

Year 9 Homework Booklet

*“Knowledge is power. Information is liberating.
Education is the premise of progress,
in every society, in every family”*

Nelson Mandela

Learning Cycle 2



THE
KING ALFRED
SCHOOL
An Academy

Name

Tutor

Belong Believe Be Proud

Homework Timetable

It is expected that you complete one full page in your workbook as a minimum. Students should spend around 20 minutes on homework for each subject. Tutors will check your Knowledge Organiser homework during Tutor Time. They will be looking for a full page of work on the correct subjects of the Knowledge Organiser completed with no gaps, as well as for purple pen ticks/corrections and good presentation. Your writing needs to be neat and legible with H/W, Title and Date underlined with a ruler at the top of the page. If your tutor feels that any of these elements are not up to standard, your tutor will enter you for a homework support session that same day.

In addition to the timetable below students should also complete 30 minutes per week using online Sparx Maths.

	WEEK 1	WEEK 2
Monday	Maths Drama	Spanish Religious Studies
Tuesday	English History	Computing PE
Wednesday		
Thursday	Science French	Science Design Technology
Friday	Art Music	English Geography

Your Homework Booklet

Learning Cycle 2

This is your homework booklet, in your homework booklet you will find a knowledge organiser for each subject that you are going to study in learning cycle 2, these are a summary of the most important pieces of information that you need to know.

You will be expected to learn all this information and complete activities in your workbook.

Contents

Homework Booklet.....	2
Knowledge Quiz.....	3
Online Maths Work	4
How to Use your Knowledge Organiser for Homework.....	5
Look, Cover, Write, Check, Correct	6
Look, Cover, Mind Map, Check, Correct	7
Look, Cover, Transform, Check, Correct.....	8
Maths	9-12
English	13-14
Science	15-22
History	23-24
Geography.....	25-26
Religious Studies.....	27-28
Modern Foreign Languages.....	29-30
Music.....	31-32
Drama.....	33-34
Design and Technology.....	35-40
Physical Education	41
Computer Science	42-46
Art.....	47-48
Notes.....	49-52



Belong Believe Be Proud



Your Homework Booklet

At TKASA, we place a great emphasis on the importance of reading in order to accelerate the development of your vocabulary and fluency in communication. Not only that, a good book will teach you more about the world around you and help you empathise with others. We recommend a minimum of 20 minutes of reading per day. Have a look at the reading list below for some inspiration

The Hunger Games

Suzanne Collins

Northern Lights

Philip Pullman

The Fault in Our Stars

John Green

The Lord of the Rings

J. R. R. Tolkien

Twilight

Stephenie Meyer

To Kill a Mocking Bird

Harper Lee

When Hitler Stole Pink Rabbit

Judith Kerr

Maggot Moon

Sally Gardner

Shug

Jenny Han

Jane Eyre

Charlotte Brontë

A Street Cat Named Bob

James Bowen

Stargirl

Jerry Spinelli

Roll of Thunder Hear My Cry

Mildred D. Taylor

Swallows and Amazons

Arthur Ransome

The Wheel of Surya

Jamila Gavin

The Earthsea Quartet

Ursula K. Le Guin

Never Say Die

Anthony Horowitz

Treasure Island

Robert Louis Stevenson

Fly-By-Night

Frances Hardinge

Mortal Engines

Philip Reeve

Geek Girl

Holly Smale

Flour Babies

Anne Fine

My Family and Other Animals

Gerald Durrell

Holes

Louis Sachar

Cirque Du Freak

Darren Shan

Cow Girl

G R Gemin

The Girl Who Drank the Moon

Kelly Barnhill



Belong Believe Be Proud



Belong Believe Be Proud

Knowledge Quiz

Your teacher will quiz you on your knowledge organiser 3 times each learning cycle to check how well you are doing your homework.

The 'Mark' box must be used to record your score from each quiz.

	Maths	English	Science	Geography
QUIZ 1	/	/	/	/
QUIZ 2	/	/	/	/
QUIZ 3	/	/	/	/

	History	MFL	Drama	Music	PE
QUIZ 1	/	/	/	/	/
QUIZ 2	/	/	/	/	/
QUIZ 3	/	/	/	/	/

	Art	DT	Comp	RS
QUIZ 1	/	/	/	/
QUIZ 2	/	/	/	/
QUIZ 3	/	/	/	/



Belong Believe Be Proud



Belong Believe Be Proud

Learning Cycle 2

Online Maths Work

Learning Cycle 2

Learning Cycle 2	Topic practised	Signed by parent	Signed by Maths Teacher
Week 1			
Week 2			
Week 3			
Week 4			
Week 5			
Week 6			
Week 7			
Week 8			
Week 9			



Belong Believe Be Proud



Belong Believe Be Proud

How to use your knowledge organiser for homework

The Knowledge Organisers are designed to help you learn a wide range of knowledge which in turn will mean you are more prepared for your lessons as well as the new style GCSEs that you will sit in the future.

For homework you should use your knowledge organiser to complete one of our accepted strategies in your workbook you should either

- **Write**
- **Mind Map**
- **Transform**

Do not just copy into your workbook!

Here are some tips on how you can use your workbook

Your tutor will check your workbook each week



Belong Believe Be Proud



Belong Believe Be Proud

Learning Cycle 2

Look, cover Write, check, Correct

First

Look through and read the information on a section of your knowledge organiser



Then

Cover the section so you can no longer see the information

Cycle 1 in History will focus on: An introduction to studying history, a depth study enquiry called *why did William win the Battle of Hastings?* and a short enquiry into why the Church was so important in medieval times.


Key Words and Definitions	
Chronology	The order in which events happened
Primary Source	Something from the time being studied for example if you were studying The Battle of Hastings a shield from the Saxon shield Wall would be primary source
Interpretation	A view of the past created from primary sources e.g. a museum exhibition about the Battle of Hastings is an interpretation.
Cause	A reason why something happened
Consequence	A result of an event or change
Significance	A measure of how much impact an event, person or change has had.
Saxon	Most of the English people before 1066
Norman	People from Normandy, France e.g. William the Conqueror
Tactics	A planned action to help you achieve success
Cavalry	Soldiers on horseback
Infantry	Soldiers on foot
The Church	Christian organisation led by the Pope. England was a catholic country until the 16th century

Topic 1 What is History?

History is finding out about the past by using the evidence that has been left behind. It is also about asking questions and sorting out answers. In history we also look at how why interpretations are created

Here are the different **time periods** we use to divide up British History:

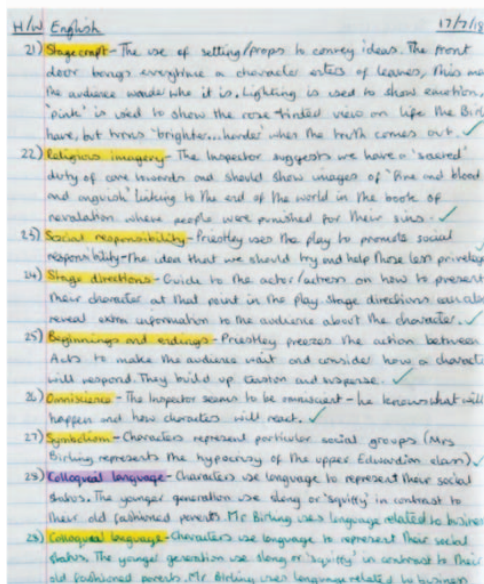
55BC - 410AD	Roman Britain
410 - 1066	Saxon and Viking Britain
1066 - 1485	Medieval Britain
1485 - 1603	Tudor Britain
1603 - 1714	Stuart Britain
1714 - 1837	Georgian Britain
1837 - 1901	Victorian Britain
1901 - 1910	Edwardian Britain



The five ways a historian can measure significance

- 1 Did the person or event **matter to the people at the time?**
- 2 Did the person or event **affect a large number or a small but important group** of people?
- 3 Did the person or event **cause change** and if so, how **great** was the change?
- 4 Was the change **long lasting or short term?**
- 5 Is the person or event **still seen as important today?**

Interpretations are versions of history. Authors, film makers, and museum designers are all producers of interpretations. There are different interpretations of the same event or person.



Next

Try and write out the key definitions or facts that you need to know

Now

Uncover the section of your knowledge organiser and check how correct you were

Finally

Correct anything that you wrote down that was incorrect

Belong Believe Be Proud



Belong Believe Be Proud

Look, cover Mind Map, check, Correct

First

Look through and read the information on a section of your knowledge organiser



Then

Cover the section so you can no longer see the information

History

Cycle 1 in History will focus on: An introduction to studying history, a depth study enquiry called *why did William win the Battle of Hastings?* and a short enquiry into why the Church was so important in medieval times.

Key Words and Definitions	
Chronology	The order in which events happened
Primary Source	Something from the time being studied for example if you were studying The Battle of Hastings a shield from the Saxon shield Wall would be primary source
Interpretation	A view of the past created from primary sources e.g. a museum exhibition about the Battle of Hastings is an interpretation.
Cause	A reason why something happened
Consequence	A result of an event or change
Significance	A measure of how much impact an event, person or change has had.
Saxon	Most of the English people before 1066
Norman	People from Normandy, France e.g. William the Conqueror
Tactics	A planned action to help you achieve success
Cavalry	Soldiers on horseback
Infantry	Soldiers on foot
The Church	Christian organisation led by the Pope. England was a catholic country until the 16th century

Topic 1
What is History?

History is finding out about the past by using the evidence that has been left behind. It is also about asking questions and sorting out answers. In history we also look at how why interpretations are created

Here are the different **time periods** we use to divide up British History:

55BC - 410AD	Roman Britain
410 - 1066	Saxon and Viking Britain
1066 - 1485	Medieval Britain
1485 - 1603	Tudor Britain
1603 - 1714	Stuart Britain
1714 - 1837	Georgian Britain
1837 - 1901	Victorian Britain
1901 - 1910	Edwardian Britain

The five ways a historian can measure significance

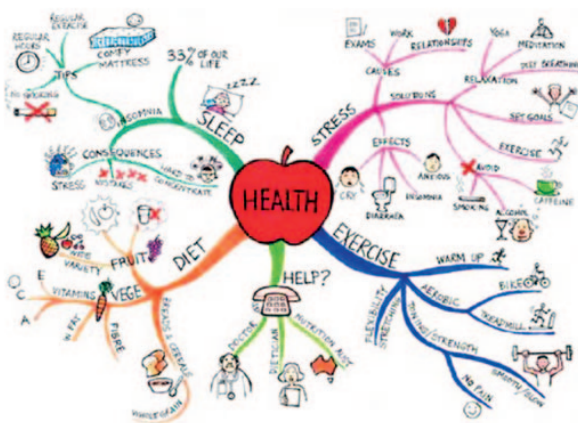
- Did the person or event **matter to the people at the time?**
- Did the person or event **affect a large number or a small but important group** of people?
- Did the person or event **cause change** and if so, **how great** was the change?
- Was the change **long lasting or short term?**
- Is the person or event **still seen as important** today?

Interpretations are versions of history. Authors, film makers, and museum designers are all producers of interpretations. There are different interpretations of the same event or person.



Next

Create a mind map that maps out everything from your knowledge organiser using keywords, colour and images



Now

Uncover the section of your knowledge organiser and check how correct you were

Finally

Correct anything that you wrote down that was incorrect

Belong Believe Be Proud



Belong Believe Be Proud

Look, cover Transform, check, Correct

First

Look through and read the information on a section of your knowledge organiser



Then

Cover the section so you can no longer see the information

Cycle 1 in History will focus on: An introduction to studying history, a depth study enquiry called *why did William win the Battle of Hastings?* and a short enquiry into why the Church was so important in medieval times.


Key Words and Definitions	
Chronology	The order in which events happened
Primary Source	Something from the time being studied for example if you were studying The Battle of Hastings a shield from the Saxon shield Wall would be primary source
Interpretation	A view of the past created from primary sources e.g. a museum exhibition about the Battle of Hastings is an interpretation.
Cause	A reason why something happened
Consequence	A result of an event or change
Significance	A measure of how much impact an event, person or change has had.
Saxon	Most of the English people before 1066
Norman	People from Normandy, France e.g. William the Conqueror
Tactics	A planned action to help you achieve success
Cavalry	Soldiers on horseback
Infantry	Soldiers on foot
The Church	Christian organisation led by the Pope. England was a catholic country until the 16th century

Topic 1 What is History?

