



Birchfield
PRIMARY SCHOOL

Year 6 Curriculum Overview
Term 1.1

Teaching Team:
Miss Fowler, Mrs Akhtar and Miss Ellis
Teaching assistant: Miss West
SLT: Mrs Z Thewlis

PE Days: Monday

Homework: Every Tuesday and Friday

Please see below an overview of the main themes,
knowledge and skills we will be covering this half term.

Enquiry Question	What is the impact of slavery and refugees on modern Britain?
Significant People	Razan al-Najjar
Class Texts	 <p>Freedom by Catherine Johnson</p> <p>Themes: discrimination, slavery, friendship, justice.</p> <p>“You are property. We all are. And you, Nathaniel Barratt will be a slave until the day you die!” When Nat is sent to England with his master, he dares to dream that life will be different. But being a slave in London isn’t much better than being a slave in Jamaica, and Nat jumps at his first chance to run. Finally free, he hears the story of a nightmare slave ship, <i>the Zong</i>, and meets the people fighting to get justice for those on board... Will the world continue to turn a blind eye to the horrors of slavery? And can Nat really evade his master forever?</p>
Reading	<p>Reading domain: 2b retrieve and record information / identify key details from fiction and non-fiction.</p> <p>Test techniques:</p> <p>This half term, pupils will be developing their retrieval skills. They will begin by understanding the difference between literal</p>

	<p>and inferential, identifying question stems appropriate to the domain and skimming and scanning various texts to locate information with efficiency.</p>
Writing	<p>To begin this half term, the children will be writing letters. They shall start with informal letters, using our class text to support their content, before moving on to formal and persuasive letters.</p> <p>When writing, the children shall consider the structure of their work, ensuring they are writing in the style of a letter and shall work to choose the correct and relevant language techniques to suit the audience.</p> <p>When producing formal writing, the children shall write without contracted forms and make language choices that are appropriate. They shall also use techniques such as rhetorical questions, emotive language and repetition when writing persuasively.</p>
Maths	<p>During this half term, the pupils will be focusing on place value and number, with numbers up to 10,000,000 recapping on their knowledge of number from Year 5. They will learn to read, write, order, and compare numbers up to 10,000,000 and determine the value of each digit and solve number and practical problems that involve the above.</p>
History	<p>This term, the children shall be completing the unit 'Maafa.' This project teaches the children about Africa past and present, with a particular focus on Benin. It traces the development of the slave trade and explores Britain's role in the transatlantic slave trade, the causes, and consequences of the</p>

	European colonisation of Africa and the worldwide communities that make up the African diaspora.
Geography	This term, the children shall complete the unit 'Our Changing World.' This essential skills and knowledge project revises the features of Earth, times zones and lines of latitude and longitude to pinpoint places on a map. Children find out more about map scales, grid references, contour lines and map symbols. They will also learn about climate change and the importance of global trade.
Science	This half term, the children will begin their science learning with the unit 'Evolution and Inheritance.' This project teaches children how living things on Earth have changed over time and how fossils provide evidence for this. They will also learn how characteristics are passed from parents to their offspring and how variation in offspring can affect their survival with changes possibly leading to the evolution of a species. Moving into the second half of the half term, the children shall start the unit 'Circulatory System.' This project teaches the children about the transport role of the human circulatory system, its main parts, and primary functions. They will learn about healthy lifestyles choices and the effects of harmful substances on the body.
Mandarin	Children will be learning about these topics, this half term: <ul style="list-style-type: none"> • Countries • Places • Feelings

