

Year 8 Homework Booklet

Learning Cycle 4

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THE
KING ALFRED
SCHOOL
An Academy

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

Nelson Mandela

Name

Tutor

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Your Homework Booklet

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 4, 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.

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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

Learning Cycle 4



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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	/	/	/	/

Learning Cycle 4



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Online Maths Work

Learning Cycle 4

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			



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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



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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:

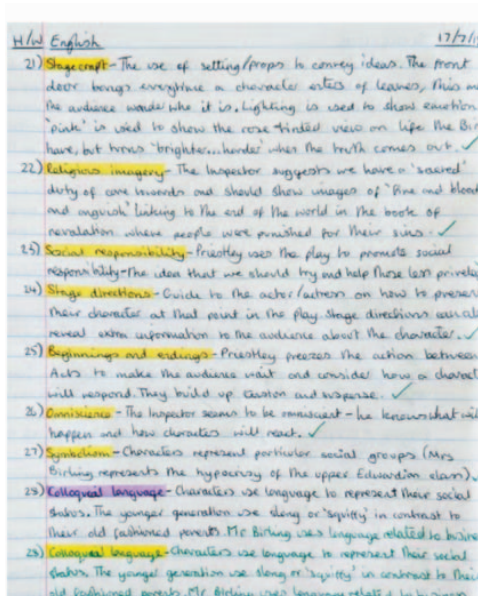
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410 - 1066	Saxon and Viking Britain
1066 - 1485	Medieval Britain
1485 - 1603	Tudor Britain
1603 - 1714	Stuart Britain
1714 - 1837	Georgian Britain
1837 - 1901	Victorian Britain
1901 - 1910	Edwardian Britain



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

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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

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Learning Cycle 4

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	U	S	L	D	S	I
O	M		Y	O		E
M				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
- Visual METAPHORS allow brain to fill gaps
- ENABLES CONNECTION and synthesis OF IDEAS
- raises ATTENTION and ENGAGEMENT
- organizes and SUMMARIZES insights
- A TOOL FOR IMMERSIVE LEARNING
- eases CLARITY and comprehension
- HELPS IN SENSE MAKING
- QUICK GRASP and memory BETTER RETENTION
- EASY sharing & COMMUNICATION

JOHN MEDINA 'BRAIN RULES'

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HOW BEDROCK WORKS

Bedrock Vocabulary is an online programme that teaches you the academic words you need to succeed at school and beyond, while encouraging reading, boosting literacy, and improving learning outcomes across the curriculum.

Bedrock is self-marking and adapts to your individual needs, making it easy for you to use independently.

Once per fortnight, you will have a Bedrock lesson in school.

Once per fortnight, complete at least one lesson at home as part of your English homework. Record the topic you completed and any test scores in your homework book.

[My Bedrock timetable](#)

My English library Bedrock lesson is on:

I will complete my Bedrock homework on:

1. To log in, go to <https://app.bedrocklearning.org/> on any device.
2. Make sure the Student tab is selected.
3. Enter your username and password.
4. Click Learn!

Username:

Password:

Access Code:

Dear Parents,

You can also register for an account to monitor your child's progress.

Make your parent account

1. Go to <https://app.bedrocklearning.org/>
2. Click the Parent/teacher tab.
3. Click Parent sign up.
4. Enter your child's last name, access code, and your details. The access code is provided by your child's school, and allows you to link your account with your child's. Bedrock can't issue access codes - only your child's school.
5. You'll be sent an email containing your username. Click the link in the email.
6. Click the orange Show password button. Make sure you remember your username and password, as you'll need them each time you log in.

Log in

1. Go to <https://app.bedrocklearning.org/>
2. Click the Parent/teacher tab.
3. Enter your username and password and click Login.

Cycle 4 in **Maths** will begin by looking at finding the area of a trapezium and a circle and compound shapes. You will then spend some time looking at the data handling cycle, and investigate different ways of displaying data. At the end of the cycle you will investigate calculating averages from frequency tables.

DATA COLLECTION– Key words and definitions

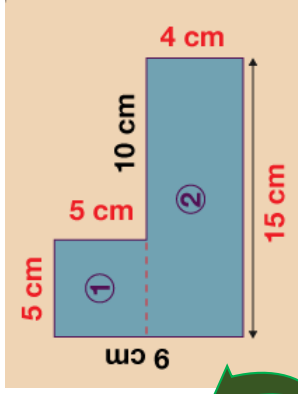
area	the amount of space inside a 2D shape
quadrilateral	four sided shape e.g. trapezium, rectangle
radius	the distance from the centre to the outside of the circle
diameter	the distance from one side of a circle to other passing through the centre
circumference	the distance around the outside of a circle
frequency	how many times a particular value or category occurs
bar chart	a diagram showing the frequency of each category with vertical bars
pictogram	a chart that shows how many of each category there are (frequency) in pictures related to the category
mode	the value or category with the highest frequency
median	the middle value of a data set when placed in order of least to the greatest
mean	the sum of all the data divided by how many values there are
range	the lowest value subtracted from the highest value

Topic 1
To be able to find the area of a trapezium and area of a circle

Area of **TRAPEZIUM** = $\frac{\text{average of parallel sides}}{2} \times \text{distance between them}$

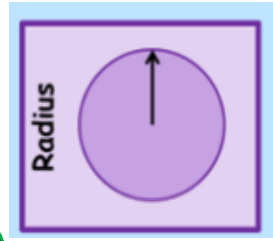
$A = \frac{1}{2} \times (a + b) \times h$

To find the area of a trapezium, you could split the shape up into 2 triangles and a rectangle or use the formula.



A compound shape is a shape that is made from 2 or more shapes joined together. To find the area of a compound shape you need to split the shape up into separate shapes, find their areas and then add the individual areas at the end.

Shape 1 – $5 \times 4 = 20\text{cm}^2$
 Shape 2 – $\frac{1}{2} \times (6 + 15) \times 10 = 105\text{cm}^2$
 $20 + 105 = 125\text{cm}^2$



To find the **area** of a circle:
 $\pi \times \text{radius}^2 = \pi r^2$

Maths

Maths

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Topic 2

To look at the data handling cycle and ways in which data can be presented.



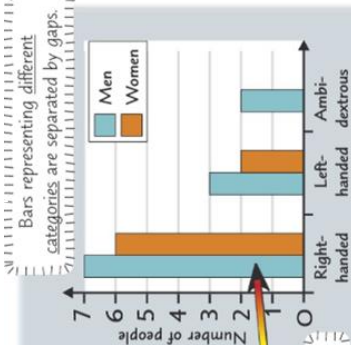
EXAMPLE:

Draw a dual bar chart to show the information in the two-way table below.

	Right-handed	Left-handed	Ambi-dextrous	Total
Men	7	3	2	12
Women	6	2	0	8
Total	13	5	2	20

Draw a bar for the men and a bar for the women for each of the three categories.

Both axes on a bar chart must be labelled.



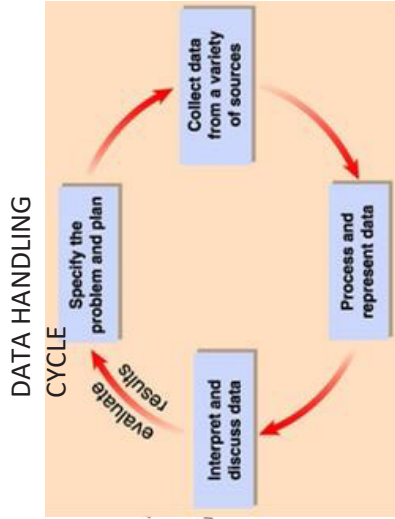
A dual bar chart can be used to compare two sets of data easily

Topic 3

To be able to calculate the different types of average and range and compare distributions

You can use a variety of different ways to present your collected data:

- Bar Charts
- Dual Bar Charts
- Pie Charts
- Pictogram



To find the **MEAN** you need to add an extra column and multiply the number of posters by the frequency to find the total number of posters. You then divide the total number of posters by the total frequency.
 $95 \div 40 = 2.375$

The **MEDIAN** is the category of the middle value.

There are 40 values so the midway point is between the 20th and 21st value.

You need to count through the frequencies to find this value, $0 + 10 = 10$, $10 + 24 = 34$, therefore the median must fall in the '2' class

Number of posters	Frequency	Number of posters x Frequency
0	1	$0 \times 1 = 0$
1	10	$1 \times 10 = 10$
2	12	$2 \times 12 = 24$
3	9	$3 \times 9 = 27$
4	6	$4 \times 6 = 24$
5	2	$5 \times 2 = 10$

The **MODE** is the category with the highest frequency. The highest frequency is 12 for '2 posters' so the **MODE = 2**

The **RANGE** is the difference between the highest and lowest number of posters.
 $5 - 0 = 5$

English

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In Cycle 4 in English will reading the mid-century play “The Crucible” by Arthur Miller. It is based on the true story of the Salem Witch Trials, although Miller does take dramatic creative license with the characters! The play is popular as it is considered a damning allegory on the political landscape of America in the 1950s, but also explores the issues around theocracies, the patriarchy and basic human nature. The Crucible is a tragedy in that it features a tragic hero whose fatal flaw of adultery results in his downfall, and who only repents his error after it is too late.



KEY VOCABULARY

Theocratic	A system of government in which the church rules in the name of God or a god.
Monolithic	An organisation or system that is large, powerful, indivisible, and slow to change.
Parochial	Relating to a Church parish and/or having a limited or narrow outlook or scope.
Patriarchal	Relating to or denoting a system of society or government controlled by men.
Absolutism	The holding of absolute principles in political, philosophical, or theological matters.
Reputation	The beliefs or opinions that are generally held about someone.
Puritan	A denomination of Protestantism popular in the 17th and 18th centuries and/or person who adheres to strict moral or religious principles, especially one opposed to luxury and sensual enjoyment.
Persecution	Hostility and ill-treatment, especially because of race or political or religious beliefs.
McCarthyism	The use of methods of investigation and accusation regarded as unfair, to suppress opposition. Named after the politician who started the Red Scare.

THEMES IN THE PLAY

- Fear
- Power
- Hysteria
- Intolerance
- Morality
- Injustice
- Religion
- Relationships

PERSUASIVE LANGUAGE TECHNIQUES:

Power of Three (*Tricolon*)

Emotive Language

Rhetorical Questions

Statistics and Facts

Undermine the Opposition

Ancedote

Direct Address

Exaggeration (*Hyperbole*)

English

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CHARACTERS

John Proctor	The play's tragic hero. Proctor is a local farmer and good man, but his fatal flaw is his lust for Abigail Williams which led to their affair.
Abigail Williams	Reverend Parris' niece. The ring leader of the accusations. She lies and manipulates people and is motivated by her lust for Proctor and her desire to take revenge on Elizabeth.
Reverend John Hale	A young minister, well respected, kind and an expert on witchcraft.
Reverend Parris	The minister of Salem's church, he's paranoid, materialistic and disliked by the townspeople.
Betty Parris	Reverend Parris's ten-year-old daughter.
Tituba	Reverend Parris's black slave from Barbados. Tituba agrees to perform voodoo at Abigail's request
Elizabeth Proctor	John Proctor's loyal, pious and virtuous wife.
Francis Nurse	A wealthy, influential man in Salem.
Rebecca Nurse	Francis Nurse's wife. Rebecca is a wise, sensible, and upright woman, held in tremendous regard by most of the Salem community.
Thomas Putnam	A wealthy, influential citizen of Salem, he uses the witch trials to increase his own wealth by accusing people of witchcraft and then buying up their land.
Ann Putnam	Thomas Putnam's wife. Only one of Ann's eight babies survived. Ann is convinced that they were murdered by supernatural means.
Mary Warren	The servant in the Proctor household and a member of Abigail's group of girls. She is a timid girl, easily influenced by those around her.
Judge Hathorne	The presiding judge at the witch trials
Giles Corey	A brave and influential man in Salem.

Arthur Miller wrote *The Crucible* in response to the activities of the House Un-American Activities Committee. The play uses the historical event of *The Salem Witch Trials* of 1692 as an allegory for HUAC's investigations of American citizens.