History is finding out about the past by using the evidence that has been left behind. It is also about asking questions and sorting out answers. In history we also look at how why interpretations are created

Here are the different **time periods** we use to divide up British History:

55BC - 410AD	Roman Britain
410 - 1066	Saxon and Viking Britain
1066 - 1485	Medieval Britain
1485 - 1603	Tudor Britain
1603 - 1714	Stuart Britain
1714 - 1837	Georgian Britain
1837 - 1901	Victorian Britain
1901 - 1910	Edwardian Britain



The five ways a historian can measure significance

- 1 Did the person or event **matter to the people at the time?**
- 2 Did the person or event **affect a large number or a small but important group** of people?
- 3 Did the person or event **cause change** and if so, how **great** was the change?
- 4 Was the change **long lasting or short term?**
- 5 Is the person or event **still seen as important today?**

Interpretations are versions of history. Authors, film makers, and museum designers are all producers of interpretations. There are different interpretations of the same event or person.

Kings	Play	Chess	On	Fine	Glass	Sets
K	P	C	F	K	G	S
I	H	L	A	I	E	P
N	Y	A	M	N	N	E
G	L	S	I	G	U	C
D	L	S	L	D	S	I
O	O	S	Y	O	S	E
M	M	S		M		S

Next

Transform the information on the knowledge organiser into either a mnemonic or series of images

Now

Uncover the section of your knowledge organiser and check how correct you were

Finally

Correct anything that you wrote down that was incorrect

WHY SKETCHNOTES...

- SIMPLIFIES THE COMPLEX
- ENABLES CONNECTION and SYNTHESIS OF IDEAS
- ORGANIZES and SUMMARIZES insights
- RAISES ATTENTION and ENGAGEMENT
- EASES CLARITY and comprehension
- HELPS IN SENSE MAKING
- QUICK GRASP and BETTER RETENTION
- EASY sharing & COMMUNICATION

visual METAPHORS allow brain to fill gaps

A TOOL FOR IMMERSIVE LEARNING

TEXT INCREASES 10% 35% 25%

QUICK GRASP and BETTER RETENTION

JOHN MEDINA "BRAIN RULES"

Belong Believe Be Proud



Belong Believe Be Proud


Maths


Belong Believe Be Proud


Cycle 2 in **Maths** initially looks at completing various constructions and congruent triangles. We then move on to problem solving with number including fractions and writing numbers in standard form. Later in the cycle we investigate using percentages and maths with money which includes calculating interest, tax and exchange rates.

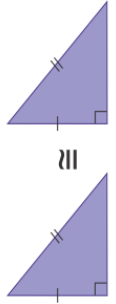
CONSTRUCTIONS AND CONGRUENCY – KEY WORDS AND DEFINITIONS	
Acute	an angle less than 90 degrees
Obtuse	an angles greater than 90 but smaller than 180 degrees
Reflex	an angle greater than 180 but smaller then 360 degrees
Right-angle	a 90 degree angle
Locus	a path formed by a point which moves according to a rule
Equidistant	the same distance
Perpendicular	lines that are at right angles (90°) to each other
Bisector	the line that divides something into two equal parts.
Arc	part of the circumference of a circle
Congruent	the same shape and size
SSS	side, side, side
SAS	side, angle, side
ASA	angle, side, angle
RHS	right-angle, hypotenuse, side

Topic 1:
Constructions & Congruency

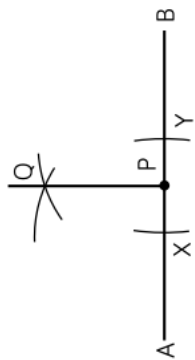
SSS (Side – Side – Side)

 3 sides are the same

SAS (Side – Angle – Side)

 2 sides and the included angle are the same

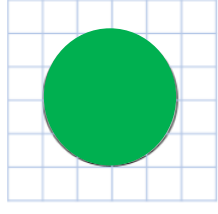
ASA (Angle – Side – Angle)

 2 angles and the included side are the same

RHS (Right angle – Hypotenuse – Side)

 Hypotenuse and one side are the same

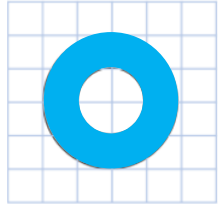
A perpendicular bisector
NOTE: do not erase your construction lines!



A locus of points less than 2 cm away



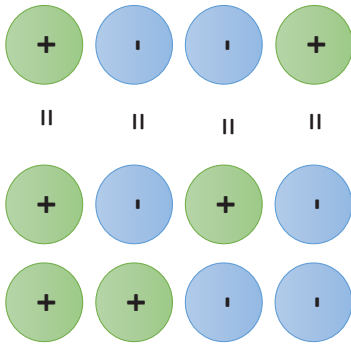
A locus of points less than 2 cm but more than 1cm away



Maths

Belong Believe Be Proud

Rules with multiplying and dividing negative numbers



Topic 2:
Numbers

Example of an equivalent improper and mixed fraction

$$\frac{7}{3} = 2\frac{1}{3}$$

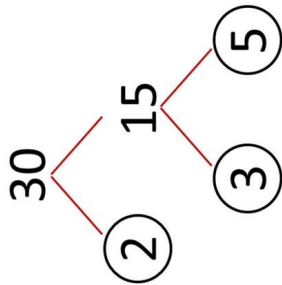
Improper Fraction Mixed Fraction

Writing a number in standard form:

$$420000000 = 4.2 \times 10^9$$

Must be 1 to 10 (but not 10!) Must be x 10

In order to get a number in a product of its **prime factors** you must keep breaking the number down into it's factors until you reach prime numbers

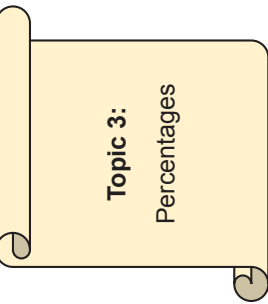


So 30 as a product of primes is $2 \times 3 \times 5$

NUMBERS – KEY WORDS AND DEFINITIONS

Integer	a whole number
Rational	a number that can be made by dividing two integers
Surd	a number that can't be simplified to remove a square root
Quotient	the answer after we divide one number by another
Product	the answer when two or more values are multiplied together
Sum	the result of adding two or more numbers
Difference	the result of subtracting one number from another
Prime	a number with only 2 factors, 1 and itself
Factor	numbers we can multiply together to get another number e.g. 4 is a factor of 8
Multiple	the result of multiplying two numbers e.g. 6 is a multiple of 2
Numerator	the top number in a fraction which shows how many parts we have
Denominator	the bottom number in a fraction which shows how many equal parts we are dividing into
Improper fraction	a fraction where the numerator is greater than the denominator
Mixed number	a whole number and a fraction combined
Standard form	scientific notation used to write big and small numbers
Index (power)	how many times to use the number in a multiplication

Topic 3:
Percentages



FINDING PERCENTAGES OF AMOUNTS

- 50% → ÷2
- 25% → ÷4
- 75% → ÷4, x3
- 10% → ÷10
- 5% → ÷20
- 1% → ÷100

Here are some quick ways to find common percentages

PERCENTAGES – KEY WORDS AND DEFINITIONS

Percentage	parts per 100
Multiplier	the number that you are multiplying by
Profit	income made minus all expenses
Loss	amount lost
Original	the first amount before any changes
Percentage change	the difference in the quantity to its initial value

PERCENTAGE CHANGE

Here is the formula to calculate any percentage change:

$$\text{percentage change} = \frac{\text{change}}{\text{original}} \times 100$$

Percentage change can be a **profit** (increase) or a **loss** (decrease)

QUESTION: original

Last year Seb paid £568 for his car insurance. new
This year he has to pay £715 for his car insurance.
Work out the percentage increase in his car insurance.
Give your answer to 1 decimal place.

SOLUTION:

$$\begin{aligned} \text{change in price} &= 715 - 568 = \text{£}147 \\ \text{percentage change} &= \frac{147}{568} \times 100 = 25.9\% \end{aligned}$$

MULTIPLIERS

Multipliers are a quick way to find percentages of amounts as well as percentage increase and decrease

Example 1

Find 22% of 500
 $500 \times 0.22 = 110$

Example 2

Increase 500 by 22%
 $500 \times 1.22 = 610$

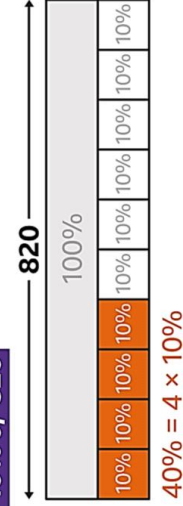
Example 3

Decrease 500 by 22%
 $500 \times 0.88 = 440$

PERCENTAGES OF AMOUNTS

40% of 820

Bar models can be useful to calculate percentages



Maths

Belong Believe Be Proud

VAT (Value added tax)

In the UK, VAT is set at 20%.
The prices of the goods in the table shown do not include VAT.

Item	Price
Headphones	£40
Smart Watch	£225
Television	£582.50

Calculate the price of the goods including VAT.

Have a go in your books at calculating 20% of each item and adding it on to find the price of the items including VAT

Topic 4: Maths with Money

MATHS WITH MONEY – KEY WORDS AND DEFINITIONS

Interest	an amount of money increases over time
Annual	something that happens once a year
Simple interest	interest calculated as a percent of the original loan
Compound interest	where interest is calculated on both the amount borrowed plus previous interest
Per annum	per year
Tax	money that the government collects based on income, sales, and other activities
VAT	a tax added onto items that are purchased
Currency	money
Exchange rate	tells us the value of £1 in terms of another country's currency

EXCHANGE RATES

Annie is going on holiday to Spain.
The exchange rate is £1 = €1.15
She changes £200 into euros (€)
How many euros does she receive?

Multiply the amount by the exchange rate
 $£200 \times 1.15 = €230$

Do not forget
currency symbols!

NOTE: if you were converting from euros back to pounds you would **divide** by the exchange rate

COMPOUND INTEREST

Jack invests £300 into a savings account at 5% compound interest for 2 years. He works out how much he will have at the of the 2 years.

Method 1

5% of 300 = £15
Balance after 1 year = £315
5% of 315 = £15.75
Balance after 2 years = £330.75

Method 2: multiplier method

$300 \times 1.05^2 =$
£330.75

Notice both methods get the same answer

Year 9 English Cycle 2 will focus on studying a selection of poetry within themes of Conflict and Cultures. You will develop your understanding and ability to interpret and engage with a range of poetry focused on conflict and culture. You will also develop your comparative writing skills.



Key words for analysing language and imagery	
Theme	Repeated ideas within a poem – ie: love/conflict
Tone	The mood created in the poem
Metaphor	A comparison of two things for effect
Extended metaphor	When a metaphor is developed and continued more than once in the poem
Personification	When an object/thing is given human characteristics
Oxymoron	A phrase that contradicts itself
Connotations	Feelings or ideas associated with a word
Graphic imagery	Vivid or violent pictures created by words



Key words for analysing structure	
Form	How a poem is structured or organised on the page
Stanza	A group of lines (sometimes wrongly called a verse)
Quatrain	Four lines in a stanza
Couplet	Two lines in a stanza
Juxtaposition	Contrasting ideas placed side by side
Anaphora	When the first word of a stanza is the same across different stanzas
Volta	A turning point in a poem.
Enjambment	A sentence or phrase that runs onto the next line – no punctuation at the end of a line
Caesura	Punctuation in the middle of a line



Key words for analysing sound	
Alliteration	Words beginning with the same sounds (usually same letters)
Sibilance	Repeated 's' sounds in a poem.
Plosive sounds	Repeated 'p' and 'b' sounds in a poem
Fricative sounds	Repeated 'f' and 'v' sounds in a poem
Meter	Meter is the rhythm of syllables in a line of verse or in a stanza of a poem

English

Belong Believe Be Proud

The Romantic Poet

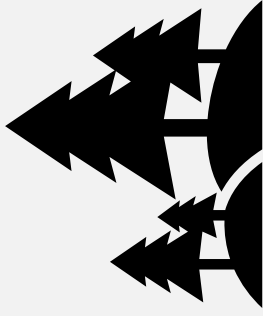
When: Circa 1750 – 1850

Who: William Blake, William Wordsworth, Samuel Coleridge, Lord Byron, Percy Bysshe Shelley, John Keats.

