination	Formation
Throw	Breaststroke	Tactics
Swim	Front crawl	Extension
Do	Backstroke	Technique
Fitness	Evaluate	Components
Bounce	Analise	Composition
Move	Describe	
Water	Discussion	
kick	Example	
pass	Explain	
Training	Skills	

PE – Autumn Year 8

FOOTBALL



Uniforce



Practice Clothes



Survey Censuses



Shin Guards



Soccer Socks



24

Decision Making, Formations, Set Pieces



Passing, Dribbling skills
Shooting, Tackling
Receiving, Heading



They need to use their whole body to pass the ball properly

2



Tell them to put their left foot to one side of the ball

E

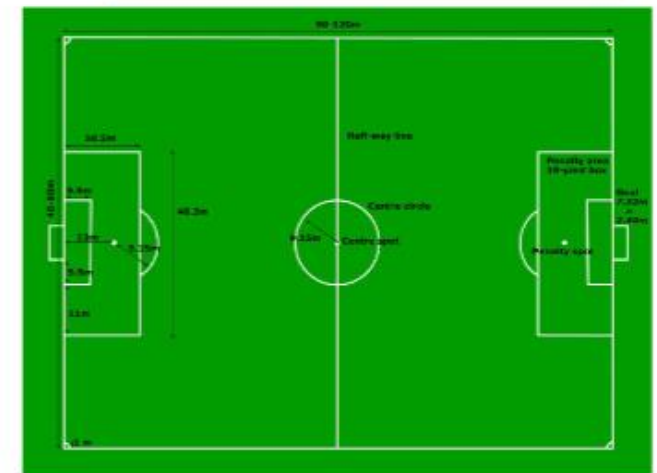


Then tell them to kick through the centre of the ball keeping it low and easy to control.

4



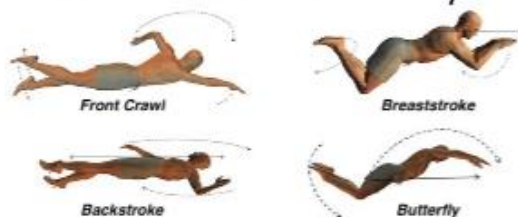
They must use their arms for balance and keep their head still



PE – Autumn Year 8

SWIMMING

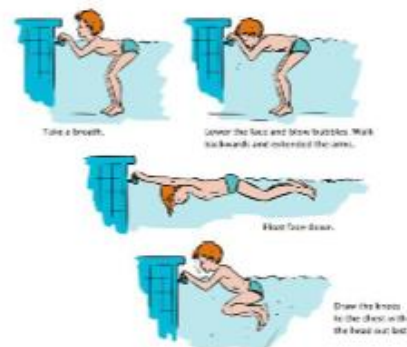
4 Main strokes
Front crawl, Breaststroke,
Backstroke and Butterfly.