CONTEXT

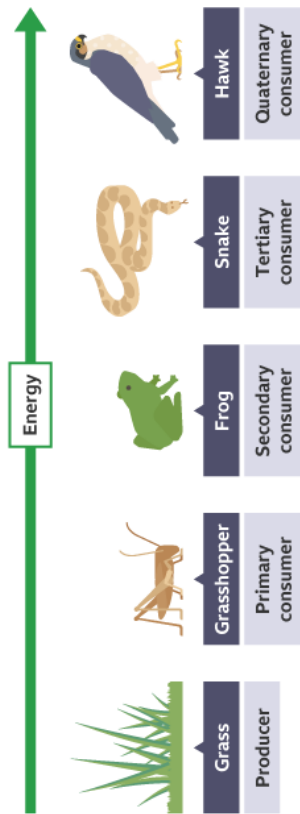
KEY TERMINOLOGY

Allegory	A text that can be interpreted to reveal a hidden meaning, typically a moral or political one.
Bibliomancy	Religious connotations within a text.
Paradox	A statement or situation that may be true but seems impossible or difficult to understand because it contains two opposite facts or characteristics.
Playwright	A person who writes plays.
Stage Directions	The playwright's additions to the scripts to aid direction of props, staging and acting.
Act	A group of scenes that are linked by plot or time.
Scene	A subsection of an act, denoting change of setting or characters.

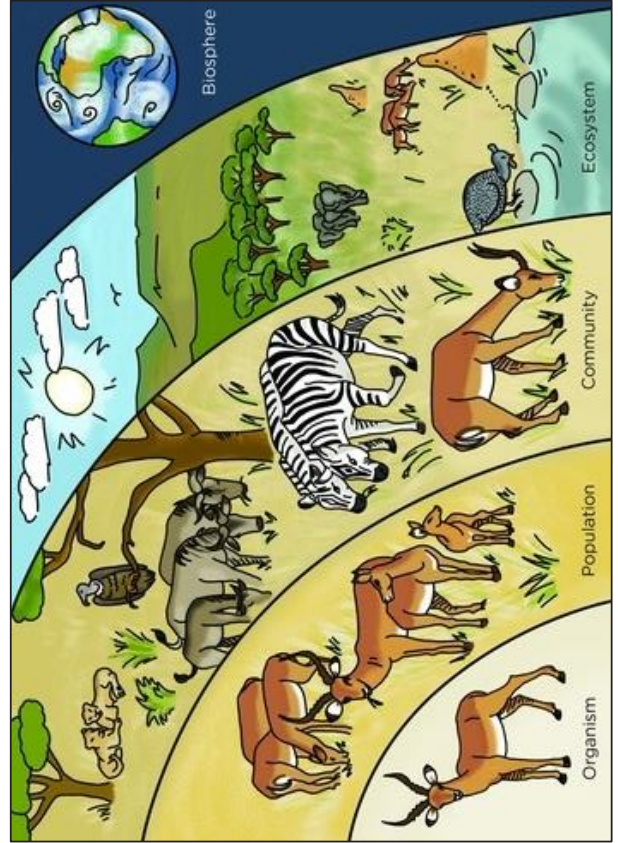
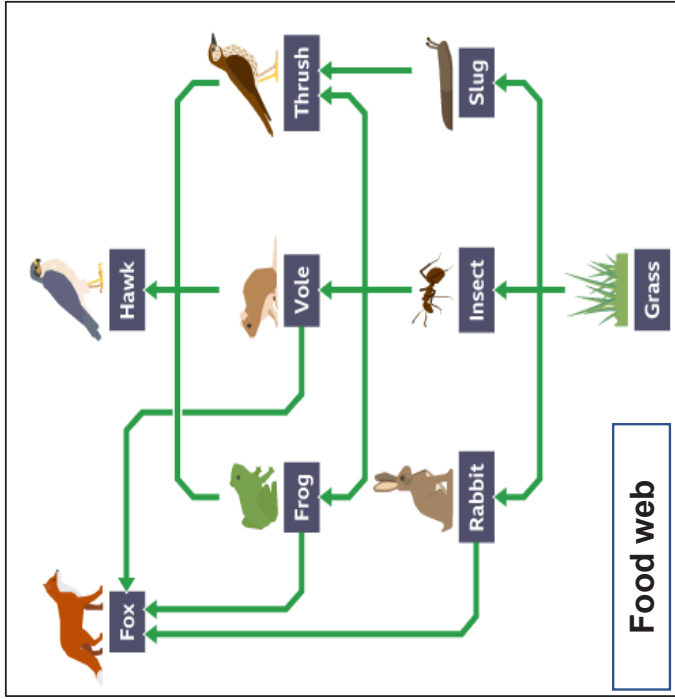


Food chains always start with a producer. This is usually a green plant or algae that completes photosynthesis to store energy from sunlight as glucose. Grass is the producer in the food chain. Photosynthesis provides the energy for most life on Earth.

What is the final consumer in this food chain?



A food chain with five trophic levels.



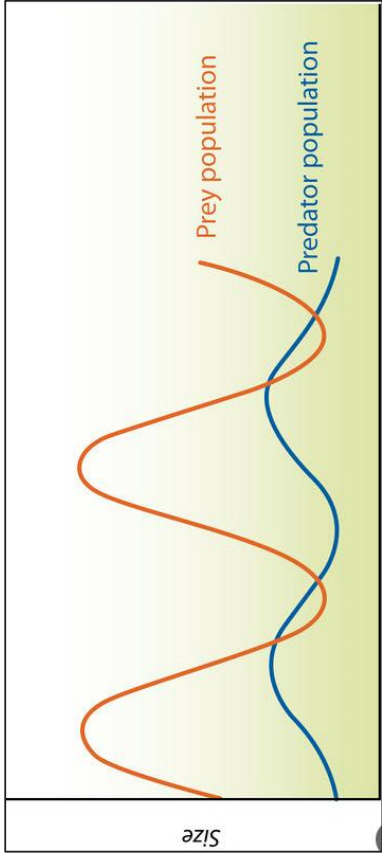
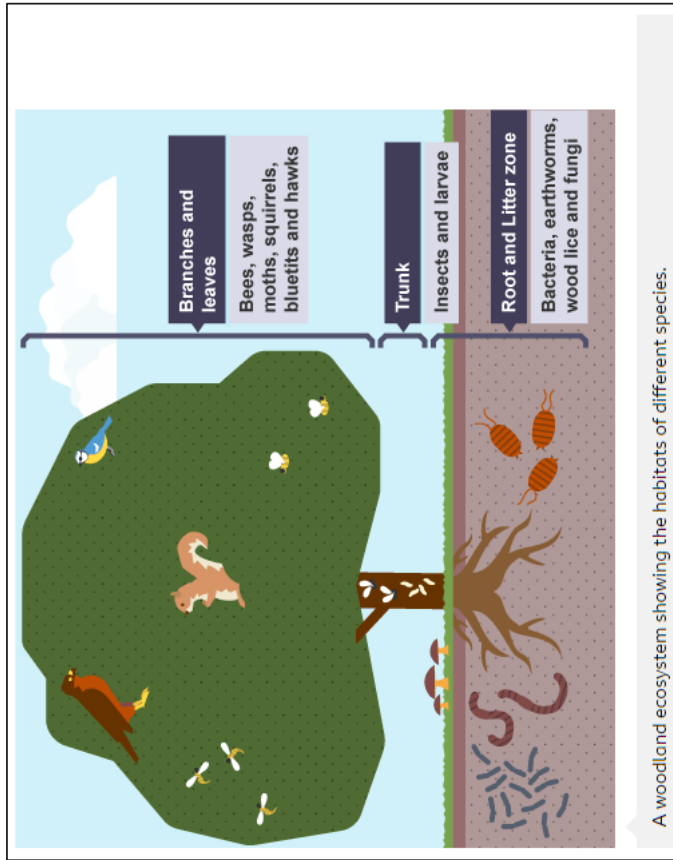
Interdependence - Key words and definitions

Ecology	The study of living organisms.
Food chain	Show the flow of energy from one organism to another.
Food web	Show how all the food chains in an ecosystem interact.
Population	Total number of a species.
Ecosystem	The interaction between a community of living organisms and their environment.
Interdependence	The is the dependence of all organisms in an ecosystem on each other.

Science – Interdependence

Producer	Producers are plants and algae, which photosynthesise.
Primary consumer	Primary consumers are herbivores, which eat producers.
Secondary consumer	Secondary consumers are carnivores, which eat primary consumers.
Tertiary consumer	Tertiary consumers are also carnivores. They eat secondary consumers.

Abiotic factors are non-living variables.
 Biotic factors are the interactions between organisms.
 Both affect diversity and distribution

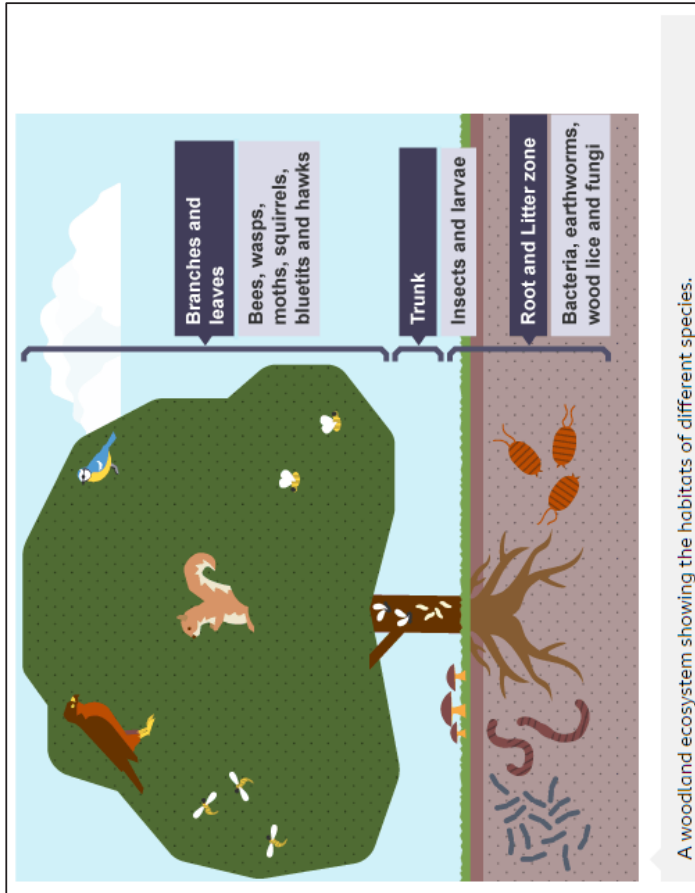


Predators and prey
 In a healthy, balanced ecosystem the numbers of predators and prey remain fairly constant. They can go up and down during each year but generally over the years, these increases and decreases remain fairly constant.

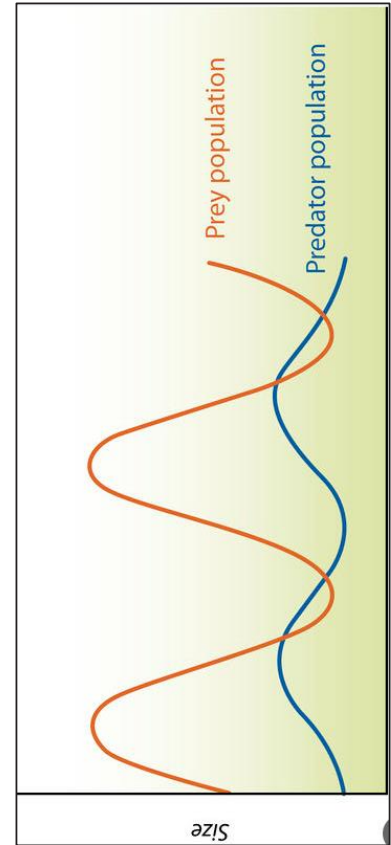
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Motion - Key words and definitions

Speed Speed is a measure of how fast an object is moving

What is speed?

Speed is a measure of how fast an object is moving.

To work out an object's speed you need to know the **distance** it has travelled and the **time** time taken.

Calculate speed using the equation $speed = \frac{distance}{time}$.

Rearranging the speed equation

The speed equation can be rearranged to find either the distance travelled or the time taken.

The speed equation is:

$$speed = \frac{distance}{time}$$



To find the distance the object has travelled, rearrange the speed equation to:

$$Distance = speed \times time.$$

To find the time taken rearrange the speed equation to:

$$Time = \frac{distance}{speed}.$$

Have a look at this example:

Calculate the distance travelled by a car in 10 s, travelling at a speed of 20 m/s

Speed = 20m/s

Distance = ?