Art	<p>In art, the children will complete the unit 'Trailblazers, Barrier Breakers.' This project teaches the children about significant black artists and their work and provides them with opportunities to analyse and create artwork inspired by them.</p>
Music	<p>The 6-week unit of work will build on previous learning. Pupils will begin to understand and explore how music is created, produced, and communicated, including through the inter-related dimensions: pitch, duration, dynamics, tempo, timbre, texture, structure and appropriate musical notations. The learning will be focused around one song: Happy by Pharrell Williams - a Pop song with a Soul influence about being happy. What makes you happy?</p> <p>Children will continue to find the pulse or 'heartbeat' of songs. They will also begin to use instruments through the iPads to begin composing their own pieces of music, with an ambition to perform and share their work.</p>
Computing	<p>This term, the children shall complete the unit 'Communication and Collaboration.' In this unit learners explore how data is transferred over the internet. Learners initially focus on addressing, before they move on to the makeup and structure of data packets. Learners then look at how the internet facilitates online communication and collaboration; they complete shared projects online and evaluate different methods of communication. Finally, they learn how to communicate responsibly by considering</p>

	what should and should not be shared on the internet.
PSHE	Pupils will be exploring how we can keep healthy as we grow. Pupils will consider what mental health is, how to express feelings, how they can be managed in changing, challenging and difficult times.
RE	Year 6 pupils will be exploring the disposition of living by rules, what it means and why it may be important. They will consider the rules of some religions – Islam, Christianity and Judaism and think about the aims of them as well as comparing them to rules within society.
PE	Pupils will be taught the skills required for basketball and badminton. They will incorporate and develop their social and emotional skills through working as a team.

Knowledge Organisers:

Reading

Book Knowledge Organiser – Freedom by Catherine Johnson

Important Information

Plot

Nat is a 12-year-old boy born into slavery on a Jamaican sugar cane plantation owned by the brutal English family, the Barratts. The story opens with his mum and baby sister being taken away to work on another plantation, leaving him to face his hardships alone. But when Nat is sent to England to look after some exotic pineapple plants, he starts to dream of freedom. When he gets there he discovers it's not true there is no slavery in England, but in the hustle and bustle of crazy London, life is a bit freer. When Nat meets the amazing Shadrack Furman, his life is changed forever.

Themes

Family, freedom, friendship, relationships, resistance, slavery

Setting The book takes place in two locations: the first chapters are set in Jamaica then the story moves to London. The first-person narrator allows the reader to know the main character intimately. We sense the world through the character's senses and understand his thoughts and feelings in detail. For example, 'My head hit the floor with a loud smack and the world went dark.' Nathaniel's use of similes, such as 'shaking a mat Mamma had made from rushes and tossing it aside like it was a piece of dirt' brings his emotions to life.

Characters

Nathaniel

Nathaniel is a 12-year-old enslaved boy from Jamaica. He is separated from his mother and sister and sent to work in England. He is a very determined boy who is always looking for a way to escape and earn the money required to buy his family's freedom. He recalls his mother's words about standing tall and being proud, hiding his tears so his owners do not have the satisfaction of seeing how much they hurt him.

Mistress Barratt

Mistress Barratt owns Nathaniel; she is cruel and mistreats him. She is very close to her parrot, Mr Bird, who is vicious and acts as a guard dog.

Henry Hughes

Henry is a lively 14-year-old cabin boy from London. He befriends Nathaniel and they become like brothers. He treats Nathaniel as an equal.

Shadrack Furman

Shadrack used to be enslaved but was freed for his service during the American War of Independence. He lives in London and dances for money. He is part of the Sons of Africa group, who are fighting for the abolition of slavery.



Name of Book: Freedom
Date Published: 02/08/2018
Author: Catherine Johnson
Genre: Historical fiction

Link to Enquiry: The novel takes place in 1783, and although the main character is fictional, real historical figures and events are included. Children will learn about the development of the slave trade. It also explores Britain's role in the transatlantic slave trade, the causes and consequences of the European colonisation of the slave trade.

Key Questions/Reflection Points

- What has the story taught you? Think about values.
- What is the difference between a refugee and an asylum seeker?
- Which characters did you find the most interesting? Why?
- How would you describe the tone of the book?
- How effective is the book in raising awareness of this issue?
- Does slavery still exist today?
- How has the slave trade affected modern Britain?
- What is 'Windrush'? Black lives matter?
- How did Britain prosper from the enslavement of African people?
- What conditions did slaves have to live in?
- How many slaves were set free?
- Who was Olaudah Equiano?