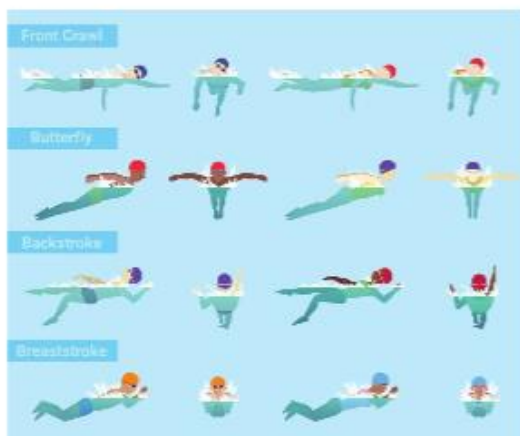
Basic Skills

- Breathing (Endurance)
- Breathing (Timing)
- Diving
- Flip-Turn
- Kicking

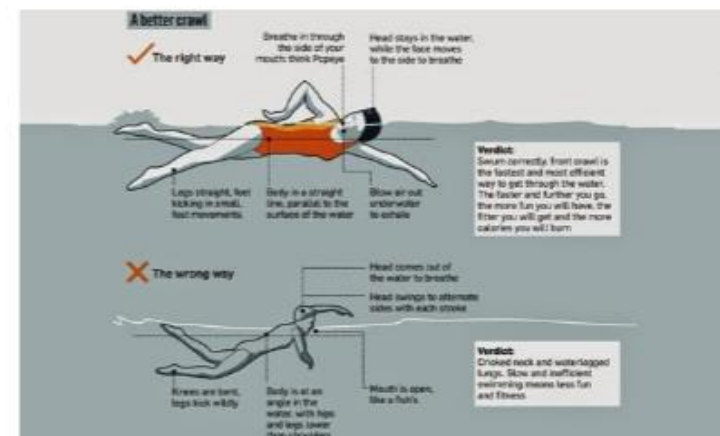
Water confidence



POOL RULES



SWIMMING SKILLS:
Essential swimming skills include being able to enter the water and resurface, controlling breathing, floating, turning, and moving to safety in the water, Treading water, sculling and exiting.



French – Autumn Year 8

Year 8 French Autumn Term

En ville (town)



Please also login to [LanguageNut.com](https://www.LanguageNut.com) to further deepen your revision.

J'habite ...		I live...	
dans une (grande/petite) maison	in a (big/small) house	dans un village	in a village
dans un (grand/petit) appartement	in a (big/small) flat	à la campagne	in the countryside
dans une ferme	in a farm	à la montagne	in the mountains
dans un château	in a castle	au bord de la mer	by the sea
dans une ville	in a town	dans le nord/sud/est/ouest	in the north/south/east/west
C'est...		It's...	
moderne	modern	ennuyeux	boring
historique	historic	joli	pretty
touristique	touristic	petit	small
cool/super	cool/super	grand	big
nul	rubish	industriel	industrial

il y a = *there is/are* il n'y a pas de = *there isn't/aren't*

un centre commercial	a shopping centre	une plage	a beach
un centre sportif	a sports/leisure centre	une piscine	a swimming pool
un cinéma	a cinema	une gare SNCF	a train station
un stade	a stadium	une gare routière	a bus station
un hôpital	a hospital	une poste	a post office
un supermarché	a supermarket	une banque	a bank
un marché	a market	une boulangerie	a bakery
un musée	a museum	une bibliothèque	a library
un parc	a park		
un zoo	a zoo		
un château	a castle		

habiter = *to live*

Present tense

ER

1. Je (I)

E

2. Tu (you)

ES

3. Il/elle (he/she)

E

4. Nous (we)

ONS

5. Vous (you lot)

EZ

6. Ils/elles (they)

ENT

On peut aller ...= You (one) can go...



au cinéma



à la piscine



aux restaurants



chez mon copain/

ma copine



à la plage



au café



au parc



chez moi



regarder un film



jouer au tennis



faire de la natation



écouter de la musique



manger un snack



visiter les musées

on peut...

= You (one) can...

on ne peut pas

= You cannot

Using three tenses:

Infinitive verb		Present	Past	Future
regarder		je regarde	j'ai regardé	je vais regarder
manger	to eat	je mange	j'ai mangé	je vais manger
danser	to dance	je danse	j'ai dansé	je vais danser
jouer	to play	je joue	j'ai joué	je vais jouer
parler	to speak	je parle	j'ai parlé	je vais parler
habiter	to live	j'habite	j'ai habité	je vais habiter
chanter	to sing	je chante	j'ai chanté	je vais chanter
aller	to go	je vais	je suis allé(e)	je vais aller
faire	to do	je fais	j'ai fait	je vais faire