What: The term **Romanticism** refers to a movement of artists and writers between the 18th and 19th century who did not like the way the Establishment, (Church, Government and Monarchy) was changing society – in particular the expansion of the Industrial Revolution which sacrificed Nature and exploited the poor in favour of profit. The Romantic poets were inspired by a desire for liberty and felt it was their duty to use poetry to inform and inspire others, thereby changing society.

The Romantic poet believed:

- Nature not industrialisation.
- The power of imagination.
- Children are pure and innocent and should be protected.
- Equality for all.
- Being political spokespersons – advocating revolution to achieve their aims.



Vocabulary

Culture	The ideas, customs and social behaviour of people or society.
Conflict	Struggle or opposition. From the Latin: <i>confligere</i> - con- 'together' + <i>fligere</i> 'to strike'.
Oppression	People being governed in an unfair and cruel way.
Corruption	Illegal, bad or dishonest behaviour, especially by people in positions of power.
Tyrannical	Exercising power in a cruel, controlling way.
Patriotism	Love and pride for your country

Literacy

Brackets

()

Both brackets and dashes are used to add additional information to your writing.

William Wordsworth (a Romantic poet) believed that nature was very important.

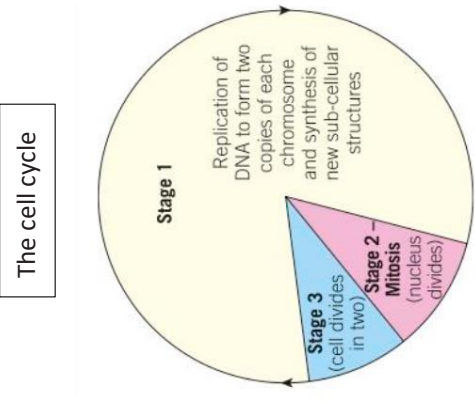
Dashes

-

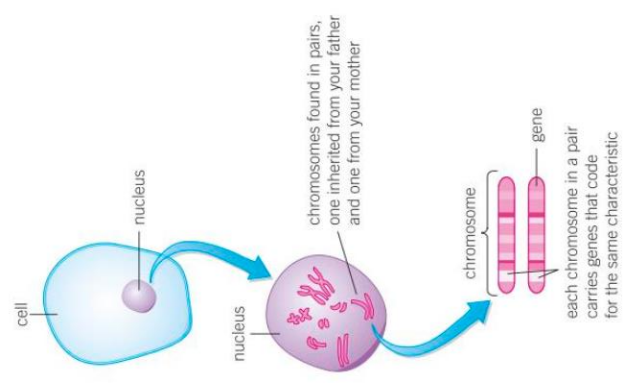
The Romantic poets – Wordsworth, Keats and Blake – believed in equality for all.

In cycle 2 of your biology lessons you will focus on how cell divides during growth and how are cell differentiated into different types of tissues.

Key word	Definition
Differentiation	When a cell becomes a specialised cell
Mitosis	Cell division where one set of chromosomes are pulled to each end of the cell and the nucleus divides forming two identical daughter cells.
Stem cell	Cells that are undifferentiated but can turn into any type of cell
Cell cycle	Three- stage process of cell division in a body cell that involves mitosis and results in the formation of two identical cells
Cloning	The production of identical offspring by asexual reproduction.
Zygote	The single new cell formed by the fusion of gametes in sexual reproduction.
Embryonic stem cell	Stem cells from an early embryo that can differentiate to form the specialised cells of the body.
Adult stem cell	Stem cells from an adult that can differentiate to form the specialised cells of the body.
Therapeutic cloning	A process where an embryo is produced that is genetically identical to the parent so that cells can then be used in medical treatments.
Gene	A part of a chromosome that determine a characteristic of the organism.
Chromosome	A thread-like structure made of proteins that is found in the nucleus of most living cells, carrying genetic information in the form of genes.



The cell cycle



Chromosomes

- Process by which body cells divide. Three stages:
1. Copy: Two copies of chromosomes and internal cell structures
 2. Mitosis: Copies of chromosomes move and form two nuclei
 3. Split: cytoplasm and cell membranes split to make two identical cells

Science - Biology

Belong Believe Be Proud

In cycle 2 of your biology lessons you will focus on how cell divides during growth and how are cell differentiated into different types of tissues.

Stem Cells	Type	Properties	Uses
Undifferentiated cell of an organism which is capable of giving rise to many more cells of same type, or other specialised cells can arise from differentiation	Embryonic stem cells	These are balls of cells that divide from fertilised egg. Can divide into most types of human cells.	Can be cloned and researchers are trying to differentiate into insulin producing cells to help diabetes or spinal nerve cells to help with paralysis
	Adult stem cells	Can divide into limited number of cells e.g. bone marrow stem cells can form blood cells.	Can be used to treat leukemia and related bone/blood cancers through bone marrow transplants.
	Meristem	Can differentiate into any type of plant cell throughout plant's life	Can clone rare species to prevent extinction. Crops with special features can be cloned e.g. disease resistance

Ethical considerations of using embryonic stem cells

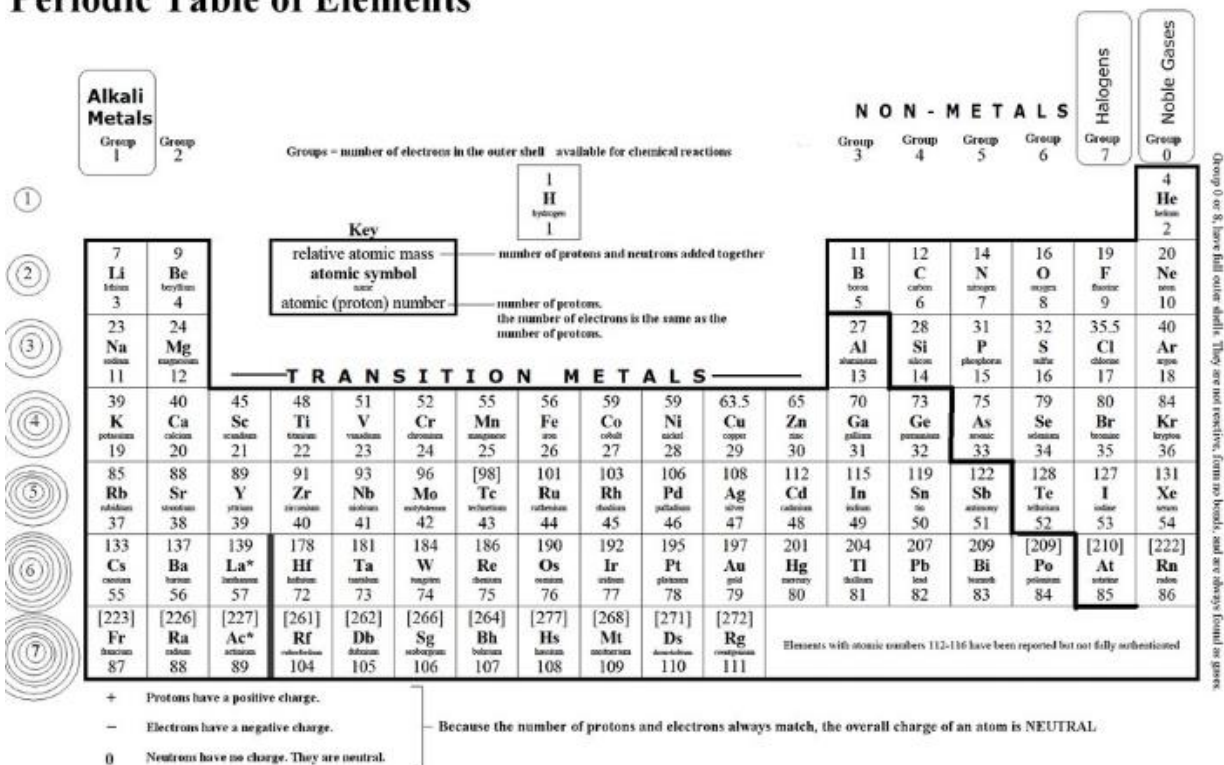
Pros	Treatment of some conditions (spinal cord injuries, diabetes, heart after damage in the heart attack, eye sight in blind and damaged bone marrow and cartilage) Therapeutic cloning can produce cells with the same genes as patient's cell so they are not rejected.
Cons	Ethical and religious objections as often come from aborted/unused embryos as it can be seen as destroying potential life. Can transfer viruses held within cells.

Science - Biology

Belong Believe Be Proud

In cycle 2 of your chemistry lessons you will focus on how periodic table organises atoms and elements and how to use it.

Periodic Table of Elements



Key word	Definition
Mendeleev	Russian scientist that formed the modern periodic table. His big idea was to leave gaps for new elements.
Periodic table	A table of the chemical elements arranged in order of atomic number, usually in rows, so that elements with similar properties appear in vertical columns.
Transition metals	Any of the metallic elements occupying a central block of the periodic table.
Alkali metals	Elements of group 1 of the periodic table.
Universal indicator	A mixture of indicators that can change to a range of colours to show how strongly acidic or alkaline liquids or solutions are.
Melting point	The temperature at which a given solid will turn into a liquid.
Boiling point	The temperature at which a given liquid will turn into a gas.
Halogens	Elements of group 7 of the periodic table.
Displacement reactions	A reaction in which a more reactive element takes the place of a less reaction element.
Reactivity Group	How vigorous a reaction is.
Period	Column in the periodic table that tells you the number of electrons in the outer shell
Metal	Row in the periodic table that tells you the number of shells atom has
Non- metal	An element that loses electrons to form full outer shell and becomes positive ion An element that gains electrons to form negative ion/ shares electrons to form full outer shell

Science - Chemistry

Belong Believe Be Proud

In cycle 2 of your chemistry lessons you will focus on how periodic table organises atoms and elements and how to use it.

Alkali Metals

The alkali metals (group 1 elements) are soft, very reactive metals. They all have one electron in their outer shell, making them very reactive. They are low density. As you go down the group, they become more reactive. They get bigger and it is easier to lose an electron that is further away from the nucleus.

Development of the Periodic Table

In the early 1800s, elements were arranged by atomic mass. The periodic table was not complete because some of the elements had not been found. Some elements were put in the wrong group.

Dimitri Mendeleev (1869) left gaps in the periodic table. He put them in order of atomic mass. The gaps show that he believed there was some undiscovered elements. He was right! Once found, they fitted in the pattern.

The Modern Periodic Table

Elements are in order of atomic mass/proton number. It shows where the metals and non-metals are. Metals are on the left and non-metals on the right. The columns show the groups. The group number shows the number of electrons in the outer shell. The rows are periods – each period shows another full shell of electrons. The periodic table can be used to predict the reactivity of elements.

Metals and Non-metals

They are found at the left part of the periodic table. Non-metals are at the right of the table.

Metals

Are strong, malleable, good conductors of electricity and heat. They bond metallically.

Non-Metals

Are dull, brittle, and not always solids at room temperature.

Reactions of alkali metals

They form ionic compounds with non-metals. The react with water and produce hydrogen.

E.g.
lithium + water →
lithium hydroxide + water



They react with chlorine and produce salt.

E.g.
lithium + chlorine →
lithium chloride



They react with oxygen to form metal oxides.

Group 7 Elements and Noble Gases

Halogens

The halogens are non-metals: fluorine, chlorine, bromine, iodine. As you go down the group they become less reactive. It is harder to gain an extra electron because its outer shell is further away from the nucleus. The melting and boiling points also become higher.

Noble Gases

The noble gases (group 0 elements) include: helium, neon and argon. They are un-reactive as they have full outer shells, which makes them very stable. They are all colourless gases at room temperature.

The boiling points all increase as they go down the group – they have greater intermolecular forces because of the increase in the number of electrons.

In cycle 2 of your physics lessons you will focus on measuring and using energy.