Key Vocabulary

Asylum	the protection granted by a state to someone who has left their home country as a political refugee.
Refugee	a person who has been forced to leave their country in order to escape war, persecution, or natural disaster.
Dialect	A form of language spoken in a particular area.
immigrant	a person who comes to live permanently in a foreign country.
Illegal immigrant	continued residence without the legal right to live in that country.
Discrimination	the unjust or prejudicial treatment of different categories of people, especially on the grounds of race, age, gender, or disability.
prejudice	preconceived opinion that is not based on reason or actual experience.
Abolition	Abolitionism, or the abolitionist movement, is the movement to end slavery.
plantation	an estate on which crops such as coffee, sugar, and tobacco are grown.
Merchant ship	a watercraft that transports cargo or carries passengers for hire
diaspora	A diaspora is a scattered population whose origin lies in a separate geographic locale. Historically, the word diaspora was used to refer to the mass dispersion of a population from its indigenous territories.

Writing

Spellings...I need to know some of these:

accommodate	correspond	hindrance	recognise
accompany	criticise	individual	recommend
according	curiosity	interfere	relevant
achieve	definite	interrupt	restaurant
aggressive	desperate	language	rhyme
amateur	determined	leisure	rhythm
ancient	develop	lightning	sacrifice
apparent	dictionary	marvellous	secretary
appreciate	embarrass	mischievous	shoulder
attached	environment	muscle	sincere
available	equip(-ped)	necessary	sincerely
average	equipment	neighbour	soldier
awkward	especially	nuisance	stomach
bargain	exaggerate	occupy	sufficient
bruise	excellent	occur	suggest
category	existence	opportunity	symbol
committee	explanation	parliament	system
communicate	familiar	physical	temperature
community	foreign	prejudice	thorough
competition	forty	privilege	twelfth
conscience	frequently	profession	variety
conscious	government	programme	vegetable
controversy	guarantee	pronunciation	vehicle
convenience	harass	queue	yacht

Punctuation Reminders:

A	Capital letters for sentences, initials and proper nouns.
.	Full stops
!	Exclamation marks for exclamations or surprise.
?	Question marks
'	Apostrophes for possession and missing letters.
,	Commas in lists, and to mark parenthesis, fronted adverbials and clauses.
...	Ellipsis to show a long pause for tension.
" "	Inverted commas for speech (Don't forget the commas too!).
-	Hyphen to connect words together.
-	Dashes to show longer pauses or parenthesis.
()	Brackets for parenthesis.

Splendid Subordination!

Use these conjunctions in varied places in your multi-clause sentences:

if because as
before after until
unless since when

Can you use a subordinate clause in different places in your sentences?

Writing Mat Working towards Year 6

Active and Passive

Use active and passive sentences appropriately:

Active: In front of millions of screaming fans, the star striker missed a vital penalty.

Passive: In front of millions of screaming fans, a vital penalty was missed by the star striker.

Use a mixture of simple, compound and multi-clause sentences.

Use a thesaurus to up-level your vocabulary choices.

Important Links!

Link your sentences and paragraphs using adverbials:

Time

Subsequently, Later that day,

Finally,

Place

Deep inside the forest, Below the sea,

Frequency

Occasionally, Often,

Contrast/ Cause

On the other hand, In contrast,

As a result, Consequently,

Manner/ Behaviour

Breathing heavily, Waiting anxiously, Without warning, Suspecting the worst,

It's All Relative!

Use a relative pronoun to add a relative clause.

who, which, where, when, whose, that

The Queen, who has reigned for 60 years, has four children.

ga
is

The stench was so putrid that it made her eyes water.

They had ventured deep into the forest where they began to feel uneasy.