French – Autumn Year 8

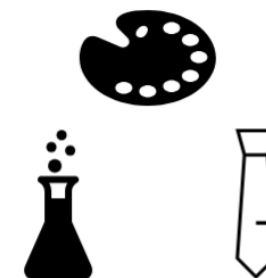
Qu'est-ce que tu <u>vas</u> faire ce weekend? What are your going to do this weekend?						
Future time phrase	pronoun	negative (ne/n')	aller (to go)	negative (pas)	Infinitive verb + activity	
Le weekend... At the weekend... Ce weekend... This weekend... Le weekend prochain... Next weekend... La semaine prochaine... Next week... Le lundi, mardi, mercredi, jeudi, vendredi, samedi, dimanche... On Monday etc..	je (I) tu (you) il/elle (he/she) nous (we) vous (you lot) ils/elles (they m/f)	ne n' ne	vais vas va allons allez vont	pas	aller au parc/ à la piscine/ aux restaurants manger un snack/au McDo regarder un film/un concert visiter les monuments/les musées faire du bowling/ du tennis/du vélo jouer au foot/ au rugby venir chez moi/chez mes grand-parents	
Conjunctions						
et and		mais but		aussi also	cependant however	

?

.

Spanish – Autumn Year 8

Me encanta	mi profesor de					tolerante	severo
Me gusta					muy	simpático	impaciente
Me mola		arte dramático			bastante	justo	serio
Me chifla		dibujo			un poco	antipática	amable
Me flipa		español			demasiado	divertida	paciente
Me interesa		francés				graciosa	injusta
		lengua	porque	explica bien			
		tecnología		tiene buen sentido del humor			
		educación física		nos pone muchos deberes			
		religión		aprendo mucho en sus clases			
No me gusta nada	mi profesora de	geografía		es mejor que		historia	matemáticas
Odio				es peor que	mi profe de	música	ciencias
No soporto a						química	empresariales
Estoy harta de						física	idiomas
Estoy hartos de							



¿Cómo es tu insti?

¿Qué instalaciones hay en tu insti?						
Location	Verb	Noun	Adjective	Conjunction	Negative	Noun
En mi insti	hay	una biblioteca	grande		no hay	biblioteca
		una piscina	pequeño/a	pero		piscina
En Mayfield		una pista de tenis				pista de tenis
			bontio/a	sin embargo		gimnasio
			feo/a		no tiene	comedor
Mi insti	tiene	un gimnasio				laboratorio
		un comedor	moderno/a	aunque		patio
		un laboratorio	a			campo de fútbol
		un patio	antiguo/a			salón de actos
		un campo de fútbol				aulas
		un salón de actos	limpio/a		no había	
En mi escuela primaria	había	muchas aulas	sucio/a			

Mi insti es bastante grande. En mi insti hay una biblioteca moderna y también tiene un gimnasio bonito pero no hay pista de tenis. En mi escuela primaria había un patio limpio.

Me encantan las ciencias porque es útil pero odio el dibujo porque no soy creative. Me chifla mi profesora de español ya que es simpática y tiene buen sentido del humor.

Se debe llevar uniforme. En mi opinión es muy feo.

Geography – Autumn Year 8

Key Terms this topic

Ageing Population – a country with a high proportion of people over the age of 65.

Birth Rate – the number of people born per 1000 of the population.

Death Rate – the number of people who die per 1000 of the population.

Densely Populated – many people living in an area.

Fertility Rate – the average number of babies born, per woman in her lifetime.

Life Expectancy – the average number of years a person is expected to live.

Population Density – the average number of people living in a place per square kilometre.

Population Growth Rate – a measure of how quickly the number of people in an area increases.

Sparsely Populated – few people living in an area.

GNI per person – a measure of people's wealth.

Sustainable – can be carried on into the future without harming people's quality of life, the economy or the environment.

Topic 1: Population

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



Key
■ Sparsely populated ■ Moderately populated ■ Densely populated



Factors affecting population density

Factors that can lead to dense populations include:

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

Factors that can lead to sparse populations include:

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

Migration: The movement of people from place to place.

Causes of Migration

Push factors

These are the reasons for why someone would want to move away from a place:

- Lack of services
- War
- Famine (starvation/food shortages)
- Few Jobs
- Natural Disasters

Pull factors

These are the reasons for why someone would want to move to a place:

- Higher quality of life (better homes, etc.)
- Access to education
- "Bright Lights" of the city
- Better healthcare
- Better job opportunities

Population Pyramids

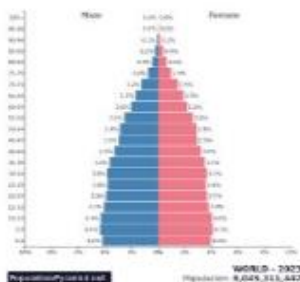
A population structure refers to the number of males and females in each age group that are found within a specific place. What does this mean?