Key word	Definition
Energy transfer	The conversion of one form of energy into another, or the movement of energy from one place to another.
Chemical energy	Energy stored in the bonds of chemical compounds (atoms and molecules). It is released in a chemical reaction. Batteries, biomass, petroleum, natural gas, and coal are examples of stored chemical energy.
Kinetic energy	The energy of motion/movement, it can be seen as the movement of an object, particle, or set of particles.
Gravitational potential energy	Energy an object possesses because of its position in a gravitational field.
Elastic potential energy	Energy is potential energy stored as a result of deformation of an elastic object, such as the stretching of a spring.
Thermal energy	Heat energy, the internal energy of an object due to the kinetic energy of its atoms and/or molecules.
Conservation of energy	Energy cannot be created or destroyed.
Work	The energy transferred by a force. Work done (J) = Force (N) x distance moved in the direction of the force (m).
Friction	The force opposing the motion of two solid surfaces in contact.
Gravitational field strength	The force of gravity on an object of mass 1kg in N/kg (Newton's per kilogram). It is also the acceleration of a free falling object.
Dissipation of energy	The energy that is not usefully transferred is stored in less useful ways.
Useful energy	Energy transferred to where it is wanted in a way that is wanted.
Wasted energy	Energy that is not usefully transferred.
Efficiency	Useful energy transferred by a device ÷ total energy supplied to the device.
Power	The energy transformed or transferred per second. Unit of power is the watt (W).

Topic P1:- Conservation and dissipation of energy

Science - Physics

Belong Believe Be Proud

Science - Physics

Belong Believe Be Proud

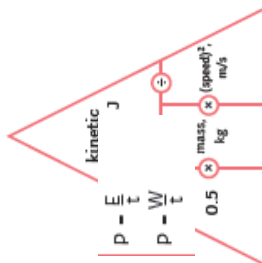
Kinetic and Potential Energy Stores

Movement Energy

kinetic energy = $\frac{1}{2} \times \text{mass} \times \text{speed}^2$

$$E_k = \frac{1}{2}mv^2$$

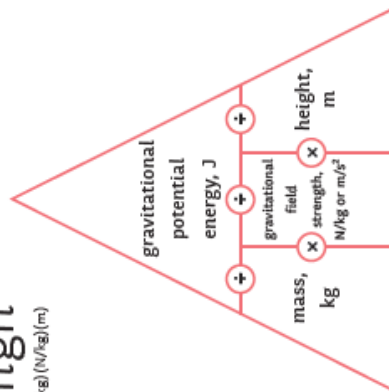
(J)



When something is off the ground, it has gravitational potential energy
 gravitational potential energy = mass x gravitational field strength x height

$$E_p = mgh$$

(J)



When an object falls, it loses gravitational potential energy and gains kinetic energy.

Stretching an object will give it elastic potential energy.

elastic potential energy = $\frac{1}{2} \times \text{spring constant} \times \text{extension}^2$

$$E_e = \frac{1}{2}ke^2$$

(J)

Equations

$$E = \frac{1}{2}mv^2$$

$$E_p = mgh$$

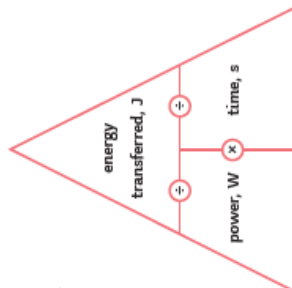
$$E_e = \frac{1}{2}ke^2$$

Power

Power is the rate of transfer of energy – the amount of work done in a given time.

power = energy transferred ÷ time

$$P (W) = E (J) \div t (s)$$



Energy Stores and Systems

Energy Stores	
kinetic	Moving objects have kinetic energy.
thermal	All objects have thermal energy.
chemical	Anything that can release energy during a chemical reaction.
elastic potential	Things that are stretched.
gravitational potential	Anything that is raised.
electrostatic	Charges that attract or repel.
magnetic	Magnets that attract or repel.
nuclear	The nucleus of an atom releases energy.

Energy can be transferred in the following ways:

mechanically – when work is done;

electrically – when moving charge does work;

heating – when energy is transferred from a hotter object to a colder object.

In cycle 2 of your physics lessons you will focus on how the thermal energy is transferred and how this knowledge can be used to make our homes more energy efficient.

Key word	Definition
Conduction	The process by which heat or electricity is directly transmitted through the material of a substance.
Thermal conductivity	Property of a material that determines the energy transfer through it by conduction.
Insulation	The process of keeping heat, sound, or electricity from spreading. It is also used to describe the materials that do this.
Specific heat capacity	Energy needed to raise the temperature of 1kg of a substance by 1°C.
Cavity wall insulation	An insulation used to reduce heat loss through a cavity wall by filling the air space with material that stops/inhibits heat transfer.
Loft insulation	The space between the roof and the ceiling where materials are laid across to reduce the rate of heat transfer out of the roof.
Double-glazed windows	An insulation that consists of two or three glass window panes separated by a vacuum or gas filled space to reduce heat transfer across a part of the building.
Solar heating panel	Sealed panel designed to use sunlight to heat water running through it.

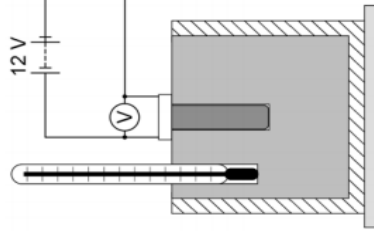
Insulation – reduces the amount of heat lost. In your home, you can prevent heat loss in a number of ways:

- Thick walls
- Thermal insulation such as:
 - Loft insulation (reducing convection)
 - Cavity walls (reduced conduction and convection)
 - Double glazing (reduces conduction)

In cycle 2 of your physics lessons you will focus on how the thermal energy is transferred and how this knowledge can be used to make our homes more energy efficient.

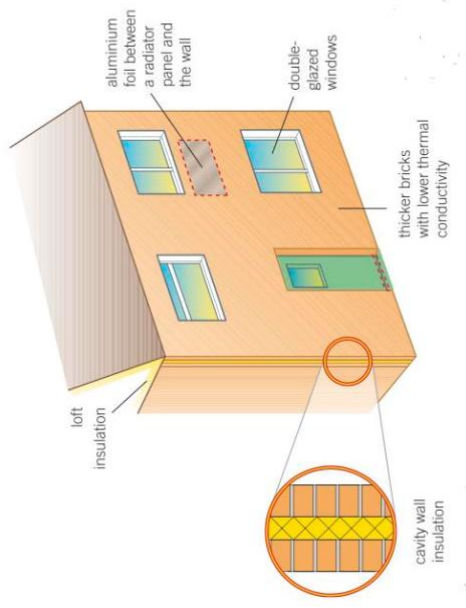
Method

1. Measure and record the mass of the copper block in kg.
2. Wrap the insulation around the block.
3. Place the heater in the larger hole in the block.
4. Connect the ammeter, power pack and heater in series.
5. Connect the voltmeter across the heater.



6. Use the pipette to put a small amount of water in the other hole.
7. Put the thermometer in this hole.
8. Set the power pack to 12 V. Switch on the power pack to turn on the heater.
9. Record the ammeter and voltmeter readings. These shouldn't change during the experiment.
10. Measure the temperature and start the stopwatch.
11. Record the temperature every minute for 10 minutes.
12. Calculate the power of the heater in watts.
Power in watts = potential difference in volts x current in amps
13. Calculate the energy transferred (work done) by the heater. To do this, multiply the time in seconds by the power of the heater. Record these values in your table.

14. Plot a graph of the temperature in °C against work done in J.



15. Draw a line of best fit.
Take care as the beginning of the graph may be curved.
16. Calculate the gradient of the straight part of your graph.
The gradient = change in temperature rise in °C/change in work done in J
17. The **heat capacity** of the copper block is calculated using the formula:

$$\frac{1}{\text{gradient}}$$

It is the amount of heat energy in J needed to increase the temperature by 1°C.

18. The **specific heat capacity** of copper is the amount of heat energy in J needed to increase the temperature of 1kg of copper by 1°C.
Calculate the specific heat capacity of the copper block using the equation:
Change in thermal energy in J = mass in kg x specific heat capacity in J/kg/°C x temperature change.

Science - Physics

Belong Believe Be Proud

Year 9 Cycle 2 Knowledge Organiser

Cycle 2 in History will focus on the history behind the events we call The Holocaust which was the slaughter of millions of people by the Nazis during the Second World War. We will also examine its impact on the world today.

Key words and definitions

Anti-Semitism	a hatred of Jews
Aryan	a member of the white race, non-Jewish
boycott	to refuse to trade or do business with
Concentration camp	a prison camp set up by the Nazis to hold their enemies, including Jews
Depression	a decline in the economy
dictator	Someone who has total control of a country e.g. Hitler and Mussolini
ethnic	belonging to a particular racial group
Fascists	extreme nationalist, often racist groups
fuhrer	German word for leader; title used by Hitler
genocide	systematic killing of people from one group
Gestapo	Nazi secret police
Judaism	religion of the Jewish people
Nazi	a member of the German political party led by Adolf Hitler
propaganda	False or misleading information given out to spread a certain point of view
Resistance	name given to people who fought secretly against German occupation of their country
SS	Hitler's black shirted personal bodyguard
sterilise	to operate on a man or woman in order to make them incapable of having children
visa	document letting someone leave or enter a country

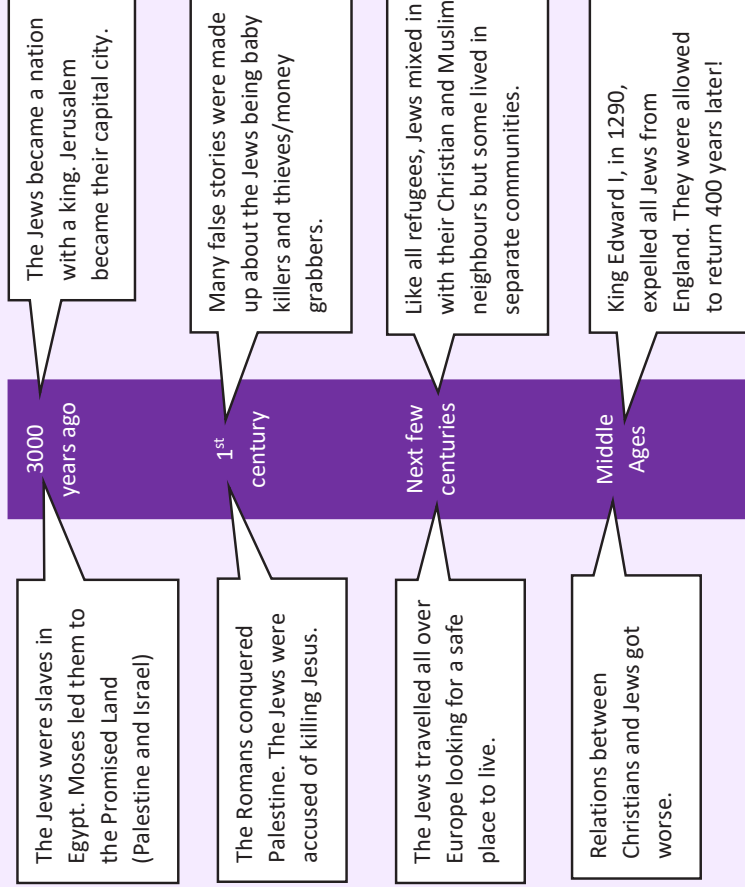
TIER 2 Vocabulary

portray = to describe someone or something in words or pictures.

Jewish life in Europe before the Nazis and anti-Semitism over time

You will be investigating what it was like to live in the Jewish communities of Europe before the Nazis. You will also be able to place the Nazi's actions in context of the history of anti-Semitism.

The story of the Jews and development of anti-Semitism over time



History

Belong Believe Be Proud

Jewish life in Germany before WW2

- Adolf Hitler became Chancellor of Germany in January 1933.
- In April 1933, the Nazis organised a BOYCOTT of Jewish businesses. Nazi SA men painted the Star of David on Jewish shop windows.
- From 1933 to 1938, the Nazis passed laws which gradually took away the rights of Jewish people in Germany. These included: *banning Jewish teachers from schools, not allowing Jewish children to play with Aryan children, banning Jewish children from sports clubs, marking park benches 'Not for Jews' and 'Only for Jews'*.
- In 1935, the Nazis passed the **Nuremberg Laws** which took away Jewish people's citizenship, banned marriage between Jews and Aryan Germans and made marriages which had already taken place illegal.
- In November 1938 **Kristallnacht** happened. This was the 'Night of the Broken Glass'. 117 synagogues were destroyed and 7500 shops were looted; 91 Jews were killed. It happened because a Jewish man had shot a German official dead in Paris. The Nazis wanted revenge.
- The Nazis used propaganda to persuade German children that Jews were bad. Jewish children were humiliated in front of other children. Children's books made the Jews monsters and evil characters.
- The Nazis used propaganda to persuade adult Germans that the Jews were responsible for all of Germany's problems.