Time = 10s

Step 1 - use the speed equation:

$$speed = \frac{distance}{time}$$

Step 2 - substitute in the values you know:

$$20 = \frac{distance}{10}$$

Step 3 - simplify the equation by multiplying both sides by 10 to remove the 10 from the bottom of the fraction on the right hand side:

$$20 \times 10 = \frac{distance \times 10}{10}$$

This cancels to give:

$$200m = distance$$

So the distance travelled is 200 metres

Motion - Key words and definitions

Distance time graph

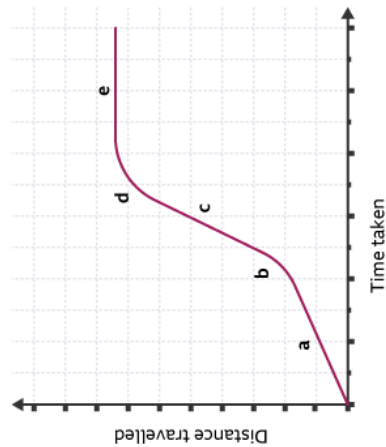
A useful way to represent the motion of an object. It shows how the distance moved from a starting point changes over time.

Resultant force

When two or more forces act on an object, the resultant force can be found by adding up the individual forces

How to interpret a distance-time graph

Have a look at this graph.



At **a**, the object is travelling at a **constant speed**, so it is shown with a straight diagonal line, where the **gradient** of the line tells you the speed.

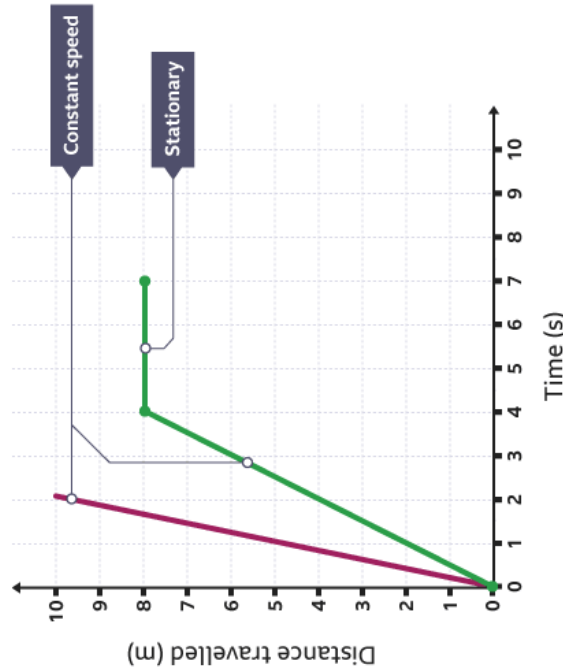
At **b**, the object is **accelerating**, so it is shown with a curved line which gets steeper.

At **c**, the object is travelling at a constant speed again, but this time it is faster, so the straight line is steeper - it has a larger gradient.

At **d**, the object is **decelerating**, so line is curved and gets less steep.

At **e**, the object is **stationary**, so its distance does not change as the time taken increases. This means that for a stationary object, the line is flat and the gradient (the speed) is zero.

Calculate the speed of the object represented by the green line in the graph, from 0 to 4 s.



$$\text{change in distance} = (8 - 0) = 8 \text{ m}$$

$$\text{change in time} = (4 - 0) = 4 \text{ s}$$

$$\text{speed} = \frac{\text{distance}}{\text{time}}$$

$$\text{speed} = 8 \div 4$$

$$\text{Speed} = 2\text{m/s}$$

Science – Motion

Science – Motion

Motion - Key words and definitions

Speed Speed is a measure of how fast an object is moving

What is speed?

Speed is a measure of how fast an object is moving.

To work out an object's speed you need to know the **distance** it has travelled and the **time** time taken.

Calculate speed using the equation $speed = \frac{distance}{time}$.

Have a look at this example:

Calculate the distance travelled by a car in 10 s, travelling at a speed of 20 m/s

Speed = 20m/s

Distance = ?

Time = 10s

Step 1 - use the speed equation:

$$speed = \frac{distance}{time}$$

Step 2 - substitute in the values you know:

$$20 = \frac{distance}{10}$$

Step 3 - simplify the equation by multiplying both sides by 10 to remove the 10 from the bottom of the fraction on the right hand side:

$$20 \times 10 = \frac{distance \times 10}{10}$$

This cancels to give:

$$200m = distance$$

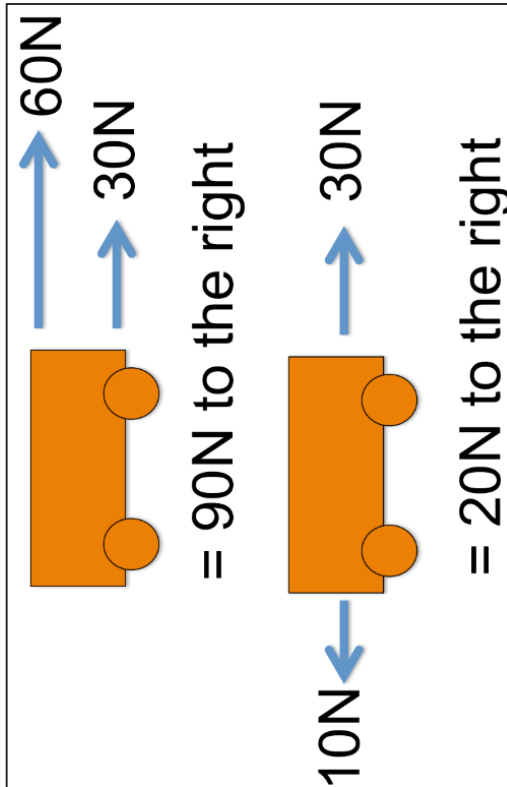
So the distance travelled is 200 metres

$$speed = \frac{distance}{time}$$



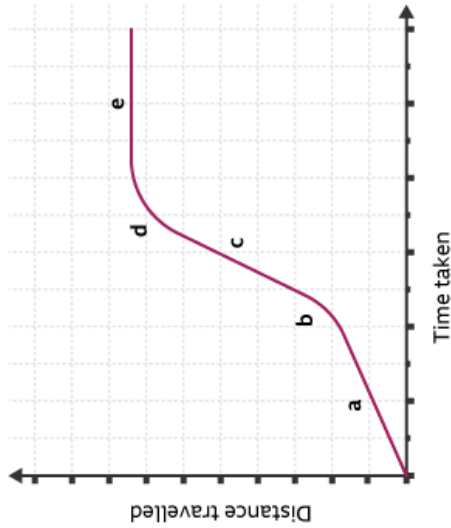
Motion - Key words and definitions

Distance time graph	A useful way to represent the motion of an object. It shows how the distance moved from a starting point changes over time.
Resultant force	When two or more forces act on an object, the resultant force can be found by adding up the individual forces



How to interpret a distance-time graph

Have a look at this graph.



At **a**, the object is travelling at a **constant speed**, so it is shown with a straight diagonal line, where the **gradient** of the line tells you the speed.

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Science – Motion

YEAR 8 Cycle 4 Knowledge Organiser

Cycle 4 in History will focus on: **Conflict: The causes of the First World War and the events of the First World War.** This will involve analysing why the war happened and the experiences of an ordinary soldier.

Key words and definitions

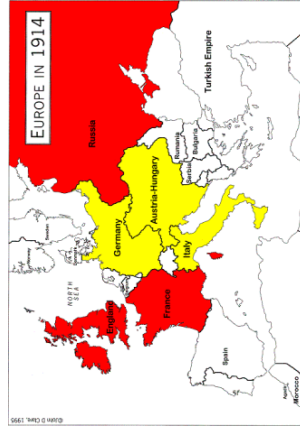
Militarism	Building up supplies of weapons and ammunition.
Alliances	An agreement between countries to help and support each other.
Imperialism	Building empires e.g. The British Empire.
Nationalism	Believing strongly that your country is the best.
Conscription	Forcing people to join the army.
Great powers	Countries which have great influence and military strength.
Kaiser	German word for emperor.
mobilise	Prepare and organise troops for fighting.
munitions	Things needed for war: shells, bullets, guns.
patriotism	Love for your own country.
Propaganda	Communications like posters and films designed to mislead people.
The Balkans	An area in south-east Europe
Western Front	Trench line from the English Channel to Switzerland
trench	Long, deep ditches used as a line of defence
No Man's Land	Area between two trench systems
Total war	War which affects civilians at home as well as the military overseas.

Analysing causes: When you are trying to analyse the causes of an events, try to place them in an order of importance. Once you decide your most important cause you can then judge how other causes link to it. If you take a cause away would the situation be the same?

Topic 1 WW1 causes and events

The First World War began in August 1914. The majority of people were very surprised that the major powers of Europe went to war with each other. However, there had been a build-up of tension over many years.

- 1882 Triple Alliance created (Germany, Austria-Hungary, Italy)
- 1906 British navy launched the Dreadnought
- 1907 Triple Entente created (Britain, France, UK)
- 1911 Morocco crisis
- 1914 Assassination of Archduke Franz Ferdinand. War began when Germany invaded Belgium. December – Christmas Truce



- 1915 Battle of Neuve Chappelle
- 1916 Battle of the Somme
- 1917 USA joined the war
Battle of Passchendaele
Russian Revolution
- 1918 Second Battle of the Marne
German Revolution
Armistice signed at 11a.m. on 11th November 1918
- 1919 Treaty of Versailles formally ended the First World War

History

History

Belong Believe Be Proud

Topic 2

Was Professor Ferguson right to blame Britain for causing World War One?

Militarism caused WW1:

1. All the nations of Europe were militaristic, but the governments of Germany and Austria-Hungary were especially so.
2. All the countries of Europe built up their armies and navies.
3. Germany and Britain clashed over the size of their navies.

Alliances caused WW1:

The Triple Entente alarmed Germany, which felt itself surrounded by the France-Russia alliance. The countries of Europe thought that the alliance system would act as a deterrent to war; in fact it tied the countries together so that, when one country went to war then the others would follow.

Imperialism caused WW1:

Countries who believed that they were superior thought it was alright to conquer and rule others – particularly if they were inhabited by races they thought were inferior. It led to HUGE tension when Kaiser Wilhelm of Germany decided that HE wanted some colonies too!

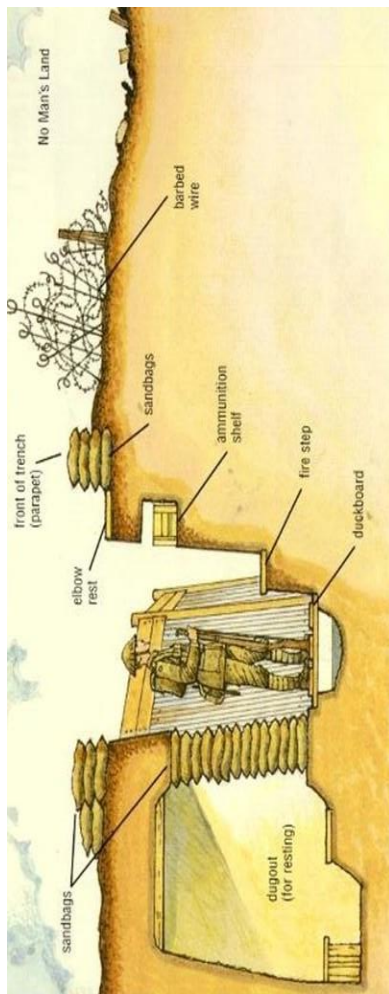
Nationalism caused WW1:

EVERYONE was nationalist in those days, and this helped cause war in two ways: (a) it made the people of countries like Britain, Germany and France more bellicose (warlike) People were enraged when someone insulted their country. (b) It made the races ruled by Turkey and by Austria-Hungary (such as the Serbs) want to be free to rule themselves. In the Balkans this was called 'Pan Slavism'. The most nationalistic of all were the Serbs. In 1914 a Bosnia Serb assassinated the Archduke of Austria.

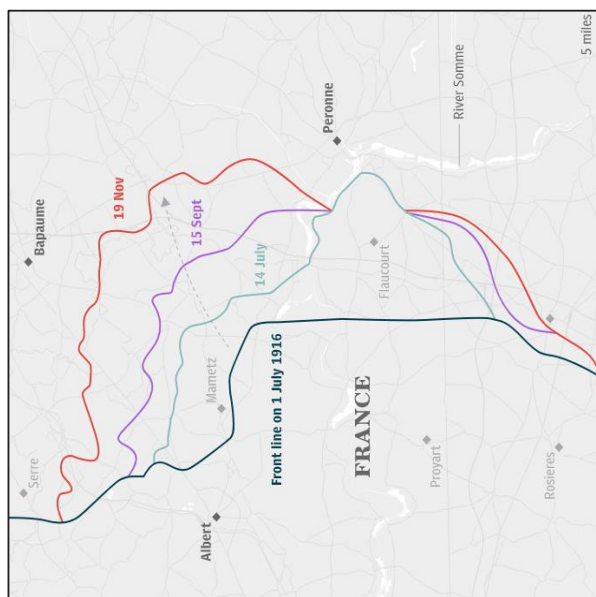
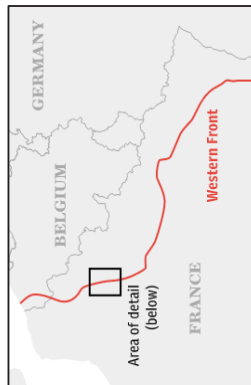
Topic 3

Can we improve Mr Ellis' diary of a First World War soldier?