A wide base means there are lots of young people and suggests a high birth rate.

A narrow base means a smaller proportion of young people, suggesting a low birth rate.

A thin middle, short pyramid means a smaller ageing population, suggesting that there is not a long-life expectancy.

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



Geography – Autumn Year 8

The Gambia: Case Study of a Youthful population

Causes:

People have large families due to the high infant mortality rate.
There is poor access to birth control and women don't have good education.

Responses:

Radio show to educate people about contraceptives.
Women given free education and access to birth control.



Japan: Case Study of an Ageing population

Causes:

Women are focusing on careers
Improvements in sex education

Effects:

Schools are being forced to close
There are concerns about the pressure on the healthcare system

Responses

Using robots to help in hospitals
Campaigns encouraging people to have more children

One-child policy

Introduced in 1970s China to reduce population growth.

People were fined if they had more than one child.

The one-child policy has prevented around 400 million births, but it was widely condemned by human rights groups for the way it operated, including the use of forced abortions and sterilisations.

It has resulted in a population imbalance with 37 million more men than women in 2020.

There are fears that in the future there will be a lack of young people/workers in China to look after their ageing population and pay taxes to provide social services.

In late 2015, the Chinese government announced it was to scrap the one-child policy. The decision was to allow families to have two children and was designed to redress the population imbalance and ensure there will be enough people of working age to look after China's ageing population. However, this didn't work and in 2021, China announced it would allow couples to have up to three children.

History – Autumn Year 8

Knowledge Organiser: Tudor & Stuart Britain (1485–1714) Revision of Year 7 History

Timeline of Key Events

Tudors (1485–1603)

- **1485** – Henry VII wins the Battle of Bosworth (end of Wars of the Roses)
- **1509** – Henry VIII becomes king
- **1534** – Act of Supremacy (Henry VIII creates Church of England)
- **1547** – Edward VI becomes king (Protestant reforms)
- **1553–1558** – Mary I rules (returns England to Catholicism)
- **1558–1603** – Elizabeth I rules (Elizabethan "Golden Age")
- **1588** – Defeat of the Spanish Armada

Stuarts (1603–1714)

- **1603** – James I becomes king (Union of Crowns)
- **1605** – Gunpowder Plot
- **1625–1649** – Charles I reigns (conflict with Parliament)
- **1642–1651** – English Civil War
- **1649** – Execution of Charles I
- **1649–1660** – Commonwealth (Oliver Cromwell rules)
- **1660** – Restoration of Charles II
- **1688** – Glorious Revolution
- **1689** – Bill of Rights passed
- **1707** – Act of Union (England and Scotland unite)

Key Monarchs & What to Know : Tudor Monarchs

Henry VII (1485–1509)

- Started the Tudor dynasty
- Brought stability after civil war
- Married Elizabeth of York to unite rival families

Henry VIII (1509–1547)

- Famous for his **six wives**
- Broke away from the Catholic Church
- Created the **Church of England**

Edward VI (1547–1553)

- Strongly Protestant
- Continued reforms started by Henry VIII

Mary I (1553–1558)

- Catholic queen
- Tried to reverse Protestant changes
- Nicknamed "**Bloody Mary**"

Elizabeth I (1558–1603)

- Established **religious settlement** (compromise)
- Defeated Spanish Armada (1588)
- Never married → "Virgin Queen"

Key Monarchs & What to Know : Stuart Monarchs

James I (1603–1625)

- First Stuart king of England
- Believed in **Divine Right of Kings**
- Faced religious tensions (Gunpowder Plot)
- There is evidence the plotters were framed

Charles I (1625–1649)

- Argued with Parliament
- Ruled without Parliament for 11 years
- Civil War
- Executed after losing Civil War