How did the Holocaust happen?

The Nazis called the murder of the Jews **The Final Solution**. Therefore, they did attempt other methods before the mass killings in the death camps. Here are a series of facts which help us to explain **how** the Holocaust happened:

1. WW2 began in September 1939 when Hitler invaded Poland. This brought 350,000 Polish Jews under Nazi control.
2. The Nazis invaded the USSR (Russia) in 1941. This brought millions more Jews under Nazi control.
3. The Nazis used **SS Einsatzgruppen** to kill Jewish people. Their job was to follow the army as they invaded and then round up and shoot Jews.
4. Jews were forced to live in walled off areas of cities called **ghettos**. In Warsaw, for example, 500,000 Jews were packed into a tiny area of streets and houses. Conditions were terrible – no heat, light, running water, little food but plenty of dirt and disease.
5. Concentration camps had been used by the Nazis since 1933 but by 1939 some had been turned into **Death Camps**.
6. In January 1942 a 'final solution' to the Jewish problem was organised which involved the murder of the Jews in gas chambers which were built in camps such as Auschwitz in Poland,

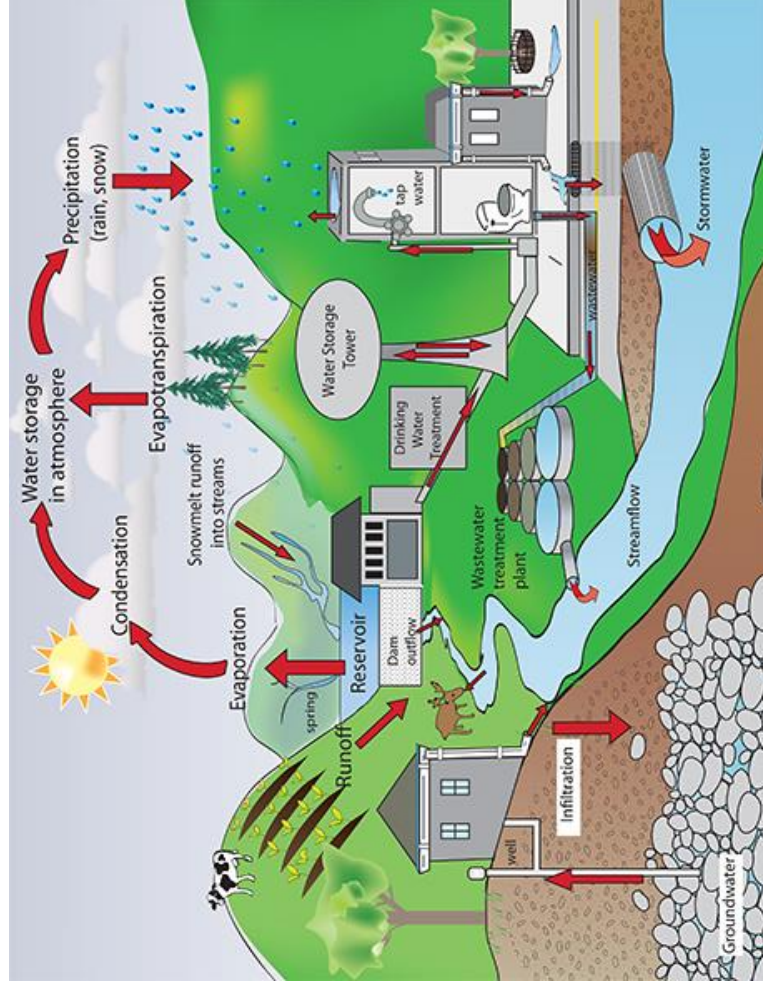
History

Belong Believe Be Proud

Cycle 2 Knowledge Organiser

Cycle 2 in Yr 9 Geography will focus on the hydrosphere. We will look at the different stores and flows in the water cycle and drainage basin system, considering concepts, processes and issues related to each stage.

Topic 1: Water cycle & drainage basin system



This diagram shows the **drainage basin system**, including human and physical elements. This is an **open system** – it has inputs and outputs. If the diagram showed water flowing into the oceans and being evaporated back into the atmosphere it would show the **water cycle**, which is a **closed system**, with no inputs and outputs.

Key words and definitions

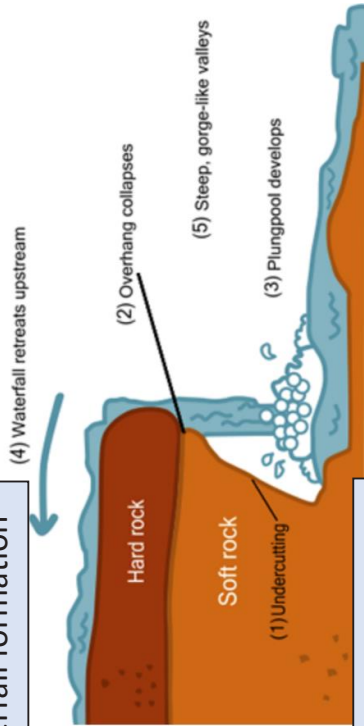
Hydrosphere	Water on our planet on the surface, underground and in the air.
Drainage basin	The area of land around a river drained by the river and its tributaries .
River	Water flowing in a channel.
Tributary	A smaller river that flows into a bigger river.
Water cycle	The path that all water follows as it moves around the Earth.
Runoff	Water flowing over the land.
Evapotranspiration	Evaporation from plants.
Infiltration	Water soaks into the ground.
Groundwater	Water stored below ground in saturated rocks and soils.
Permeable	Water can soak through (opposite is impermeable)
Weathering	Rocks break down in a place through physical and chemical processes .
Erosion	Land is worn down and material transported away through abrasion , attrition , solution and hydraulic action .
Transportation	Material is moved through processes of traction , saltation , suspension and solution .
Deposition	Material which was being transported is dropped.
Coast	Where land and sea meet.
Ocean	Large store of salty water.

Geography

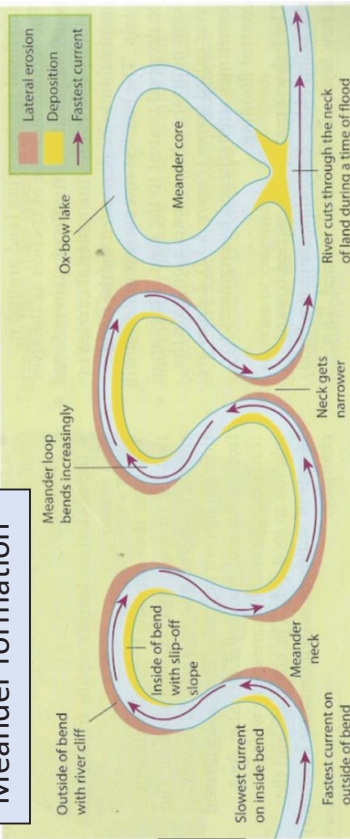
Belong Believe Be Proud

Topic 2: Rivers & floods

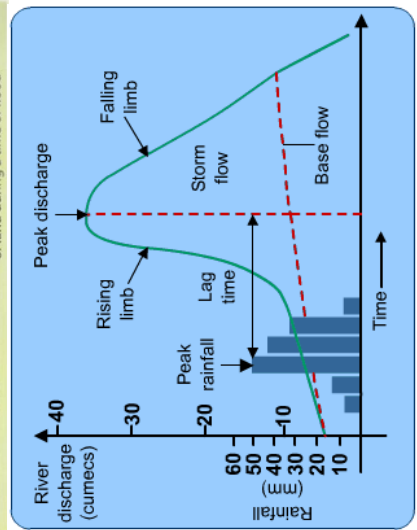
Waterfall formation



Meander formation

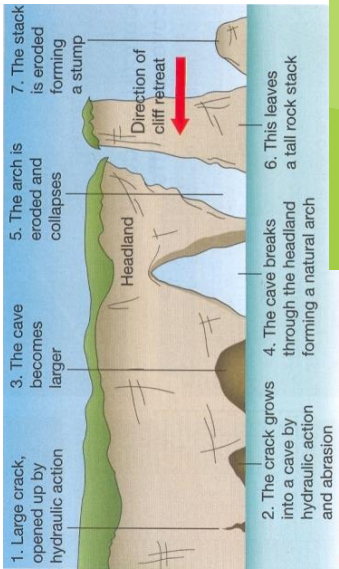


Flood or storm hydrograph

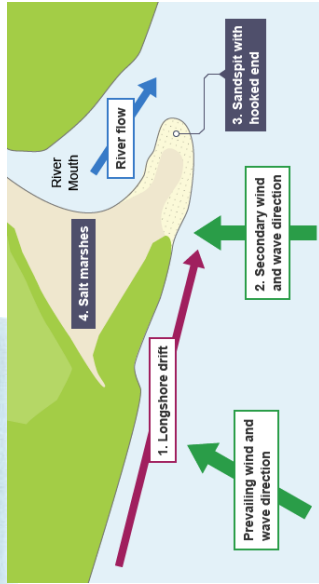


Topic 3: Coasts and Oceans

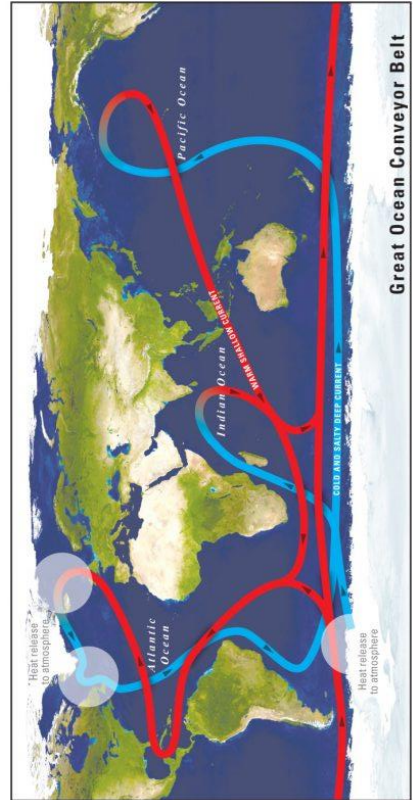
Caves, arch & stack formation



Spit formation



Ocean Currents



Cycle 2 Knowledge Organiser

Cycle 1 in RS will focus on: An introduction to Philosophy so that you can begin to understand the theories behind the big questions of life.

Key words and definitions	
Ethics	Moral principles that govern a person's actions.
Abortion	The termination (ending) of a pregnancy. This is legal in the UK before 24 weeks.
Pro-Life	A group which supports a woman being given the choice to continue a pregnancy or terminate it.
Pro-Choice	A group which actively campaigns for abortion to be criminalised.
Euthanasia	The painless killing of a person who has been suffering from a terminal illness or is in an irreversible coma.
War	A state of armed conflict between countries or groups within the same country.
The Just War Theory	A Christian set of rules that must be followed by the UK to minimise harm caused to people and environments.
Genetic Modification	Altering the genetic makeup of an organism.
Maturity	To learn about and discuss concepts which are sensitive in a mature (grown up) way.

Topic
Studying Ethics

Asking questions are important in the study of Philosophy and Ethics. Sometimes, questions don't always have answers but they are still worthy of discussion.



Who
Why
Where
When
How

What is Philosophy?
past, present, future

There are **big questions** which we will discuss in RS, such as:

1. **Why are we here?**
2. **Is there a God?**
3. **Why is there suffering in the world is God is all-loving?**
4. **Can the death penalty be justified?**
5. **What is a good action?**
6. **Is euthanasia wrong?**
7. **Do we have free will?**
8. **Is war ever acceptable?**

In KS3 RS you will study Philosophy and Ethics and learn how certain concepts can be applied in society today including:

Philosophy
Is there a God?

Philosophy
What actions can be considered good?

Ethics
Is human life sacred?

Ethics
Can ethical theories be applied to modern society?

Religious Studies

Belong Believe Be Proud

Ethics

Abortion

Abortion, is the termination (ending) of a pregnancy. In the UK abortion is legal before **24 weeks**. There may be certain cases where abortions can take place after 24 weeks if the woman's life is at risk or if the foetus has a serious medical condition.

There are many different opinions as to whether abortion should be legal or not. **Pro Choice** is a movement which supports that abortion should be legal and that a woman has the right to choose whether to continue a pregnancy or not.