Cross section of a typical First World War British trench



The Battle of the Somme



- The battle began on 1. July 1916
- British soldiers were told to walk towards the German trenches.
- 20,000 were killed on Day 1.
- General Haig was in command of the British army.
- 90% of casualties were caused by machine gun fire.

Cycle 4 Knowledge Organiser

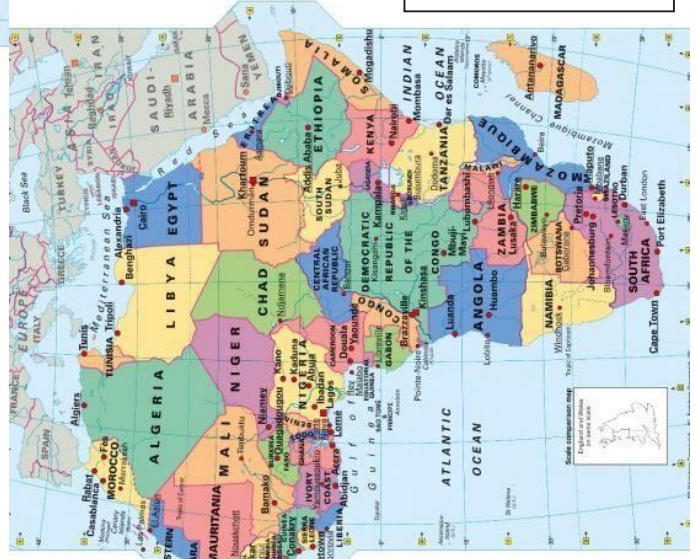
Cycle 4 in Yr 8 Geography will focus on the continent of Africa. We will look at the physical and human geography of this diverse continent and consider the challenges and opportunities for Africa now and in the future.

Key words and definitions	
Colonisation	An area is ruled by a foreign power.
Continent	Groups of countries form seven of these
Desert	Biome with under 250mm rain a year
Desertification	Land turns into desert permanently
Development	Happens when lives get better
Drought	A long time with little or no rain
Famine	Extreme food shortage
HDI	Human development index
Imperialist	Controlling an area by military force, economic dominance or diplomacy.
Income	Earnings or money coming in
Life expectancy	Average years lived from birth
Migration	Moving from one place to another
Natural resource	Something that is useful to people i.e. water, fuels, ores
Physical landscape	Natural features combine to make a landscape
Population density	The number of people who live in an area – may be dense or sparse
Extreme poverty	Living below the poverty line of \$1.90 with severe deprivation
Rainforest	Forested biome along the Equator
Savannah	Grassland biome
Urbanisation	Increase in proportion of people living in cities in a county
Vulnerability	How easily something can be harmed
Wilderness	Wild area where humans have a minimum impact
Decline	When something goes down
Beneficial	Something which is good – provides benefits
Varied	Changes over time or from place to place
Diverse	Different in many ways

Topic 1: Maps of Africa

Learn where the following are located:

- Atlas Mountains
- Congo Basin
- Rift Valley
- Sahara Desert
- Sahel



- Learn where the following are located:
- Algeria
 - Nigeria
 - South Africa
 - Sudan
 - Uganda
 - Egypt
 - Kenya
 - Zambia
 - Somalia
 - Ethiopia

Topic 2: Challenges in Africa

Colonial past: Before 1860 there were many different African kingdoms with their own culture. From the 1880s Africa was colonised by European nations.

Some say the 'scramble for Africa' brought civilisation, but others say Africans were exploited, as is shown in A.

Poverty: *'Africa is blessed with abundant natural resources but plagued by poverty. The colonial period caused considerable damage to the self-confidence of the people, stifled economic development and choked off growth in entrepreneurial skills. Manufacturing was vigorously discouraged... For centuries, even up to now, Africa has been primarily an exporter of raw materials and natural produce.'* Joseph Amamoo

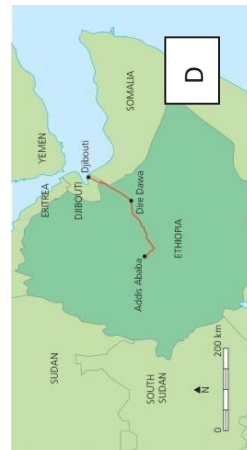
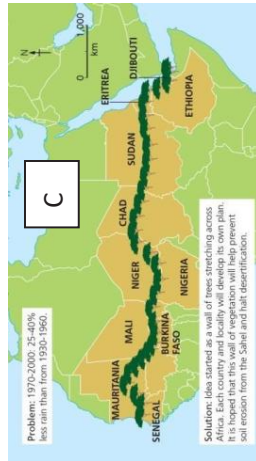
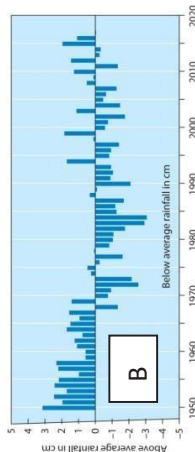
Corruption & poor leadership: *'Africa is not poor, it is poorly managed'*. Ellen Johnson Sirleaf

Conflict: Since independence several African countries have had civil wars, an example being Sudan.

Climate change: Rainfall is becoming more unreliable in the Sahel (see B), increasing desertification.



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Topic 3: Opportunities in Africa

Physical landscape: *'Africa! The world's greatest wilderness. The only place on Earth to see the full majesty of nature. It includes immense deserts, a vast rainforest, and for thousands of miles the most fertile savanna in the world.'* David Attenborough

Innovation: People can solve problems as well as cause them. Yacouba Sawadogo used a traditional technique called Zai and tree planting to reclaim land from the desert. Trees are being planted across the Sahel to reduce desertification (see C).

Youthful population: 200 million Africans are between 15 and 24 years old... by 2050, one out of every four workers in the world is likely to be an African. This African labour force will be young and relatively cheap. Therefore, it is to be expected that multinational companies of the West looking for cheap labour would be likely to move their businesses to Africa, providing more jobs.

Investment: China is spending money on projects in Africa. This includes the new railway line from land-locked Addis Ababa in Ethiopia to the port of Djibouti (see D).

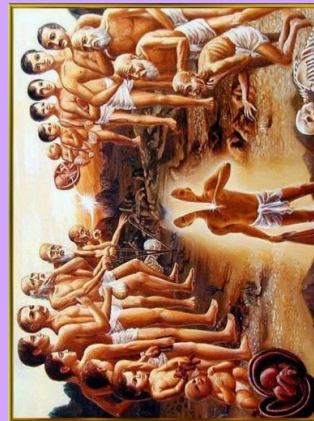
Tourism: Visits to eco-tourists lodges (see E) brings money and jobs with little harm.

Cycle 4 Knowledge Organiser

Cycle 4 in RS will focus on: Life after death. There are many religious and non-religious beliefs about what happens after death.

Some common images of what life after death is believed to look like for some people

Key words and definitions	
The afterlife	The belief that there is a place after death.
Heaven	A state of peace with God.
Hell	A place without God, sometimes believed to be a place of torture.
Purgatory	A place in between heaven and hell (in Catholicism)
Nirvana	A state of peace where the cycle of Samsara has been broken (a Buddhist belief)
Moksha	The end of the cycle of Samsara. Being with God.
Ghosts	A person who is dead is believed to appear in a hazy image.
Humanists	A group which focuses on the importance of human beings and human actions without the belief in a God.
Reincarnation	The cycle of birth, life, death and rebirth.
Near death experience	A person who almost dies but doesn't. Or someone who is pronounced medically dead but is resuscitated. Some people believe they saw an afterlife, lights or God.



In RS you will notice that there are many very different beliefs about life after death.

Religious Studies

Belong Believe Be Proud

Humanist beliefs

Humanists are a group who believe that humans have moral responsibility for their actions and human interest should be at the heart of decision making. Humanists do not believe in a God.

Humanists believe that living a good life will benefit them whilst they are alive on earth and their actions on earth will not influence anything after death.

As a result of not believing in a God, humanists do not believe in an afterlife. Humanists believe that when a person dies there is no place the body or soul goes, humanists believe that death is the end.



Christianity

For Christians, they believe their actions on earth will influence their afterlife.

Most Christians believe in heaven and some Christians believe in a hell. Heaven is a state of peace which is eternal, and God is there. The beliefs in hell differ. Some Christians believe hell is eternity without God, whilst other Christians also believe God isn't there, but that hell is a place of torture and punishment.

Jesus died to forgive humans of their sins and allow them to have a relationship with God so they can go to heaven and be with God. Christians need to follow the teachings in the Bible to get to heaven which is their fundamental goal.

Islam

For Muslims, they believe their actions on earth will influence their afterlife.

Muslims believe in Judgement Day, the last day of earth where everyone who has ever lived will be resurrected and God will judge their actions from their life and send them to Paradise or Hell.

Muslims believe Paradise is a place of peace with gardens and rivers and God and the prophets are there. Paradise is eternal and this is the ultimate goal for Muslims. Muslims must follow the teachings of the Qur'an to reach Paradise.

Muslims believe Hell is an eternal place of torture where sinners are sent. To avoid being sent to Hell, Muslims try their best to demonstrate that they have followed the teachings of the Qur'an.

Hinduism

Hindu's believe in the cycle of Samsara, the belief that you are born, live, die and then are reborn. Being reborn is called reincarnation and actions in your life determine what you are reincarnated into. If you have lived a good life you may be reincarnated into a human, if you haven't lived a good life you may be reincarnated into an animal.

Hindus believe that the cycle of Samsara needs to be broken so they can achieve Moksha, a state of peace with God.

In LC4 we'll be learning how to talk about what we do in our free time. You'll be talking about the TV programmes and films you like to watch, the books you read, and what you do online

Quand je suis en ligne
 je vérifie mes emails
 je surfe sur internet
 je télécharge de la musique (sur Spotify etc.)
 j'envoie des emails
 je fais mes devoirs
 je fais des recherches sur Internet
 je chatte sur Facebook
 je me connecte sur Snapchat

When I'm online...
 I check my email
 I surf the web
 I download music (from Spotify etc.)
 I send emails
 I do my homework
 I do research on the web
 I chat on Facebook
 I log in to Snapchat

Translation task →

Choose to translate into English (easy) or French (harder).

LOOK at one line of the text at a time
 COVER the language you're translating into
 WRITE your translation
 CHECK and correct mistakes with purple pen

J'aime _____ **parce que...** **I like** _____ **because...**
 ça me fait rire it makes me **laugh**
 ça m'intéresse it **interests** me
 ça me fait peur it **frightens** me
 ça me fait sursauter it makes me **jump**
 ça me fait pleurer it makes me **cry**
 ça m'informe it **informs** me
 ça me fait penser (à...) it makes me **think** (about...)
 ça me fait réfléchir it makes me **reflect**
 ça me fait mourir de rire it makes me **LOL**

Je n'aime pas _____ **parce que...** **I don't like** _____ **because...**
 ça ne m'intéresse pas **du tout**
 ça ne me fait pas **du tout** rire
 ça ne m'effraie pas
 ça ne me fait pas couler des larmes
 ça ne me **dit** rien
 ça me **dégoûte** it **disgusts** me

J'adore regarder des comédies	I love watching comedies
parce que c'est amusant/rigolo/marrant.	because it's fun.
Je déteste regarder des films d'horreur	I hate watching horror films
parce que ça me fait peur!	because it makes me scared!
Je préfère regarder des <i>documentaires</i>	I prefer to watch <i>documentaries</i>
car c'est très/vraiment <i>intéressant</i> .	Because it's very/really <i>interesting</i> .
J'aime lire des <i>romans</i> policiers	I like to read <i>crime novels</i>
parce que j' aime les enquêtes.	because I like the investigations
et j' trouve cela <i>intéressant</i> .	and I find them <i>interesting</i> .
Quand j' suis connectée à internet	When I' m connected to the internet
je vérifie mes courriels et <i>mes messages</i>	I check my emails and <i>my messages</i>
et j' mets à jour ma page personnelle/mon mur.	And I update my profile page/my wall,
De temps en temps j' télécharge	From time to time I download
de la musique sur mon portable.	music on my phone.