Charles II (1660–1685)

- Restored monarchy
- Known as the "Merry Monarch"
- Faced events like the Great Fire of London (1666)
- Worked with Parliament

The Republic: Oliver Cromwell (1599–1658)

- Leader of the **Parliamentary army** during the English Civil War
- Became **Lord Protector of England** (1653–1658)
- Helped make **Parliament more powerful but also** ruled without Parliament at times and used **strict military control**
- Closed theatres and banned some forms of entertainment (seen as harsh)
- His actions in **Ireland (e.g. Drogheda, 1649)** were extremely brutal
- Some argue he replaced one form of dictatorship (the king) with another

Key Themes

1. Religion

- Major conflict between **Catholics and Protestants**
- Henry VIII started religious change
- Elizabeth I created compromise
- Stuarts struggled with religious divisions

2. Power: Monarch vs Parliament

- Tudors had **strong monarchy**
- Stuarts faced challenges to their power
- After 1689 → **Parliament becomes more powerful**

3. Conflict & War

- **Spanish Armada (1588)** – England defeats Spain
- **English Civil War (1642–1651)** – Royalists vs Parliament

4. Society & Exploration

- Elizabethan era = **exploration (e.g. Sir Francis Drake)**
- Growth of trade and empire
- Scientific ideas begin to develop
- London grows in size and importance

History – Autumn Year 8

Key vocabulary

- Reformation** – Changes to the Church
- Catholic** – Traditional Christian Church led by Pope
- Protestant** – Christians who broke away from Catholic Church
- Divine Right** – Belief that kings are chosen by God
- Civil War** – War between people in the same country
- Republic/Commonwealth** – Country without a king/queen
- Restoration** – Return of monarchy in 1660
- Bill of Rights (1689)** – Law limiting power of monarch

Section 1: Key Timeline (Fill in the gaps)

Complete the timeline with the missing events:

- 1.1485 – _____
- 2.1534 – _____
- 3.1588 – _____
- 4.1605 – _____
- 5.1642 – _____
- 6.1660 – _____
- 7.1688 – _____

Monarch	Key Fact
Henry VII	
Henry VIII	
Edward VI	
Mary I	
Elizabeth I	

Can you remember what you have learnt?

- Try these activities.
- Check [you](#) answers after

3) Match each monarch to the correct description:

- A. Charles I
- B. James I
- C. Charles II
- D. William & Mary
- E. James II

Descriptions:

1. ___ Restored monarchy after Cromwell
2. ___ Executed after Civil War
3. ___ First Stuart king of England
4. ___ Forced to flee in Glorious Revolution
5. ___ Accepted limits on royal power

4 True or False Circle the correct answer:

1.Elizabeth I was a Catholic.

True / False

2.Charles I was executed.

True / False

3.The Tudors had weak control over England.

True / False

4.Parliament became more powerful after 1689.

True / False

5: Short Answer Questions

Answer in full sentences:

1.Why did Henry VIII break away from the Catholic Church?

1.What happened in the Spanish Armada (1588)?

1.Why did the English Civil War begin?

Section 6: Challenge Question

Explain **how power changed between the Tudors and Stuarts.**

RE – Autumn Year 8

Forgiveness:

A decision to excuse a fault, an accident/ mistake. To accept someone's apology for a wrongdoing.

Christian forgiveness:

Jesus said, "forgive 70 times 7", "forgive them father".

The Lord's Prayer says, "forgive us our sins".

Reconciliation:

The restoration of a friendship/ relationship.

Examples of reconciliation:

Catholic confession- confessing sins to a priest to fix their relationship with God.

Charity work (food banks/ street pastors).

Following Jesus' instructions (e.g. "love thy neighbour").

Heaven:

Eternal bliss. The ideal afterlife for Christians. Where they will be able to return to heaven with God. This is seen as a **reward if Christians live a good life.**

"Today, you will be with me in Paradise" and "in my father's house, there are many rooms".