Pro-Life is a movement which actively campaigns to criminalise abortion in order stop abortions from taking place legally.

There is no right or wrong answer when considering whether abortion is correct or not. This topic will enable you to gather factual knowledge of abortion and allow you to deduce your own opinion on abortion. Discussing this ethical issue with maturity is essential.

There are different beliefs about a variety of ethical issues.

1. Most religions offer an explanation to different ethical issues and this usually involves a **Holy Book** offering guidance on how to respond to a variety of ethical issues.
2. **Scientific theories** have been proposed to try to offer differing points of view to try to offer answers to often complex ethical issues, often excluding religious ideas.
3. **Non-religious** opinions have also offered answers to a multitude of ethical issues, some of which have been included in the law of the United Kingdom.

What are the different religious viewpoints about ethics?

Christianity	<i>Follow the teachings of the Bible and the actions of Jesus.</i>
Buddhism	<i>Buddhists are concerned with reducing suffering in the here and now and adapt actions accordingly.</i>
Judaism	<i>Follow the guidance of the Torah.</i>
Islam	<i>Follow the teaching of the Qur'an, Hadith & Sunnah and the actions of Muhammad (PBUH.)</i>

Euthanasia

Euthanasia painlessly ends a person's life if they have been suffering from an incurable illness.

Euthanasia is **illegal in the UK** but is legal in parts of Europe. Many patients have travelled from the UK to other countries where Euthanasia is legal, but they face **prosecution** for doing this. Many religious groups disagree with euthanasia as they argue that it is interfering with God's plan. However, some religious groups see euthanasia as the most loving thing to do, as it **stops a person from suffering**.

War

War is a state of armed conflict between countries or groups within the same country – this is known as a **civil war**. War has many consequences and affects not only soldiers, but civilians too. In order to minimise the harm that comes to both soldiers and civilians, the **Just War Theory** outlines rules that must be followed to reduce the amount of casualties and ensures **just treatment of the opposition**. The Just War Theory attempts to reduce conflict and hostility and resolve wars as quickly as possible. The United Kingdom must follow these rules, if the rules are broken, then those responsible for breaking the rules can be considered to be tried for **war crimes**.

Genetic Modification

Genetic modification is **altering the genetic makeup of organisms** and has been done for thousands of years. Genetic modification has been primarily done with food, such as controlling or selecting different species of plants to grow. This is also the same for animals. Dogs were one of the first animals where certain breeds were carefully selected and bred to produce the dog with the genetics wanted.

As technology has developed, genetic modification has become normalised in the **farming industry** to modify animal's genes so that they have more muscle growth so that more of the animal's meat can be sold for a larger profit. There is a **moral dilemma** as to whether modifying human genes should be something that is carried out, maybe to prevent hereditary diseases, or whether human genetics should not be modified.

By the end of this special Y9 study course, you'll be able to introduce yourself in Spanish, describe your likes and dislikes. It's an ideal jump-start for GCSE!

Introducciones (Introductions)

¡Hola! / Buenos días *Hi! / Good morning*
 Buenas tardes *Good afternoon*
 Buenas noches *Good night*
 Adiós *Goodbye*
 Hasta luego *See you later*
 ¿Qué tal? *How are you?*
 (Muy) bien *(Very) well*
 Más o menos *So-so*
 (Muy) mal / Fatal *(Very) bad / Awful*
 Por favor / Gracias *Please / Thank you*

Mi familia (My family)

en mi familia hay... *in my family there is/are...*
 mi madre/padre *my mum/dad*
 mis padres *my parents*
 mis **[dos]** madres/padres *my [two] mums/dads*
 mi(s) hermano(s)/hermana(s) *my brother(s)/sister(s)*
 mi hermana *my (non-binary) sibling*
 mi tío/tía *my uncle/aunt*
 mi **primo/prima**/prime *my (m / f / n-b) cousin*
 mi abuelo/abuela *my grandad/grandma*

A ah	B bay	C thay	D day	E ay
F effay	G hay	H atchay	I ee	J hota
K ka	L ellay	M emmay	N emmay	O oh
P pay	Q koo	R erray	S essay	T tay
U oo	V oovay	W oovay/doblay	X ek-ees	Y ee griayga
Z theta	Ñ enyay			

Las mascotas (Pets)

Tengo... *I have...*
No tengo... *I don't have...*
 un perro *a dog*
 un gato *a cat*
 un conejo *a rabbit*
 un hámster *a hamster*
 un ratón *a rat*
 una tortuga *a tortoise*
 una araña *a spider*
 una serpiente *a snake*
 unos peces *some fish*

Mi personalidad (My personality)

soy / no soy... *I'm / I'm not...*
 simpático/a *nice*
 divertido/a *funny*
 estupendo/a *brilliant*
 listo/a *clever*
 tímido/a *shy*
 serio/a *serious*
 tonto/a *silly*
 hetero/a *straight*
 gay/lesbiana *gay/lesbian*
 bisexual *bisexual*



Los meses (Months)

enero *January*
 febrero *February*
 marzo *March*
 abril *April*
 mayo *May*
 junio *June*
 julio *July*
 agosto *August*
 septiembre *September*
 octubre *October*
 noviembre *November*
 diciembre *December*

Descripciones físicas

Tengo... *I have...*
 Tiene... *(s)he has/they have...*
 Tienen... *they (plural) have...*
 los ojos **azules** *blue eyes*
 los ojos **marrones** *brown eyes*
 los ojos grises *grey eyes*
 los ojos **verdes** *green eyes*
 el pelo **negro** *black hair*
 el pelo **castaño** *brown hair*
 el pelo **rubio** *blond hair*

Las asignaturas (Subjects)

el español / francés *Spanish/French*
 el inglés *English*
 el deporte/arte *PE/Art*
 la geografía *Geography*
 la historia/música *History/Music*
 la informática *Computing*
 las ciencias *Science*
 las matemáticas *Maths*

MFL - Spanish

Belong Believe Be Proud

Lo siento, (Sorry,)	he olvidado (I've forgotten)	mi mis	(my) (singular) (my) (plural)	lápiz (m) (pencil) bolígrafo (m) (pen) regla (f) (ruler) cosas (pl) (things)
¿Puedo (Can I)	no tengo (I don't have)	mi cuaderno (m) (my exercise book) diccionario (m) (a dictionary)		
	ir a los servicios (go to the toilet)	usar (borrow)	un lápiz un bolígrafo una regla	por favor? (please?)
¿Puede (Can you)	hablar con Usted (talk to you)	ayudarme (help me)		
	abrir (open)	cerrar (close)	la puerta (the door) las ventanas (the windows)	

Key verbs	
soy no soy tengo no tengo ¿Cuántos años tienes? tengo ... años me llamo... hay no hay	I am I am not I have I don't have How old are you? I'm ... years old My name is... there is/are there is/are not

-AR verbs in the present tense	
estudiar estudio estudias estudia	to study I study you study (s)he studies / they study

Me gusta No me gusta Me encanta Odio Prefiero A ___ le gusta A ___ no le gusta	I like I don't like I love I hate I prefer ___ likes ___ doesn't like				
Mañana El fin de semana El año próximo	Tomorrow At the weekend Next year	voy a vas a va a vamos a vais a van a	(I'm going) (you're going) (he/she's going / they're going) (we're going) (you're going) (they're going)		
		porque pero sin embargo	because but however	es it is no es it isn't	
		jugar al fútbol estudiar el español ir a los Estados Unidos hacer mis deberes cenar al restaurante encontrar mis amigos	to play football to study Spanish to go to the USA to do my homework to eat at a restaurant to meet my friends		fácil guay difícil aburrido/a interesante genial divertido inútil
				muy bastante un poco extremadamente	easy cool difficult boring great fun(ny) useless

MFL - Spanish

Belong Believe Be Proud

Music

Belong Believe Be Proud

Each learning cycle will build upon the different elements of music theory. Knowledge quizzes will check your understanding of key points. Extra, optional materials will be posted in google classrooms for students wishing to study in more depth and challenge themselves by taking a grade 2 theory exam at the end of year 9.

MUSICAL ELEMENTS

Tempo	Speed of the music
Dynamics	How loud or quiet the music is
Pitch	How high or low the notes are
Rhythm	Note values, and the patterns of different note values.
Meter	Time signatures - how many beats are in each bar
Articulation	Different styles of playing the notes / music.

ARTICULATION

TERM	SYMBOL	MEANING
legato		smoothly
staccato	:	detached

OSTINATO

An ostinato is a short, repeated musical phrase or pattern. Very often it runs through a significant section of the piece and is instantly recognisable. In pop music, an ostinato is sometimes called a riff. Scan the QR codes to hear the examples below:



Ostinato played on the cello in the aria Habanera from George Bizet's opera Carmen.



Bass line riff - "My Girl" - The Temptations.



Bass line riff - "7 Nation Army" - The White Stripes.

DYNAMICS

TERM	SYMBOL	MEANING
pianissimo	<i>pp</i>	very soft
piano	<i>p</i>	soft
forte	<i>f</i>	forte
fortissimo	<i>ff</i>	fortissimo
mezzo piano	<i>mp</i>	moderately soft
mezzo forte	<i>mf</i>	moderately loud
crescendo	$\text{<math>\text{<img alt='crescendo symbol' data-bbox='488 295 505 345'</math></math>$	gradually getting louder
diminuendo	$\text{<math>\text{<img alt='diminuendo symbol' data-bbox='525 295 542 345'</math></math>$	gradually getting softer

Incorporating changes in dynamic into music makes it more interesting to listen to.

VOCABULARY INCORPORATE - to include something.

TEMPO

TERM	MEANING
andante	walking pace
allegro	quickly

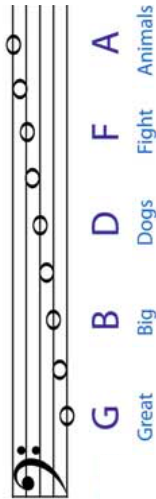
Each learning cycle will build upon the different elements of music theory. Knowledge quizzes will check your understanding of key points. Extra, optional materials will be posted in google classrooms for students wishing to study in more depth and challenge themselves by taking a grade 2 theory exam at the end of year 9.

PITCH

Bass clef - tells us that the note F is on the fourth line.

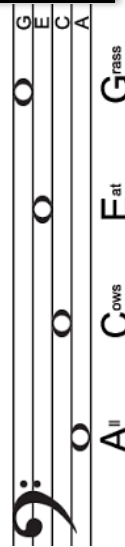


LINES



Remember where the bass clef notes are using these phrases.

SPACES



Staff - the 5 lines that we use to write musical notation on

METER

People often confuse **METER** with **RHYTHM**. Meter describes how many beats are in each bar - also known as the **TIME SIGNATURE**.

	4 crotchet beats per bar
	3 crotchet beats per bar
	2 crotchet beats per bar

ACCIDENTALS

Flat sign - makes the note a semitone lower

Sharp sign - makes the note a semitone higher

Natural sign - cancels out any previous flats or sharps in the bar.

ARTICULATION

TERM
tenuto

SYMBOL
—

MEANING
slightly longer

phrase mark



Goes over several notes to show they are part of a phrase.

LEDGER LINES

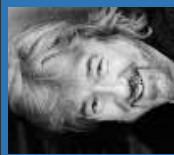
When we need to write notes that are higher or lower than those on the staff, we extend the staff by adding lines called **ledger lines**.

Drama

Belong Believe Be Proud

The focus for cycle 2 in drama is: Using our performance skills to successfully interpret characters from a scripted play. To learn how to use successful blocking and proxemics to communicate context and themes from a scripted play.