Writing task 1:

Write a mini essay about the things you do in your free time:

- Say your favourite film and actor, and say why you like them
- Describe a type of TV programme or book you *dislike* and why
- Say what you did online yesterday/last week
- Mention something you're *going* to do next weekend

Writing task 2:

Write a synopsis of a book/TV programme or film you like.

Write 2 sentences for each of these bullet points:

- What type of film it is, and why you like it
- Describe an actor in the film (e.g. appearance, clothes, etc.)
- Describe a film you saw recently at the cinema
- Talk about a film you'd like to see in the future

Time phrases

la semaine dernière *last week*
 l'année dernière *last year*
 avant hier *the day before yesterday*
 hier *yesterday*
 aujourd'hui *today*
 demain *tomorrow*
 le lendemain *the day after*
 la semaine prochaine *next week*
 l'année prochaine *next year*

Opinions

j'aime *I like*
 je n'aime pas *I don't like*
 j'adore *I love*
 je déteste *I hate*
 je préfère *I prefer*
 j'aimerais (bien) *I'd (really) like*
 j'ai hâte de (+verb) *I look forward to*

Les émissions (TV programmes)

les informations *the news*
 les documentaires *documentaries*
 les comédies *comedies*
 la météo *the weather*
 les télé-réalités *reality shows*
 les jeux télévisés *game shows*
 les émissions de sport *sports shows*
 les feuilletons *soap operas*

Making past participles

-ER verbs *remove ER, add É*
 -IR verbs *remove R*
 -RE verbs *remove RE, add U*

Avoir (to have)

j'ai *I have*
 tu as *you (sing.) have*
 il/elle a *he/she have*
 on a *we have*
 nous avons *we have*
 vous avez *you (pl) have*
 ils/elles ont *they (m/f) have*

Être (to be)

je suis *I am*
 tu es *you (sing.) are*
 il/elle/on est *he/she is, we are*
 nous sommes *we are*
 vous êtes *you (pl) are*
 ils/elles sont *they (m/f) are*

VOCABULAIRE

Key verbs (past participle)

faire (j'ai fait) *to do (I did)*
 visiter *to visit*
 manger *to eat*
 boire (bu) *to drink (drunk)*
 prendre (pris) *to take (taken)*
 retrouver *to meet*
 voir (vu) *to see (seen)*
 regarder *to watch*
 acheter *to buy*
 lire (lu) *to read (read)*
 envoyer *to send*
 penser *to think*

Adding detail to your writing

très *very*
 assez *quite*
 vraiment *really*
 aussi *also*

Les films...

d'horreur *horror*
 d'action *action*
 de science-fiction
 policiers *crime*
 romantiques *romance*
 d'aventure *adventure*
 d'arts martiaux *martial arts*

Verbs which use être in the perfect tense

aller *to go*
 arriver *to arrive*
 monter *to climb*
 partir *to leave*
 sortir *to go out*
 venir *to come*
 entrer *to enter*
 retourner *to return*

Quand il fait *When it's*

beau <i>nice</i>	on fait <i>we do</i>	du VTT <i>mountain biking</i>
froid <i>cold</i>		du skate <i>skateboarding</i>
chaud <i>hot</i>		du bowling

Quand il pleut *When it's raining*

beau <i>nice</i>	on regarde <i>we watch</i>	un film <i>a film</i>
froid <i>cold</i>		une émission <i>a TV programme</i>
chaud <i>hot</i>		

S'il fait *If it's*

beau <i>nice</i>	on va <i>we go</i>	au café
froid <i>cold</i>		au cinéma
chaud <i>hot</i>		au parc

S'il pleut *If it's raining*

on joue <i>we play</i>	au foot
on surfe sur internet <i>we surf the web</i>	au basket

Examples:

je suis allé *I went (m)*
 je suis allée *I went (f)*
 il est parti *I left (m)*
 elle est partie *she left (m)*
 on est partis *we left (pl)*

All your LC4 vocab is also on Quizlet:



Cycle 3 in Music will focus on the way musical elements are commonly used in Musical Theatre. We will use Defying Gravity by Stephen Schwartz as our set study work.

Key words	
Leitmotif	A recurring figure that is used to symbolise a person, place or mood on screen
Ostinato	Short repeated motif.
Interval	The difference in pitch between 2 notes.
Modulate	Changes key.
Polyphonic	Lots of different parts doing different things at the same time.
Syllabic	Uses one note per syllable.
Melisma	Stretching the syllable over many notes,

All of the information on this knowledge organiser relates to Defying Gravity from Wicked - The Musical - your listening & appraising set study for this cycle. You will be assessed on your knowledge of the musical features and key words in this Knowledge Organiser and your score on these will be used as part of this learning cycle assessment and determine a suitable KS4 music pathway for those wishing to study music as an option.

TONALITY

In D Major, but modulates briefly through different sections.

RHYTHM & METRE

Mostly in 4/4 but tempo, key and metre change frequently in different sections.

INSTRUMENTATION

Large, extended orchestra - full orchestra plus extra pop and electronic instruments (synthesisers, electric guitars, keyboards etc.) which help create a modern, pop feel. 2 female soloist and a full chorus.

MELODY

Leitmotif to represent different events and characters. Mostly syllabic. Often uses a rising 5th interval.

TEXTURE

Changes to create different moods. Verses are mostly melody & accompaniment. Chorus uses ostinato in high keyboards to create a flying effect. Ending is polyphonic between chorus, soloists and instruments.

Music

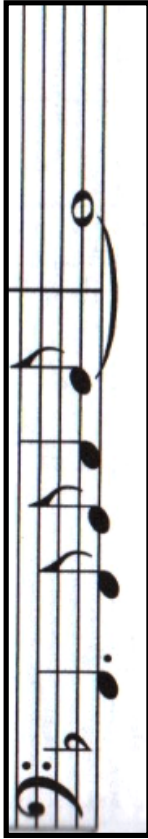
Cycle 3 in Music will focus on the way musical elements are commonly used in Musical Theatre. We will use Defying Gravity by Stephen Schwartz as our set study work.

WICKED - DEFYING GRAVITY

Scan the QR code for a full recording with score for Defying Gravity.

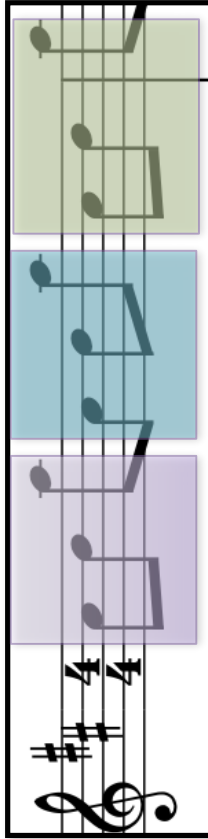


DEFYING GRAVITY MOTIF



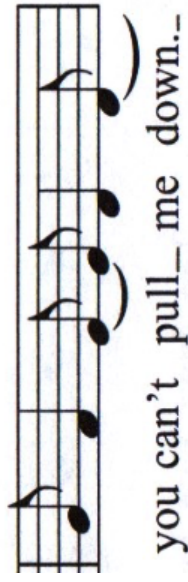
Conjunct, ascending motif occurs frequently throughout different sections and on different instruments. You may be asked to write this out, so learn it!

FLYING MOTIFS



A 3 note ostinato repeated throughout the chorus. Symbolises flying, as high pitched and soaring over the rest of the orchestra. Ascending, first 2 notes conjunct, final note is a rising 5th from the previous note. Syncopated. You may be asked to write this out, so learn it!

WORD PAINTING EXAMPLE



Word painting is where the music reflects the meaning of the words and is commonly used in music for stage and screen to help reinforce the story. A recurring theme in Defying Gravity is “You can’t pull me down / bring me down”, and the words “bring me down” or “pull me down” are descending in pitch - they are quite literally going down in pitch.

Cycle 2 focus: How to devise drama based on real life and historic events.

What is a stimulus?

The starting point, idea or inspiration for your devised drama. It is what you base your drama around.

Examples of stimuli for using WW1 for your devising:



Your piece could focus on the signing up process and social pressure on men to go and fight.



Your piece could focus on the thousands of boy soldiers who signed up under aged.



Your piece could focus on the events leading to the beginning of WW1. The impact the assassination had and then the alliances formed between nations.



Your piece could focus on women's roles during the war, the impact their contribution had and how that effected equality.

New Devising Skills

Key word/term	Definition
Chorus	Those who perform vocally in a group as opposed to those who perform singly.
Ensemble	Actors working together to physically create one single effect. All the actors are of equal importance.
Base	The person/people supporting a lift or balance. The 'base' acts as a foundation or support.
Spotting	'Spotters' are people who stand prepared with arms out around a lift or balance to assist if the lift or balance struggles to come up come down or maintain.
Stimulus	The starting point, idea or inspiration for your devised drama. It is what you base your drama around. It could be a photo, a song, a poem etc
Devising	A group collaboration to create your own drama performance based on a given stimulus.

Drama

Belong Believe Be Proud

Ensemble work

Actors working together to create a piece of theatre/drama. All the actors are of equal importance, and have roughly the same amounts of time on stage.

Ensemble movement is when all the cast work together to **physically** create one single effect.

This approach to acting aims for an effect which is achieved by all members of the cast working together rather than emphasizing individual performances.



Physical Theatre

A form of theatre that puts emphasis on movement rather than dialogue.

Physical theatre uses the body to tell stories and explore themes.

It uses techniques such as movement, mime, gesture and dance and can be used to explore complex social and cultural issues.



Spellings to learn this cycle.

Devising Stimulus Ensemble Physical theatre Physicality Collaboration

Chorus Counter-balance Frantic Assembly Proxemics Characterisation

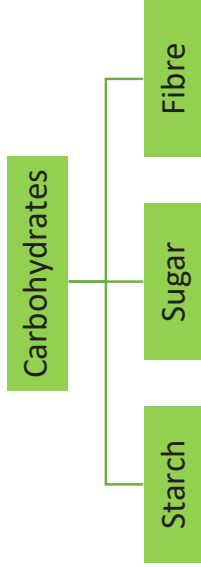


This Learning cycle in Food covers: carbohydrates, special diets and cooking methods.

Food Cycle Knowledge Organiser

Quiz 1 General Knowledge

Carbohydrates



Key words and definitions:	
Nutrient	A chemical in foods that your body can absorb and use
Carbohydrate	A macronutrient used for energy
Starch	A complex carbohydrate used for long term energy
Sugar	A simple carbohydrate used for short term energy
Fibre	A type of complex carbohydrate used to fill you up and clean out your digestive system
Sources	Foods that contain high amounts of a nutrient
Functions	The jobs nutrients do in your body
Excess	If you have to much of a nutrient in your diet
Deficiency	If you don't have enough of a nutrient in your diet
Allergy	A medical condition, results in an allergic reaction which might be damaging to your health or even fatal.
Intolerance	A reaction to a food that will cause some discomfort but that is not threatening to your life.
Allergen	The food or ingredient that causes an allergic reaction.
Vegetarian	Limits the animal products they eat - there are different types.

Sources of starch, sugar and fibre: [Use this link](https://www.nhs.uk/live-well/healthy-weight/why-we-need-to-eat-carbs/) <https://www.nhs.uk/live-well/healthy-weight/why-we-need-to-eat-carbs/> or **google NHS Livewell Carbohydrates.**
Find and learn the sources of starch, sugar and fibre.

Functions of fibre:
Insoluble fibre – collects rubbish, keeps your system clean, prevents constipation, diverticular disease and cancer in your colon.
Soluble fibre – makes you feel fuller for longer, feeds healthy gut bacteria and can help lower cholesterol.

Function of sugar: gives you energy quickly, if you don't use it immediately it is converted to fat and stored.
Excess sugar= tooth decay, gum disease, obesity, type 2 diabetes.
How much sugar should you eat? As little as possible, your body can make it from other foods.

Function of starch: a slow and steady release of energy.
Other nutrients in starchy foods: B vitamins, calcium, iron.
How much starch should you eat? 30% (1/3) of the food you eat should be starchy food.
Is starch healthy? The NHS recommend that you get 50% of your energy from starch, it contains less than half the calories of fat and also bulks out your diet if you choose wholegrain varieties.