Hell:

Eternal pain and punishment. Suffering for eternity with the Devil/ Satan, demons and other damned souls. Christians view Hell as the place they will go if they **live a life of sin.**

"Fiery furnace"

Catholics believe when they die, if their soul hasn't done enough good/ bad deeds, God will send them to Purgatory, a place to wait for God's mercy before your final judgement.

Year 8 knowledge organiser (1)

The Holy Trinity.

The Holy Trinity describes the three parts to the one Christian God: The Father (the creator of the world), the son, Jesus (God incarnate) and the divine Holy Spirit.

The ten commandments.

Moses was given the 10 commandments by God, as a **list of instructions or laws/ rules** for people to follow in order to live a sin free life. The idea was that if people followed the 10 commandments, upon death they would be allowed to return to the kingdom of Heaven with God.

The 10 commandments are:

"Do not Kill"

"Do not steal"

"Do not worship false idols"

"Honor your mother and father"

"Do not commit adultery"

"You shall keep the Sabbath day holy"

"You shall have no other God's before me"

"You shall not bear false witness"

"You shall not covet"

"You shall not say the Lord's name in vain".

The Garden of Eden.

The Garden of Eden is what many Christians believe to be Heaven or the Kingdom of God.

This is described in the book of Genesis as a place full of animals, life and resources. The Garden is where God told Adam and Eve they could live forever, as long as they didn't eat the forbidden fruit.

The nature of God in the Abrahamic faiths:

Christians/ Muslims/ Jews believe that God has **many different qualities**. As no-one knows what God looks like, as He is a spirit, they describe his personality/ characteristics instead, or they use stories from holy texts to support the understanding of God's nature.

They believe God is **perfect** and that these qualities are **proof** of God's perfection.

Some of God's qualities are not possible for humans. Other qualities are possible and provide examples that religious believers should aspire to be like/ follow.

Omnipotent: All-powerful

Christian quote- "God created the heavens and the Earth"

Omnibenevolent: All-loving

Christian quote- "Love thy neighbour", "love your enemies"

Omniscient: All-seeing or omnipresent.

Christian quote- "God is well aware of what you do"

Transcendent- Beyond human comprehension.

Eternal: Always and forever. No end

Christian quote- "in the beginning was the word and the word was God"

Merciful: forgiving and compassionate.

Christian quote- "be merciful as your father is merciful"

The Garden of Eden.

Christians want to try and replicate the Garden on Earth by looking after/ protecting God's creation.

Christian creation story.

In the book of Genesis (meaning origin- The first book of the Bible) it describes how many Christians believe the universe was created.

- In the beginning God created the heavens and the Earth (explaining to Christians that heaven is a place that cannot be achieved on Earth).
- God then said **"let there be light"** on day one of creation God created day and night (teaching how God is powerful (omnipotent) and is the creator of all the universe).
- On the other days of creation it mentions God creating the sky, water, land, plants, all creatures including humans.
- Genesis teaches to **"rule over the fish in the sea"** (Dominion- the world is for humans to use or to **"work it and take care of it"** (Stewardship- To take care of all God's creation) to be rewarded in the afterlife).
- Adam and Eve (teaching Christians that God is the father to all of creation and loves us all equally **"made in God's image"**).
- God created humans in his likeness teaching Christians that they are important/ superior creatures.
- God instructed for Adam and Eve to **"be fruitful and increase in number"** explaining that it is human duty to fill the earth with life.
- Some Christians understand the creation story literally, as it is written in the Bible, they believe it to be the true word of God and therefore must be a fact.
- Some Christians understand the creation story liberally, meaning the world wasn't necessarily created in 7 days, but it does show God's omnipotence and clearly explains to Christians that they need to fulfil their duties, to be rewarded with Heaven.
- Some Christians believe that the Big Bang is real, but unlike scientists, they believe God demonstrated his power and made the Big Bang happen, which taught about the beginning of the universe.
- In the Bible it says, **"in the beginning was the word and the word was God"**.

Agape- God's love for everyone, Christian love. The love that God has for all of his creation.

"Love thy neighbour", "love your enemies"

How do/ can Christians show Agape?