Blood Brothers

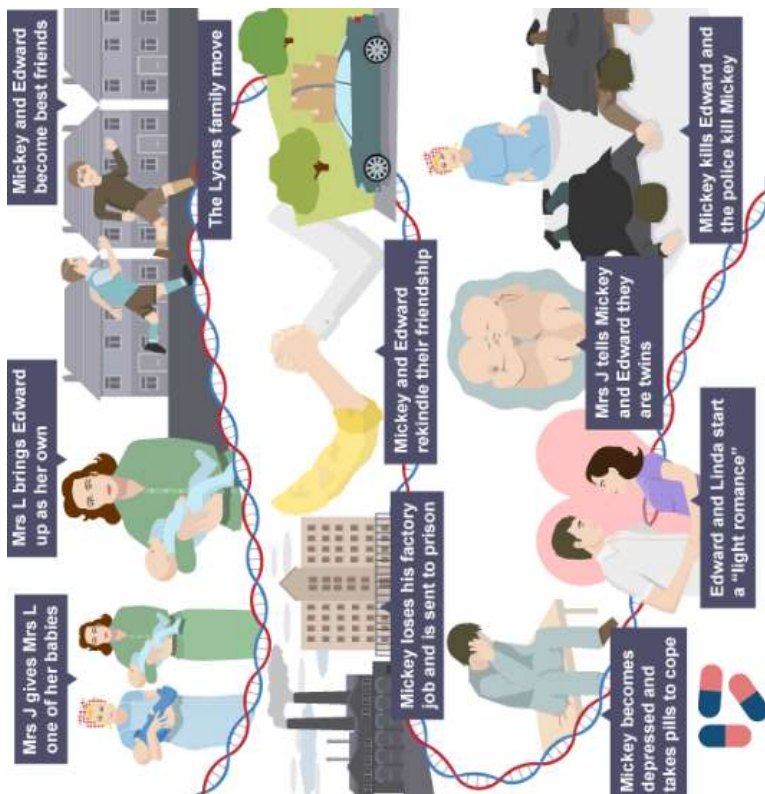


Key information

The play was written by **Willy Russell** in **1982** and first performed in **1983**. Willy Russell is from **Liverpool** which during the 80's was known for being a **working class** city.

This is where he set Blood Brothers because **class** is something he wanted to explore in the play.

Blood Brothers was originally written for a school play before Russell made it into a musical. The musical has been performing for 37 years!



	<p>Linda. Linda is a working class child the same age as Mickey and Eddie. The three of them grow up as best friends. Both Mickey and Eddie are in love with her. She ends up marrying Mickey however as his life begins to deteriorate she turns to Eddie for help and comfort.</p>
	<p>Sammy. Sammy is Mickey's older brother. At the beginning of the play we see Mickey as a child looks up to him. As the play continues we see a progression in violence in Sammy and eventually he gets Mickey involved in his criminal activity.</p>



Mickey. Mickey is the twin brother who is brought up by his biological mother with his seven older siblings. He is brought up in a working class family with little money. Throughout the play we see his life deteriorate with lack of education, losing his job and going to prison.



Eddie. Eddie is Mickey's twin brother who was given away by Mrs Johnstone, and brought up by Mrs Lyons. Eddie is brought up in a rich middle class family as an only child. Throughout the play we see all the opportunities given to him such as private education and university.



Mrs Johnstone. Mrs Johnstone is a single mother for 7 and is scared of not being able to look after another two children. She is naive and allows Mrs Lyons to convince her to give up one of the twins. Her superstitions and lack of education enable Mrs Lyons to take advantage of her.



Mrs Lyons. Mrs Lyons is a middle class woman desperate to have a child. She is devious in the way she convinces Mrs Johnstone to give her one of her twins. Throughout the play we see her unravel as she becomes more and more paranoid that Eddie or her husband will find out the truth.



Narrator. He acts as a social conscience, drawing the audience's attention to the rights and wrongs of characters' actions. He also reminds the audience of the mothers' guilt and the twins' inevitable death. At times, the Narrator serves a

Drama

Belong Believe Be Proud

SET DESIGN

Flats

A flat (short for scenery flat) is a flat piece of theatrical scenery which is painted and positioned on stage so as to give the appearance of buildings or other background. They are usually made of MDF wood.



Backdrop

A backdrop is the scenery that hangs behind the actors in a play, which helps to provide a setting for a play. It is made from cloth which has been painted to look like a scene. It is pulled tightly across two metal beams and hung at the back of the



Decking

This is a type of make-shift staging which is used to create upper levels on the stage.



Trucks

A moving platform on which a piece of scenery is built to facilitate scene changing.



Revolve

A turntable built into the stage floor on which scenery can be set and then turned.



Flies

The flies or 'fly system' is a rigging system which operates above the stage. It is a series of ropes, pulleys and weights which enable crew to quickly and safely hoist up and down curtains, scenery or people.

LIGHTING DESIGN

Spotlight

A Spotlight has a hard-edged effect, used to light characters or elements on the stage. It helps to draw audience focus or attention. Coloured gels can be used with this lamp.



Fresnel

A Fresnel is similar to a spot but is used for a softer edged effect, it's useful for good overall light when used with other Fresnels. Coloured gels can be used with this lamp.



Floodlight

A Floodlight produces a clear wide-angled light to fill the whole stage, but there's little control over the spread of the light. Coloured gels can be used with this lamp.



Gobo

A Gobo is a sheet inserted on a frame at the front of the light with a design cut into it. It filters the light, creating a picture effect on the stage. EG: to create the leaves of a forest, or the bars of a prison.



Coloured Gels

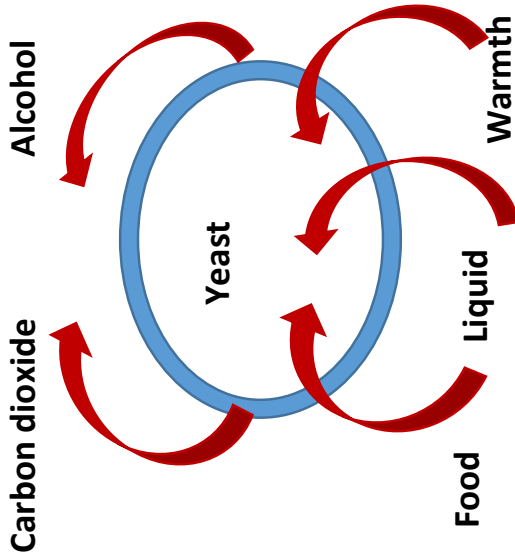
Coloured gels are a sheet of colour which are added to the front of some lanterns so that they throw coloured light onto the stage.



Strobe light

A strobe is a flashing light, used for special effects. It's often used to give the effect of old movies. It produces a jerky effect on the movements of actors when used on its own

Quiz 1 General Knowledge



Yeast needs:

Food / Liquid / Warmth

Yeast makes:

Carbon dioxide
Alcohol

Yeast is a microorganism:

It grows or multiplies making carbon dioxide and alcohol.

Modify

'make partial or minor changes to (something).'

Criteria

'are the ideals or requirements on which a judgment, evaluation, or selection is based.'

Food Cycle Knowledge Organiser

Gluten in flour

There are two proteins in flour called gliadin and glutenin. When you add water to flour you make gluten.

Gluten is stretchy like an elastic band. You need to stretch it so that it gives bread a strong structure but if you over stretch it the strings of gluten snap.

To prevent gluten strands from snapping you add vitamin C (ascorbic acid) to bread dough because it strengthens the gluten. This means you only have to prove the bread once. This is called the Chorleywood Bread Process.

We can buy FAST ACTION yeast which has vitamin C added to it.

This confuses people because they then think the vitamin C helps the yeast!

Food Cycle Knowledge Organiser

Quiz 2

Key words

Gluten	A protein in flour made from gliadin and glutenin
Yeast	A biological raising agent used in bread and bread products
Kneading	Stretching the bread dough to stretch the gluten
Proving	Resting bread dough to let the yeast grow and the gluten rest
Fortifying	Adding vitamins and / or minerals into a food product after it has been made
Environment	Refers to the air, water and land on which people, animals and plants live.
Food Security	Having reliable, safe access to a sufficient quantity of affordable, nutritious food
Traceability	Means you can track any food through all stages of production, processing and distribution (including importation and at retail).
Carbon Footprint	The amount of carbon dioxide released into the atmosphere as a result of the activities of a particular individual, organisation, or community.

Quiz 3 General Knowledge

Environmental issues

You need to consider these topics and also research the wider issues around each one.

Organic foods (made without any chemicals, pesticides or fertilisers)

Sustainability (making sure that we have enough to eat without destroying natural resources).

Food miles (how far the food travelled from being grown to being served on a plate and then the miles that any waste travelled).

Waste and landfill (dealing with waste in a sustainable way with little impact on the environment).

Packaging (using recycled packaging, re-using and recycling packaging).

Pesticides and chemicals (their impact on the environment and food chains).

In your test you will be asked to write an explanation of why more people buy locally sourced foods. These are some reasons, there are many more, try to think of some of your own.

The negative effects of buying food that has travelled a long way.

Reasons why we buy food that has travelled a long way.

More fuel used, higher carbon emissions, more pollution, not supporting our local economy.

Getting foods out of season (eg strawberries at Christmas), can't grow those foods in our own country, cost.



Design and Technology

Belong Believe Be Proud

During this topic you will learn some timber properties, tool names and uses, wood joints, veneers and chipboard.

Quiz 1 General Knowledge

Made from wood; often using off-cuts from natural timber. Manufactured Boards are bonded together with adhesives. They tend to be cheaper than solid wood planks



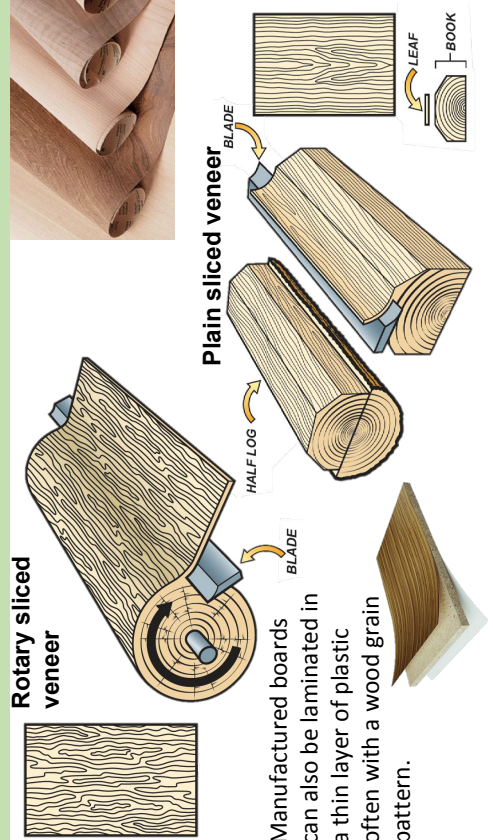
Chipboard

- Chipboard uses waste materials so is cheap to produce
- Not much structural strength, especially in damp conditions.
- Surface is very rough, so usually laminated with plastic or wood veneers.
- Used for loft boards, kitchen worktops and flatpack furniture.

Wood chips are mixed with glue and pressed into flat sheets.

Quiz 1 General Knowledge

Veneer is a thin sheet/layer of natural wood, it is produced from a tree trunk in a number of ways. Veneer is usually glued onto the surface of a cheaper manmade board, giving the illusion of expensive natural wood.

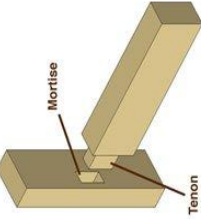


Manufactured boards can also be laminated in a thin layer of plastic often with a wood grain pattern.

Y9 Timbers Cycle Knowledge Organiser

Quiz 1 General knowledge

Wood Joints

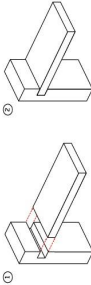


Mortise and Tenon

This is a very strong joint. The joint is split into two parts one part is the tenon (which the tenon saw is named after), the other part is the mortise (which the mortise chisel is named after).

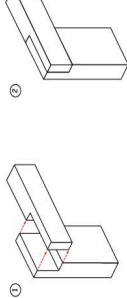
Housing joint

This is just a simple slot cut into one piece of wood to increase the glue area. This is often done with a router and works very well in MDF. This joint can be used for dividers or shelves.



Halving joint

There are many versions of the halving joint but they all involve removing half of the wood from each piece using a saw or a chisel. This joint is often strengthened with dowel.