Quiz 2 Key Words

To form an idea about something. To assess

To think carefully or deeply about

Evaluate

Reflect

Quiz 2 Processes

Cooking Methods

Boiling

Food is cooked in deep boiling liquid (water, stock, wine etc.) in an open or covered saucepan.

Simmering

Like boiling, but the liquid is kept just below boiling point in an uncovered pot.

Steaming

Food is placed on a container and cooked in the steam from boiling water in a covered pan or steamer.

Stewing

Cooking food in its own juices with a little additional liquid, in a covered pan, at simmering point.

Braising

Pieces of food are first browned in a little fat, then cooked with some liquid in a closed pan.

Deep-frying

Frying pieces of food in a deep pot or fryer with plenty of hot oil or fat.

Sautéing

Cooking small or thin pieces of food in a little very hot oil or fat. The frying pan is shaken constantly to stop the food from burning.

Flambéing

After frying, alcohol is added to the food in the frying pan and set on fire. This gives added flavour to the food.

Pan-frying

Frying food in a little oil or butter using a frying pan over moderate heat.

Broiling/grilling

Cooking food like steak or fish, over or under open heat, e.g. under the oven grill, or on a barbecue or hot plate.

Roasting

Cooking food like meat or poultry with some fat in a hot oven [between 200-240 degrees centigrade].

Baking

Cooking food like cakes, pies, bread etc. in a closed oven at a temperature of between 120-240°C.

Frying safety:

1. Do not leave pan unattended.
2. Use dry food.
3. Reduce heat if it smokes.
4. NEVER put water on a fat fire.

Blanching (part cooking)

1. Food is submerged in boiling water for a few mins.
2. Food is plunged into cold water.



Food Knowledge Organiser

Quiz 3 General Knowledge special diets

Lactose intolerance to the sugar (lactose) in cow's milk.

Coeliac disease an allergy to the protein (gluten) in wheat. Some people are also allergic to the proteins in other cereals eg oats, corn.

Gluten intolerance intolerance to the protein (gluten) in wheat.

The **14 most common allergens** have to be highlighted on food labels BY LAW in the ingredients list (underlined or put in bold text). Think of the reasons why this is the law. Look them up.

Vegetarians:

Pescetarians - no meat

Lacto-ovo vegetarians - no meat, no fish

Lacto vegetarians - no meat, no fish, no eggs

Vegans - no meat, no fish, no eggs, no animal products (honey, gelatin (in jellies, gravies, made from bones and cartilage)). They need to eat foods fortified with Vitamin B12 because it is only found in animal foods. (Hint - **pesce = fish (Italian), lacto = milk, ova/ovum = egg**)



Religious diets:

Halal and Kosher meats are slaughtered in a particular way.

Ramadan is an Islamic festival that prohibits eating and drinking during daylight hours.



Religion	Alcohol	Pork	Beef	Lamb	Chicken	Fish
Islam	No	No	Halal	Halal	Halal	No
Hinduism	No	No	No	Yes	Yes	Yes
Judaism	Yes	No	Kosher	Kosher	Kosher	Yes
Sikhism	No	No	No	Yes	Yes	Yes
Buddhism (strict)	No	No	No	No	No	No
Seventh Day Adventist	No	No	No	No	Yes	Yes
Rastafarian	No	No	No	No	No	No

Quiz 1 Key Words

Accurate

Reliable, Exact, Correct

Timbers Cycle Knowledge Organiser

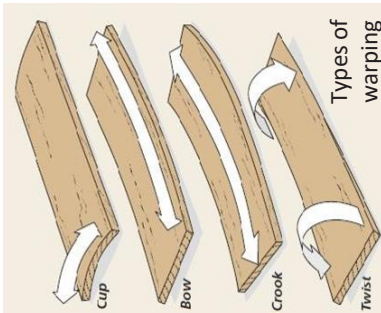
Assemble

To fit separate parts together

Quiz 1 General Knowledge

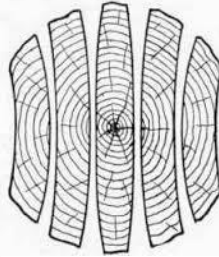
Natural timbers

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 refer to how hard the wood is.



Warping is the bending or twisting that happens to natural timber as it dries out.

Manufactured boards do not have a grain in the same way, which means they are much more stable and do not warp like natural boards.



Quiz 1 General Knowledge

Manufactured boards

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



Plywood

- Plywood is very strong in all directions; often stronger than solid wood.
- Outside layers are finished with a higher-quality veneer.
- Must always include an odd number of layers with the grain running in alternating directions.
- **Used in construction, furniture.**
- Flexi ply is a form of plywood but it is extremely flexible.

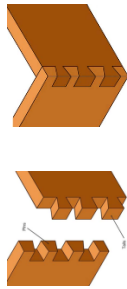
Alternate layers of wood (veneers) are glued together at 90 degrees to each other, to build up the thickness needed.

Quiz 1 General Knowledge

Wood joints

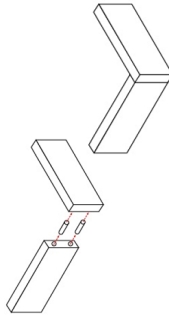
Dovetail joint

A very strong because of the way the 'tails' and 'pins' are shaped. This makes it difficult to pull the joint especially when glued. Used in box constructions such as drawers, jewellery boxes and other pieces of furniture where strength is required.



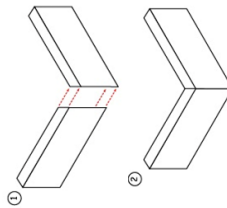
Dowel joint

This joint consists of drilling accurate holes in both sections of wood and joining them with dowel pegs. Within industry this is often used to construct flat pack furniture.

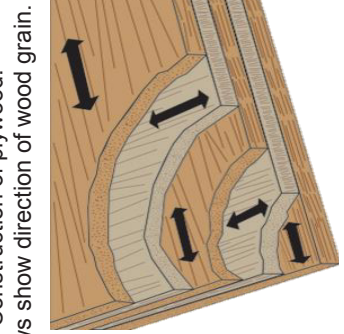


Mitre joint

Mitre joints are often used to produce the corners of picture frames and boxes. The mitre needs to be cut at a 45 degree angle, this is often used with a mitre saw that can cut at many different angles.



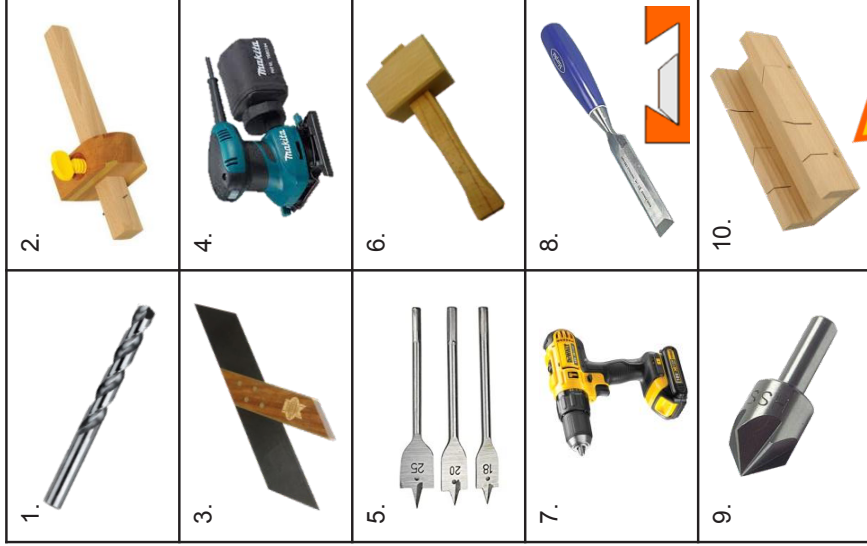
Construction of plywood.



Arrows show direction of wood grain.

Timbers Cycle Knowledge Organiser

Quiz 2 Properties	
Properties	Uses
Softwood	
<ul style="list-style-type: none"> • Easy to work with • Quite strong • Lots of knots 	<ul style="list-style-type: none"> • Furniture • Construction • Door frames
Hardwood	
<ul style="list-style-type: none"> • Hard • Easy to work • Resistant to rot • Expensive 	<ul style="list-style-type: none"> • Flooring • Fine furniture • Jewellery boxes
<ul style="list-style-type: none"> • Hard • Tough • Finishes well 	<ul style="list-style-type: none"> • Laminated furniture • Children's toys • Flooring



Quiz 2 Properties	
Wood Properties	
Density	Compactness of a material, defined as mass per unit volume
Stability	Ability to resist changes in shape over time
Stiffness	The ability to resist bending

Quiz 3 Processes	
Tool names and uses	
1. Twist drill	Cutting tool used to create holes
2. Marking gauge	To mark a line parallel to an edge
3. Mitre square	Used to mark out 45° angles
4. Palm sander	Sanding, finishing wood surfaces
5. Flat bit	Drills larger holes in wood
6. Mallet	Used with chisels and for knocking pieces of wood together
7. Power drill	Drills holes in material – battery powered and hand held
8. Bevel chisel	Bevelled blades can get in corners for cutting dovetails
9. Counter sink	Creates a cavity in material so screw heads can be flush to the surface.
10. Mitre box	Used to guide a hand saw to make precise mitre cuts



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

Metal Cycle Knowledge Organiser

Quiz 1 General Knowledge

Planning, cutting and shaping

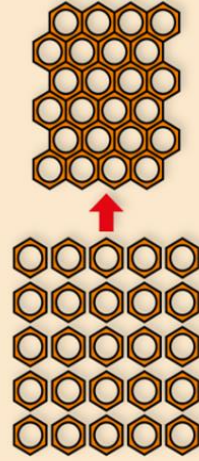
Wastage = total area of material – area of material used for shapes

Nesting



Arrange shape efficiently and close together.
Reduces amount of waste material between each shape.

Tessellation



Used for shapes that **fit perfectly together** with no space between them.
Waste material is kept to the edge.

Area of a square
A = base x height

Area of a triangle
A = 1/2 x base x height

When cutting shapes from materials, try to determine the best way to organise the shapes so that as many as possible can be cut from the least amount of material, here are two examples:

Quiz 1 Key Words

The standard, or excellence of something

An item, or substance that is manufactured

Quality

Product

Quiz 2 Properties

Metal Properties

Non-ferrous metals and properties

Aluminium



- Lightweight
- Corrosion resistant
- Malleable
- Tough
- High electrical & thermal conductivity

Zinc



- Corrosion resistant
- Used mainly for plating (covering) metals like steel and iron.

Ferrous metals and properties

Cast Iron



- Iron + Carbon (2-4%)
- Hard skin but brittle, soft core.
- Good in compression
- Poor corrosion resistance





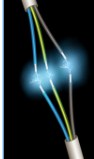
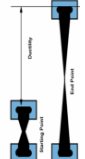


Mild Steel

(low carbon steel)



- Iron + Carbon (0.25%)
- Malleable
- Ductile,
- Tough.
- Poor corrosion resistance

Metal Cycle Knowledge Organiser

Quiz 2 Properties		Material Properties	
Insulator		A material which does not conduct electricity or heat.	
Hardness		The resistance to indentation, scratching and wear and tear at the surface.	
Toughness		The ability to withstand a sudden impact.	
Thermal conductivity		The ability to transfer heat through the material.	
Electrical conductivity		The ability to allow electricity to pass through the material.	
Ductility		The ability to draw the material out so it gets longer and longer and thinner and thinner.	
Malleability		If a metal is able to be hammered or pressed into a flatter and wider shape without breaking or cracking.	
Corrosion Resistance		The ability of a material to be weather resistant and not rust.	

1. 	2. 
3. 	4. 
5. 	6. 
7. 	8. 
9. 	10. 

Quiz 3 Processes


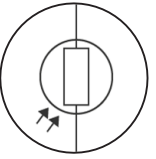

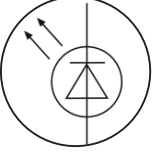

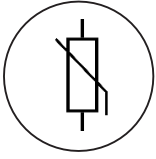

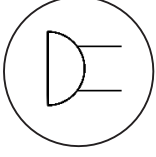
Tool names and uses	
1. Metal vice	To hold work whilst cutting/ filing.
2. Hacksaw	Cutting straight lines in metal.
3. Tin snips	Cutting straight lines in sheet metal.
4. Sheet metal nibbler	Cuts through sheet metal.
5. Twist drill	Cutting tool used to create holes
6. File/s	Removes fine amount of material from work.
7. Ball peen hammer	Use to shape metal/ or use with centre punch.
8. Steel rule	Measuring material in cm/mm.
9. Centre punch	Make an indent in metal before drilling.
10. Scriber	Use to mark out lines/ design on metal.