Christian Aid/ Amnesty international- Christian run charities that work to help and support those around the world who need help with money, food, shelter and many other resources.

God's Greatest commandment.

Although not part of the 10 commandments, Christians believe that God's greatest commandment is **"to love God above all else and love your neighbour"**.

Incarnation.

Christians see Jesus as both **completely God and completely human.**

They believe in the holy trinity so God, the spirit became human in the form of Jesus, which completes the Holy Trinity.

Some Christians understand Jesus as God incarnate (meaning God in the flesh) although Jesus is also God's son.

Christians believe God had to become human, or offer his only son as a sacrifice to humanity.

Jesus' life and purpose was to die, to help forgive humans for their sins and to fix their relationship with God.

By God becoming human, it helped deepen his connection with humanity and by him sacrificing his son, it proved he loved and forgave his creation for their behaviour.

In the Bible it says, "in the beginning was the word and the word was God", then in the New Testament it says, "the word became flesh".

The Bible.

Christians believe the Bible is the **true word of God.**

It is split into two parts:

The Old Testament- consists of stories about creation and the end of the world.

The New Testament- the gospels and stories of Jesus.

Some Christians interpret the Bible and it's stories literally, so believe God created the world in 7 days and that **"he created the Heavens and the Earth"**.

Some believe the Bible stories are more metaphorical and teach Christians how they should act/ behave **"put man in the garden to work and care for it"**.

Others prefer to focus on the stories of Jesus and it helps Christians understand God's loving/ forgiving nature.



Mayfield School
Computer Science Department

ONLINE WELLBEING

KNOWLEDGE ORGANISER



Online activity can affect our emotions, thinking, and behaviour, so we need strategies to manage it safely and responsibly.



PCR REMINDER



PREVENT

- Profiles on private
- Don't add people you do not know
- Don't share personal information



CAUTION

- Watch out for any unpleasant content/unexpected requests



REPORT

- Get a second opinion
- Report to Parents, School, CEOP
- If in imminent danger – **POLICE!**

Stay safe. Stay smart. Stay in control.

FIGHT, FLIGHT, FREEZE ONLINE

Our brains react to stress online just like in real life.

FIGHT



Feeling angry or wanting to argue or fight back.

FLIGHT



Avoiding the situation, leaving a chat, or going offline.

FREEZE



Feeling stuck, overwhelmed or unable to respond.



Pause. Take a breath. Think before you react. Choose a response that keeps you safe and calm.

SCREEN TIME & WELLBEING

Too much screen time can affect you:



Sleep

Less sleep can make you feel tired, moody and less able to focus.



Focus

Constant distractions make it harder to concentrate on important things.



Mood

Comparing, FOMO and negative content can lower mood and self-esteem.



Physical Health

Too much sitting can affect your body and energy levels.



Balance is key: time online should fit around your sleep, learning, hobbies and real life.

WHY PLATFORMS KEEP YOU SCROLLING

Apps and websites are designed to keep your attention.



Endless Scroll

Keeps loading more content so you stay for longer.



Notifications

Grab your attention and pull you back in.



Likes & Rewards

Small hits of dopamine can feel good and become addictive.



Algorithms

Show content they think you will keep watching.



Knowing this helps you make better choices.



REMEMBER

You have control over your online world. Make choices that protect your mind, body and happiness. It's okay to take breaks. Real life matters.

STRATEGIES FOR WELLBEING



Take Breaks

Step away regularly. Even 5–10 minutes helps your mind reset.



Reduce Notifications

Turn off non-essential notifications to reduce distractions.



See Green

Spend time outdoors. Nature helps lower stress and improve mood.



Good Sleep Habits

Avoid screens before bed. Good sleep helps you think and feel better.



Real Life Connections

Talk, meet up, and do things you enjoy offline with others.



Small changes. Big impact. You've got this.

NEED HELP?



Talk to someone you trust:



Parents / Carers



Teacher
School
Safeguarding Team



CEOP
(ceop.police.uk)



Police
(999 in an emergency)

“Your wellbeing matters more than any notification.”