Quiz 2 Materials / Properties

Timber Properties

Aesthetics	The appearance of the material, e.g. wood grain.	
Compression Strength	Resisting compression (being squashed or crushed)	
Tensile Strength	Resisting tension (being pulled apart)	
Hardness	Resisting being scratched or damaged at the <u>surface</u>	
Toughness	Resisting a sudden impact	

Quiz 2 Key words

Clarify

Conclude

Y9 Timbers Cycle Knowledge Organiser

Quiz 3 Processes

Tool Names and uses

1. Dowels	Used for making strong, accurate joints in wood.
2. Hole saw	Cutting large holes in wood
3. Mortise gauge	It has two pins for marking two parallel lines where a mortise and tenon joint is to be cut.
4. Sash clamp	Used to clamp work together when it is glued.
5. Auger	Drilling deep holes in wood
6. Smoothing plane	Finishes a surface and used on end grain
7. Rasp	Coarse file used for shaping wood or other material.
8. Cross pein hammer/ Warrington hammer	The cross pein allows you to gently tap the nail between your fingers without striking a finger or thumb.
9. Mortise chisel	Used with a mallet for cutting mortise joints
10 Forstner bit	Drilling flat-bottomed holes in wood



Quiz 2 Materials / Properties

Natural timbers

Wood is an organic material that is the main substance in the trunk and branches of a tree. Wood prepared for use in building and carpentry is known as timber. There are two types of natural timber: Hardwood and softwood. These names do not necessarily refer to how hard or soft the wood is.

Larch



Uses

- Tough
- Durable
- Resistant to water
- Use outside untreated
- Exterior cladding on buildings
- Small boats

Softwood

Ash



Properties

- Tough
- Flexible
- Finishes well
- Low resistant to rot
- Handles for tools
- Sports equipment
- Ladders

Uses

Hardwood

Balsa



Properties

- Very light
- Good strength to weight ratio
- Surfboard cores
- Air craft and model making

Uses

Birch



Properties

- Even grain
- Finishes well
- Low resistant to rot
- Veneers
- Interior furniture

Uses



Design and Technology

Belong Believe Be Proud

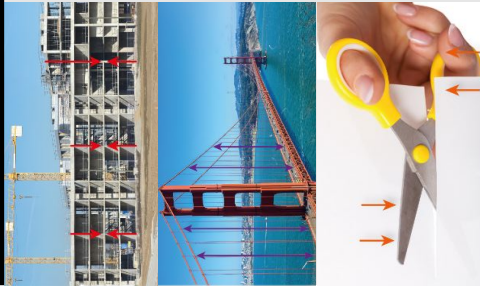
During this topic you will learn the types, properties and uses of metals

Y9 Metal Cycle Knowledge Organiser

Quiz 1 General knowledge

Forces and Stresses

Quiz 1 Key words



Compression is squashing forces.

Tension is stretching or pulling forces.

Shear is where the opposing forces are not directly opposite each other.



Variation

Rigid

Justify

Design

Quiz 1 General Knowledge

Metal surface finishes

All four help to prevent corrosion of ferrous metals by creating a barrier against moisture. They also enhance the aesthetics (appearance)

Paint



Plastic dip coating



Lacquering



Galvanising



Non-ferrous Alloy metals and properties



Brass

- Alloy of copper + zinc
- Corrosion resistant
- Good thermal & electrical conductivity

Ferrous Alloy metals and properties



Stainless Steel

- Alloy of iron + chromium and other elements.
- Corrosion resistant
- Hard
- Tough



High Speed Steel

- Alloy of iron + carbon + tungsten
- Brittle
- Hard

ALLOYS











Quiz 2 Materials / Properties

Metals can be divided into 3 categories. You have previously looked at Ferrous Metals (contain iron) and Non-Ferrous Metals (contain no iron).

The 3rd category is Alloys. This is where 2, or more metals are melted together to make a new one

E.g. Brass is an alloy Metal - Copper + Zinc = Brass

Y9 Metal Cycle Knowledge Organiser

Quiz 2 Properties		Metal Properties	
Ductility	The ability to make metal longer and thinner.	1.	
Toughness	The ability to withstand a sudden impact without fracture.	2.	
Electrical conductivity	The ability to allow electricity to pass through the material (conduct)	3.	
Thermal conductivity	The ability to transfer heat through the material (conduct).	4.	
Hardness	The ability to resist indentation and wear and tear at the surface.	5.	
Alloys	Two, or more metals melted together to form a new one. They are usually made to improve the properties of the metal. They can be ferrous or non-ferrous, depending whether they contain iron or not.	6.	
Pure metals	Made up from only one chemical element, such as aluminium or copper.	7.	
Malleable	If a metal is able to be hammered or pressed into a flatter and wider shape without breaking or cracking.	8.	
Corrosion resistant	The ability of a material to be weather resistant and not rust.	9.	
Durability	The ability to resist damage, pressure and the general wear and tear of daily use.	10.	

Quiz 3 Processes		Tools and uses	
1. Metal vice	To hold work whilst cutting/ filing.	6. Odd leg callipers	To scribe lines parallel to the edge of metal
2. Hacksaw	Cutting straight lines in metal.	7. Buffer machine	To polish metals and plastics
3. Tin snips	Cutting straight lines in sheet metal.	8. Centre lathe	To manufacture cylindrical shapes from metals and plastics
4. Engineers' square	Marking 90° angles	9. Centre punch	Make an indent in metal before drilling.
5. HSS drill bit	Cutting tool used to create holes	10. Scriber	Use to mark out lines/ design on metal.

Cycle 2 in Year 9 PE will focus on developing your **Effective Teams** through activities such as Netball, Football, Volleyball & HRF.

Cycle 2 Knowledge Organiser

<u>Key words and definitions</u>	
<u>Concept - Effective Teams</u>	<u>Effective Teams - Focus Statement</u>
Support	Being able to support others in their skill development with confidence
Considerate	Showing consideration to others in both competitive and non-competitive situations
Communication	Communicate with effectiveness to my peers to enhance performance
Trust	Allocating roles within teams to suit strengths to enhance team success
Collaboration	Collaborating with others to enhance development and success
Evaluation	Working with my peers to effectively evaluate performance
Problem Solving	Assessing different situations to problem solve effectively
Teamwork	Completing my assessment to the best of my team's' ability
Adaptation	Responding to feedback to improve my skills/ understanding



Effective Teams

Welcome to business studies!
Computer Science Y9 learning cycle 2

Overview: During this cycle you will study a selection of topics from unit 1 of GCSE business studies. The lessons have been chosen to give you a useful overview of what the subject is about which will help you decide whether or not you would like to take it as a GCSE option. If you have already decided not to, the topics we have selected will still be helpful to you in future life.

GCSE Business course overview

The whole two year course splits into six units:



Unit 1 Business in the real world overview

This unit splits into seven sections as shown below



For Y9 cycle 2 we will look at sections **1.1** and **1.6**

Computer Science

Belong Believe Be Proud

1.1 The purpose and nature of business



Goods

Items that are produced from raw materials for sale to businesses or consumers.

Service

An action that is carried out to fulfil a need or demand in return for payment.

Needs

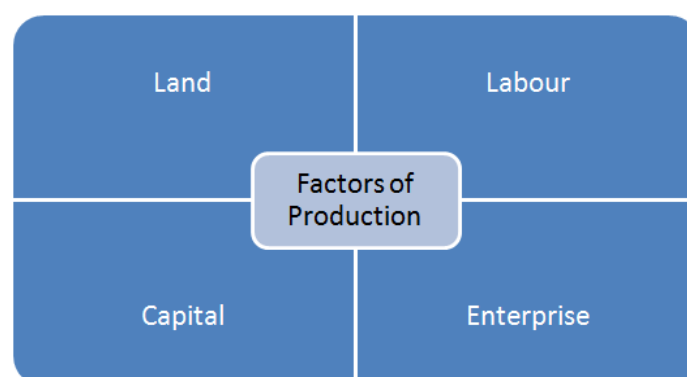
The human wants that are essential to survival; clothing, food, shelter, warmth or water.

Wants

Things that people would like to have; not limited to the things they need to survive.

Factors of production

The elements that combine in the production process: land, labour, capital and enterprise.



Computer Science

Belong Believe Be Proud

Opportunity cost

The cost of making one choice concerning the use of limited resources at the expense of an alternative choice.

Primary industry

A business that extracts the earth's natural resources.

Secondary industry

A business that uses raw materials to manufacture goods or construct items.

Tertiary industry

A business that provides services to consumers or other businesses.

Retailer

A business or person that sells goods to the consumer.

Enterprise

The ability to identify business ideas and opportunities to bring them to fruition and to take risks where appropriate.

Entrepreneur

A person who has the vision to use initiative to make business ideas happen, managing the resources and risks. They have to be hard working, innovative, organised and willing to take a risk.

Market

Where those wishing to buy goods/services make contact with those who have them to sell.

Gap in the market

An opportunity for a new business (or expansion) which may meet a need that is not being met, or a group of potential customers who are not yet purchasing a particular good/service.

Computer Science

Belong Believe Be Proud

1.6 Business planning

Business plan

A detailed statement of how the business intends to operate, either at start-up or during a given period of time. Business plans are based on forecasts and so cover only a short time.



Raising finance

Getting the money to pay for starting the business or for developing it.

Unique selling point (USP)

The key benefit of a good/service; it differentiates the product from others and will be the focus of advertising and promotion.

Risk

The possibility that the return on investment will be lower than expected.

Revenue

The income generated from the sale of goods/services.

Cost

The money spent by a business on goods and services. They are divided into fixed costs and variable costs.

Fixed costs

The costs that stay largely the same, regardless of the business' output.

Computer Science

Belong Believe Be Proud

Variable costs

The costs that change as the business' output changes.

Total costs

All the costs involved in producing goods/services.

Total costs = fixed costs + variable costs

Profit

The difference between the money received from the sale of a good/service and the amount it cost; the amount that remains after all the costs have been paid.

Profit = total revenue – total cost

Loss

Where expenditure is greater than income.



Computer Science

Belong Believe Be Proud

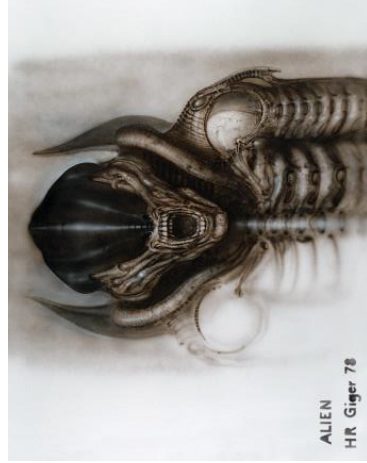
Throughout learning cycle 2 you will create several design ideas for a biomechanical 3D face. You will then enhance and refine your sculpting ability by making your most successful design using clay.

Born in **1940** to a chemist's family in Chur, **Switzerland**.

Giger developed a unique style of painting using an **airbrush**.

By 1964 he was producing his first artworks, mostly ink drawings and oil paintings, resulting in his first solo exhibition in 1966.

His works combined the human form and mechanical parts to create **biomechanical** creatures.



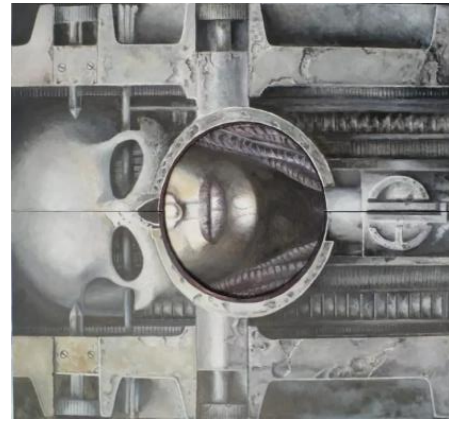
H. R. Giger is recognized as one of the world's foremost artists of **Fantastic Realism**.



He studied architecture and industrial design at the School of Applied Arts.

His main influences were painters **Ernst Fuchs** and **Salvador Dali**.

Giger suffered from **night terrors** which greatly influenced his work.



Art

Belong Believe Be Proud

Throughout learning cycle 2 you will create several design ideas for a biomechanical 3D face. You will then enhance and refine your sculpting ability by making your most successful design using clay.

Ceramics: Key Words

Biscuit / Bisque: The first firing of clay in the kiln.

Burnishing: Polishing leather hard clay by rubbing with a smooth stone or back of a spoon.

Wedging: Removing air pockets from a lump of clay.

Glaze: A coating applied to a bisque fired sculpture that must be fired in the kiln again.

Throwing: Using a potter's wheel to shape clay.

Kiln: A pottery oven that reaches high temperatures.

Ceramics: Pottery, Bricks, Tiles, China, Porcelain

Leather Hard: Partially dried clay ware.

Coil: using the hands to roll out and rope shaped lengths of clay.

Score and Slip: a joining technique where the edges to be attached are roughened up and "glued" with liquid clay (slip).



Notes

Belong Believe Be Proud

Notes

Notes

Notes