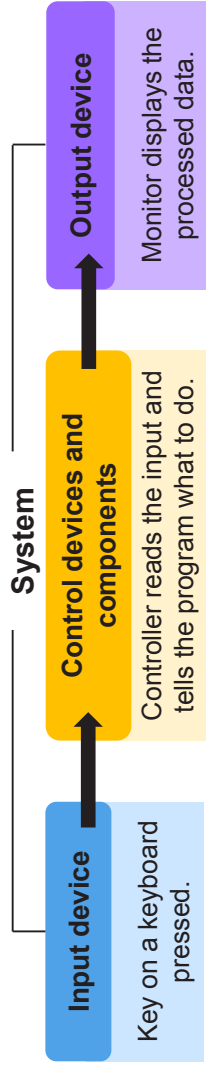
Electronics & CAD/CAM Cycle Knowledge Organiser


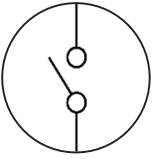

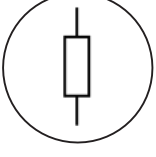

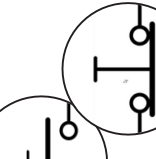
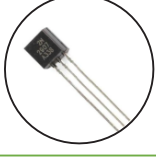
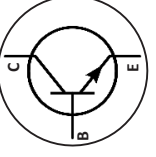
Quiz 1 General Knowledge

Electronics

Picture	Sensors (input devices)	Symbol	Picture	Outputs	Symbol
	<p>Light-dependant resistor (LDR) Detects changes in light levels. The resistance decreases as the brightness increases. LDRs are used in outdoor street lamps</p>			<p>Light-emitting diode LED Gives out light when current passes through it. Low voltage/ low power consumption. E.g. power indicators and TV screens</p>	
	<p>Thermistor Its resistance changes with temperature. Thermistors are often used where it is important to know the temperature, such as inside a refrigerator</p>			<p>Buzzer Makes a noise when a current passes through it. Useful in a sensing device to give people a warning that something needs their attention</p>	

A system is made up of several parts that work together as a whole to carry out a function.
All electronic systems require an **input**, a **process** (control device...) and an **output**.



Picture	Control devices and components	Symbol	Picture	Control devices and components	Symbol
	<p>Toggle switch Used to complete or disconnect a circuit. Can be turned on (closed) to let current flow or turned off (open) to stop current flow.</p>			<p>Resistor It can be added to a circuit to change its resistance. It can restrict the flow of electricity in a circuit.</p>	
	<p>Push to make switch Current flows when pushed in.</p> <p>Push to break switch Circuit is broken when pushed in</p>			<p>Transistor Used as either a electrical switch or a current amplifier. When a small voltage at the Base connection is detected, current can flow between the Collector and the Emitter.</p>	

Electronics & CAD/CAM Cycle Knowledge Organiser

Quiz 2 Processes

2D Design tools

1. Select	Select shapes and icons	7. Text	Allows text to be written on work
2. Straight line	Draws a straight line	8. Zoom to selected area	Allows user to see close up within the workspace
3. Circle	Draws a circle	9. Delete any object	Deletes selected object
4. Curved line	Draws curved shapes	10. Delete part of line	Delete a part of a line between two points
5. Rectangle	Draws rectangular shapes	11. Grid lock	Moves cursor in 1 cm increments
6. Dimensions	Measures in mm between two points	12. Step lock	Moves cursor in 1 mm increments



Quiz 3 Computer Aided Design

CAD software is commonly used by designers to create design ideas, develop and model 2D and 3D products and manipulate before manufacturing. e.g. 2D design and Autodesk Inventor (3D)

- More accurate than hand drawings
- Designs can be changed and tested before production.
- Offers views of 3D models from all angles
- Final drawing/file can be emailed instantly



- Can be difficult to learn
- Expensive software

Disadvantages

- High level of accuracy
- Consistent quality of product manufactured
- Increases speed of production
- Can operate 24 hours a day
- Products can be made directly from CAD files

Computer Aided Manufacturing

CAM uses computer numerical control (CNC) to manufacture the CAD designs. e.g. Laser cutter, 3D printer, CNC router and lathes.

Advantages

- High level of accuracy
- Consistent quality of product manufactured
- Increases speed of production
- Can operate 24 hours a day
- Products can be made directly from CAD files

1.		2.	
3.		4.	
5.		6.	
7.		8.	
9.		10.	
11.		12.	

Acrylic



- Hard and rigid
- Range of colours
- Easily scratched
- Waterproof
- Insulator

HIPs



- Flexible
- Lightweight
- Can be vacuum formed
- Range of colours
- Waterproof
- Insulator

Quiz 3 Properties and Key Words

Types of Thermoplastics

In a favourable or superior position
Or, in an unfavourable or inferior position

the quality of being attractive or interesting

Evolution, Growth, Expansion, Maturing

Advantage/
disadvantage

Appeal

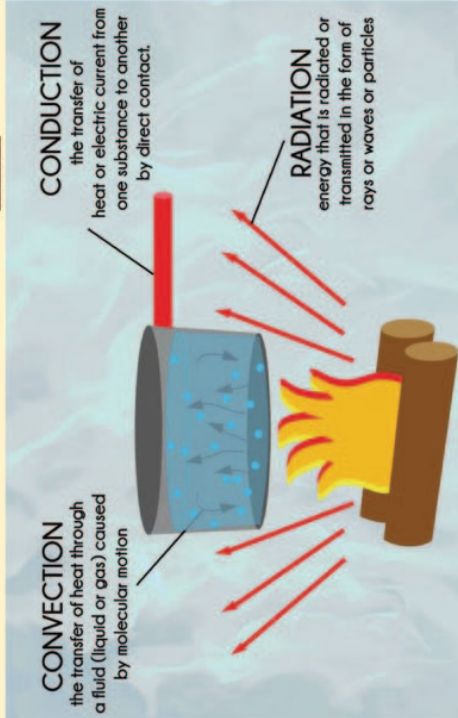
Development



Learning cycle 4 in Food covers: Heat transfer and cooking methods.

Key words and definitions:	
Heat transfer	Describes the flow of heat (thermal energy) due to the temperature differences and the subsequent temperature distribution and changes.
Conduction	Energy is transferred from molecule to molecule by direct contact; the molecules themselves do not necessarily change position, but simply vibrate more or less quickly against each other.
Convection	The transfer of heat by the movement of a fluid (liquid or gas) between areas of different temperature.
Radiation	A heating process that does not require physical contact between the heat source and the food being cooked; instead, energy is transferred by waves of heat or light striking the food. Two kinds of radiation heat are used in the kitchen: infrared and microwave.

Test 1



Water soluble vitamins: B group, C. These are lost if you use a method of cooking that uses water (eg boiling, poaching, steaming).

Fat soluble vitamins: A, D, E, K. These are kept more if you use water to cook but can be lost into fat if you are frying or roasting.

Conduction: In the diagram, this happens to the saucepan. If your saucepan was on a hob instead of a fire, conduction will also happen between the hob and the saucepan.

Convection: In the diagram this is happening to the water in the saucepan, the water is heated by convection as the hot water rises and the cooler water sinks.

Radiation: In the diagram this happens from the flames which radiate heat to the saucepan. Radiation also happens when you use the grill, the heat travels in a straight line to the food.

Microwave radiation: This is electromagnetic (the waves of energy are electrical and magnetic). They cause molecules in the food to vibrate and this causes them to heat

More examples: Stir frying - conduction to heat the pan, uses a high heat so less cooking time is needed and more vitamins are preserved (kept) in the food. Steaming - Conduction to heat the pan, convection in the water and the steam to heat the food, this is more gentle than boiling because the temperature is lower, therefore less water soluble vitamins are lost.


Cycle 4 Knowledge Organiser

Boiling



Food is cooked in deep boiling liquid [water, stock, wine etc.] in an open or covered saucepan.

Simmering



Like boiling, but the liquid is kept just below boiling point in an uncovered pot.

Steaming



Food is placed on a container and cooked in the steam from boiling water in a covered pan or steamer.

Stewing



Cooking food in its own juices with a little additional liquid, in a covered pan, at simmering point.

Blanching

- Blanching uses the boiling method to partially cook food.
- It is a quick way to change the flavour and keep the colour in foods.
- Blanching is a two step process:
 1. Completely submerge the food in a boiling liquid and blanch, or briefly cook, it.
 2. Remove the blanched food from the liquid and plunge the food into ice water to completely stop the cooking process.



Braising



Pieces of food are first browned in a little fat, then cooked with some liquid in a closed pan.

Deep-frying



Frying pieces of food in a deep pot or fryer with plenty of hot oil or fat.

Sautéing



Cooking small or thin pieces of food in a little very hot oil or fat. The frying pan is shaken constantly to stop the food from burning.

Flambéing



After frying, alcohol is added to the food in the frying pan and set on fire. This gives added flavour to the food.

Dry frying is heating food in a pan without using any fat or oil. It can be used for foods such as nuts and, particularly, spices, as it helps to release the flavour of many spices.

Dry cooking methods don't use any water based liquids eg grilling, roasting. Moist cooking methods use water based liquids to cook the food in, eg boiling, poaching, braising. Work out which cooking methods are moist and which are dry.

Pan-frying



Frying food in a little oil or butter using a frying pan over moderate heat.

Roasting



Cooking food like meat or poultry with some fat in a hot oven [between 200-240 degrees centigrade].

Baking



Cooking food like cakes, pies, bread etc. in a closed oven at a temperature of between 120-240°C.

Grilling means cooking food in the grill where a fierce direct heat is radiated to the surface of the food. This means the food only cooks from the top, you need to turn the food over regularly and you need to use foods that are reasonably thin.

Stir frying is cooking small pieces of food in very little fat over a high heat, usually in a wok or high sided frying pan. This is the fastest way to cook vegetables.



Note: American's call using a barbecue "grilling". When you use a barbecue the heat transfer method is the same as grilling but the food is cooked from the bottom instead of from the top. Grilling is healthier than frying because fat in the food melts and drips out of it.

Cycle 4 in Year 8 PE will focus on developing your *wellbeing* through activities such as Cricket, Rounders and Tennis.

Cycle 4 Knowledge Organiser

<u>Key words and definitions</u>	
<u>Concept - Wellbeing</u>	<u>Wellbeing - Focus Statement</u>
Health	<i>I understand how physical activity affects my health</i>
Flourish	<i>I can identify factors that help me succeed</i>
Confidence	<i>Adapting my technique to improve</i>
Guide	<i>Supporting others with their learning</i>
Awareness	<i>Identifying how my attitude affects my team's success</i>
Mental Toughness	<i>Responding appropriately to competition even if I am not the winner</i>
Mindset	<i>Approaching activities with a positive outlook with some consistency</i>
Perseverance	<i>Completing my assessment with the best of my ability</i>
Growth	<i>Responding to feedback to enhance my knowledge and skills</i>

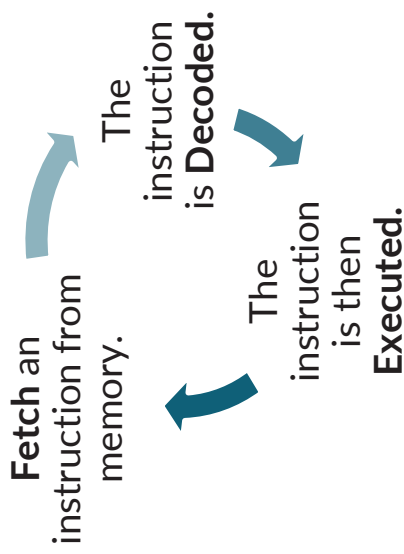


Wellbeing



Cycle 4 - Understanding Computer Systems

Fetch, Decode, Execute Cycle.



RAM

Volatile memory that stores currently used programs. When the power is off, the data on RAM is gone.



ROM

Non volatile memory that stores boot up instructions. This permanently stores data, even when switched off.



What is hardware?

Objects that you can touch, like a music CD. For example:

Disks, disk drives, display screens, keyboards, printers, boards, and chips

What is software?

You cannot 'touch' software. Software refers to the programs that run on a computer, rather like the music playing on a CD

Examples of software:

Windows, MS Word, MS Excel, Kodu and Logo

Cycle 4 - Understanding Computer Systems

Binary Addition Rules

$0 + 0 = 0$
 $1 + 0 = 1$
 $1 + 1 = 0$ carry 1
 $1 + 1 + 1 = 1$ carry 1

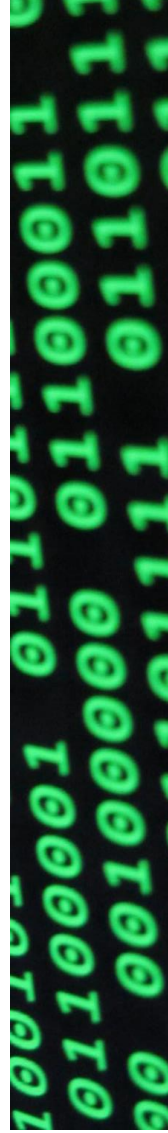
$$\begin{array}{r}
 11 \\
 11110 \\
 + 1100 \\
 \hline
 = 11010 \\
 14 \\
 12 \\
 26
 \end{array}$$

Data Units

bit = 1 bit
Byte = 8 bits
Kilobyte = 1,000 bytes
Megabyte = 1,000 kilobytes
Gigabyte = 1,000 megabytes
Terabyte = 1,000 gigabytes

Binary numbers - Base 2 number systems that only uses 0's and 1's.

Denary numbers - Base 10 number system that uses numbers from 0 - 9



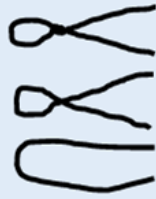
Key Terms

Input Device	A device that is used to input data into the computer. For example a keyboard.
Output Devices	Used to display data in a particular format. For example a computer monitor.
Memory	This is where the computer keeps the data that has been input. This memory is lost when the computer is turned off.
Storage Device	This is where a computer stores files that have been created, as well as software that has been installed. This is not lost when the computer is turned off.

Throughout learning Cycle 4 you will plan and create your own 'figure in action' wire sculpture inspired by Alberto Giacometti's bronze works.

Using six pieces of wire you will construct a metal armature.

1st piece of wire: Keep wire wide and head fairly small
DO NOT WRAP WIRE!!!



2nd piece of wire: bend in half like tweezers! TWIST around the neck like a scarf. TWIST around the start of the arms, twist both pieces together (shoulder width)



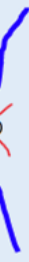
3rd piece of wire: Twist to make the torso – leave a small length to add the legs to



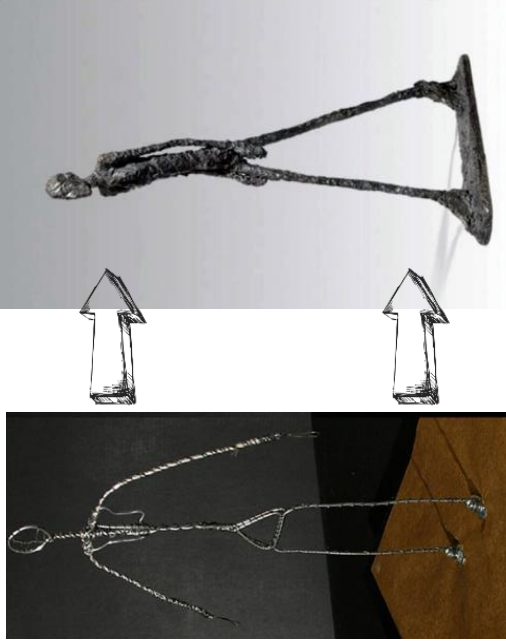
4th piece of wire: bend another piece in half like before. Twist whole left over piece around the leg (scarf method)



5th piece of wire: First leg – half way down. Attach for length



6th piece of wire: Add to arm length



Learn the Keywords

Construct
Assemble
Manipulate
Exaggerate
Maquette
Armature
Emphasis

Proportion
Elongate
Bronze
Sculpture
Figure
Action
Enhance

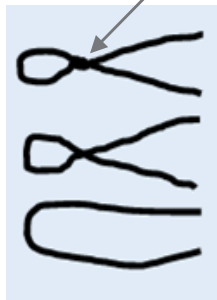
Once you have completed your final sculpture you will write your own statement about your artwork. In a gallery a statement is visible alongside artworks and allows the viewer to understand the artist's work in more depth.



Words	Description
1. Armature	An Armature figure is an open framework on which a sculpture is moulded with wire, clay or similar material.
2. Artist's Statement	A general written introduction to an artists' work.
3. Dexterity	Skills in performing tasks, especially with the hands
4. Manipulate	To handle or control your artwork in a skillful manner.
5. Assemble	To fit together the separate component parts of a piece of artwork.

Throughout learning cycle 4 you will plan and create your own 'figure in action' sculpture inspired by Alberto Giacometti's bronze works.

Using six pieces of wire you will construct a metal armature.



1. Make the head.

Bend a piece of wire into an upside down 'U' shape, cross over and twist the wire 3 times so it holds together.

2. Make the arms.

Twist your 2nd wire (red) around the 1st wire (black) leaving two long pieces free.



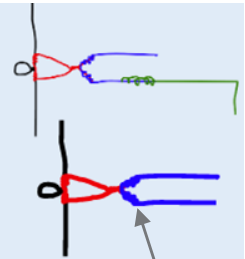
3. Make the body.

Bend the 2nd wire (red) so that the two long ends point away from the head. Cross them over and twist 3 times. This will make the waist.



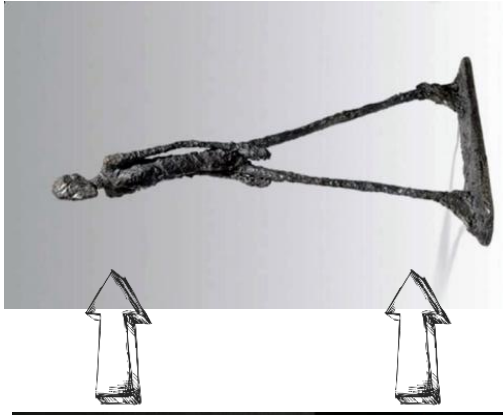
4. Legs.

Bend your 3rd wire into a 'V' and the twist around the ends of wire no.2.



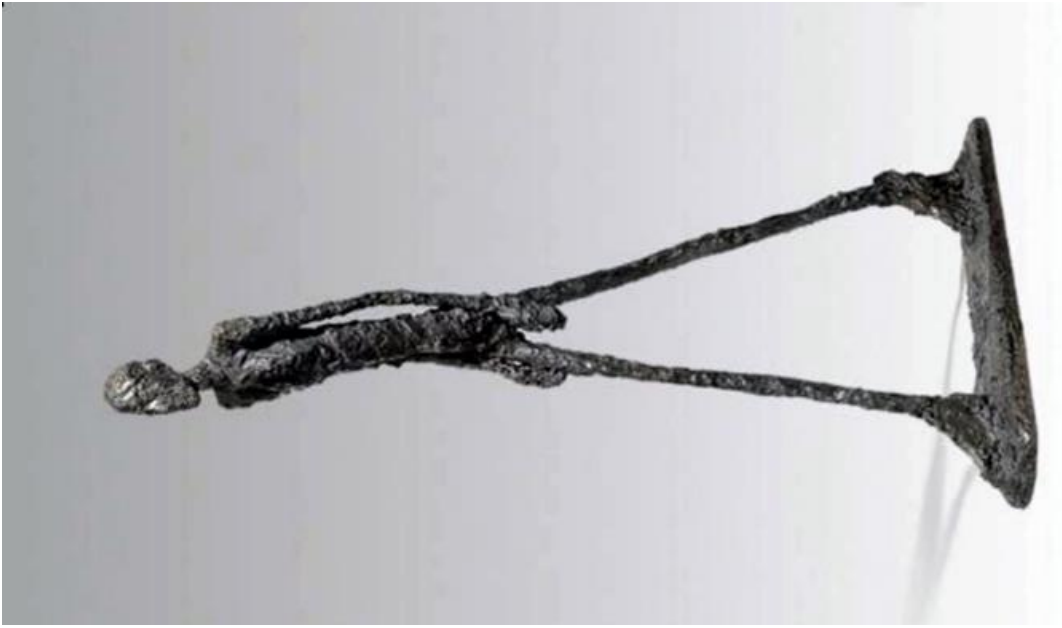
4. Extend.

Twist a new wire onto each leg to make the legs longer. Add one wire across the arms to make longer arms.



Keywords

- Twist
- Proportion
- Model
- Sculpture
- Figure
- Action
- Construct
- Frame
- Enhance**



Keywords	
Action	
Figure	
Shape	
Form	
Mood	
Emotion	
Effect	
Movement	

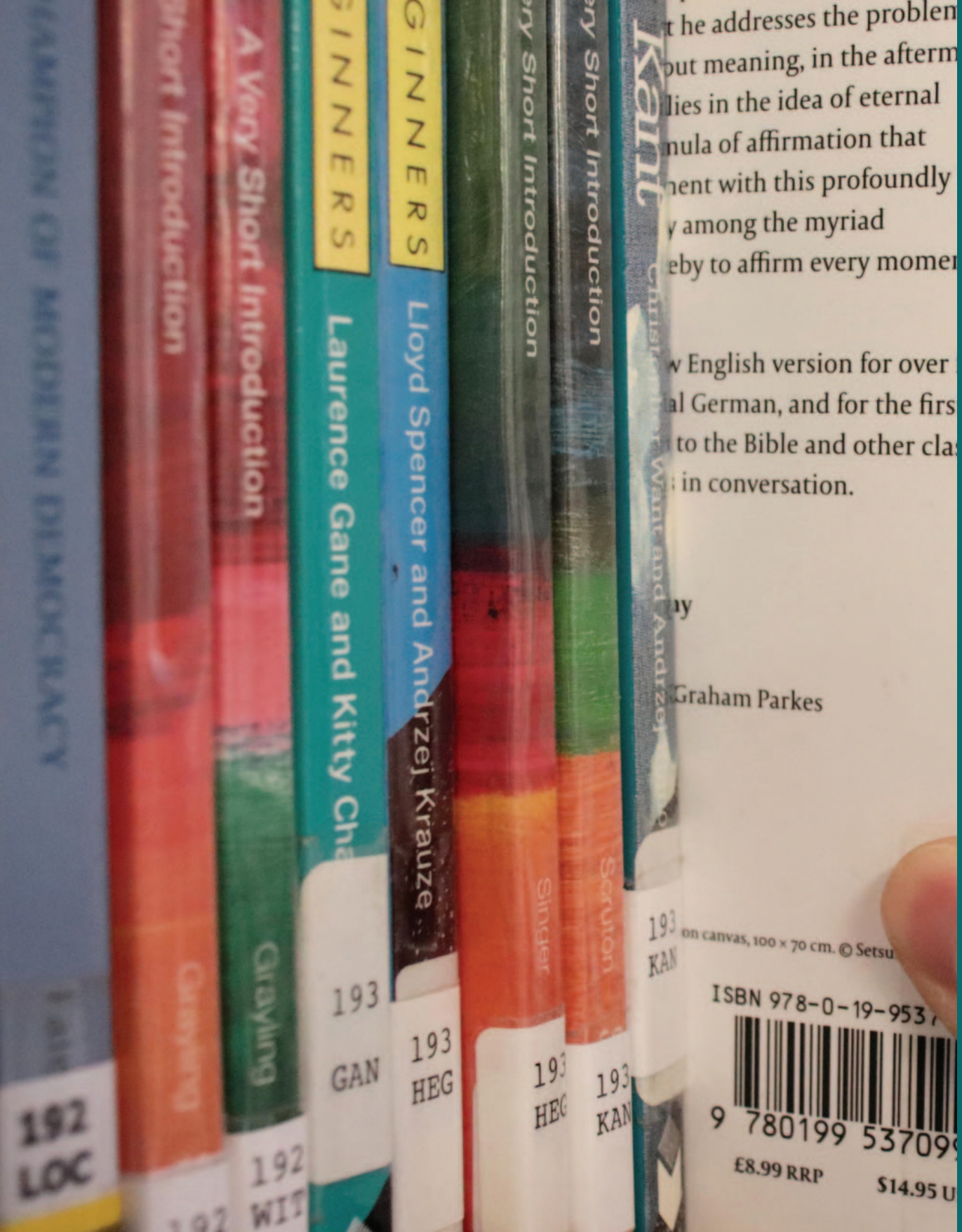
Have a go at drawing Giacometti's figures.



Art

Belong Believe Be Proud

Stick Timetable Here



Belong

Believe

Be Proud