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Creating Cohesion Top Tip: Not only can you use pronouns like he, she, it or they instead of repeating a name or names but how about other names or titles too? Here's some examples: the teacher, she, Mrs Smith, the lovely woman or the lady with the long hair.

Be a Punctuation Professional!

A	Capital letters for sentences, initials and proper nouns.
.	Full stops
!	Exclamation marks for exclamations or surprise.
?	Question marks
'	Apostrophes for possession and missing letters.
,	Commas in lists, and sentences.
...	Ellipsis to show a long pause for tension.
" "	Inverted commas for speech (Don't forget the commas too!).
-	Hyphen to connect words together.
-	Dashes to show longer pauses or parenthesis.
()	Brackets for extra information or asides.
:	Colon to separate clauses.
;	Semi colons to separate clauses.

Writing Mat
Expected Year 6

Perfect Parenthesis!
Use brackets, commas or dashes to punctuate extra information and asides:
The tomb of Tutankhamen (the Ancient Egyptian pharaoh) was discovered by Howard Carter.
The advancing alien, who was speaking a Martian language, looked dangerous.
The daffodils - my favourite sign of spring - swayed gently in the woodland breeze.

Use a thesaurus to look for more ambitious synonyms. Why use 'frightened' when you could use...
startled alarmed apprehensive

Or 'show' a character's feelings:
his breathing quickened her heart raced
sweat trickled gasping for air

Spellings... I need to know all of these:

accommodate	correspond	hindrance	recognise
accompany	criticise	individual	recommend
according	curiosity	interfere	relevant
achieve	definite	interrupt	restaurant
aggressive	desperate	language	rhyme
amateur	determined	leisure	rhythm
ancient	develop	lightning	sacrifice
apparent	dictionary	marvellous	secretary
appreciate	embarrass	mischievous	shoulder
attached	environment	muscle	sincere
available	equip(-ped)	necessary	sincerely
average	equipment	neighbour	soldier
awkward	especially	nuisance	stomach
bargain	exaggerate	occupy	sufficient
bruise	excellent	occur	suggest
category	existence	opportunity	symbol
committee	explanation	parliament	system
communicate	familiar	physical	temperature
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conscience	frequently	profession	variety
conscious	government	programme	vegetable
controversy	guarantee	pronunciation	vehicle
convenience	harass	queue	yacht

Active and Passive
Use active and passive sentences appropriately:
Active: In front of millions of screaming fans, the star striker missed a vital penalty.
Passive: In front of millions of screaming fans, a vital penalty was missed by the star striker.

Check for:

- cohesive links
- genre features
- layout devices
- consistent tense and person
- subject/verb agreement
- paragraphs with

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Use these conjunctions in varied places in your multi-clause sentences:

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before	after	until
unless	since	when

Writing Mat
Greater Depth Year 6

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Punctuation Reminders:

A	.	!	?	'	,"	" "	()	...	:	;	-
----------	---	---	---	---	----	-----	-----	-----	---	---	---

Use a full range of punctuation.

Check for:

- consistent tense and person
- subject/verb agreement
- paragraphs with cohesive links
- genre features
- layout devices
- pronouns/ nouns for cohesion

Active and Passive
Use active and passive sentences appropriately:
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Create a Mood!
Where appropriate, in formal writing, use the subjunctive mood:
If I were The Queen, ...
Were there to be a change in my circumstances...

Splendid Subordination!
Use these conjunctions in varied places in your multi-clause sentences:

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unless	since	when

Use a thesaurus to look for more ambitious synonyms. Why use 'frightened' when you could use...
startled alarmed apprehensive
Or 'show' a character's feelings:
his breathing quickened her heart raced
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Perfect Parenthesis!
Use brackets, commas or dashes to punctuate extra information and asides:
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The advancing alien, who was speaking a Martian language, looked dangerous.
The daffodils - my favourite sign of spring - swayed gently in the woodland breeze.

Be a Punctuation Professional!
Use semi colons, colons and dashes to mark independent clauses:
It felt like forever- the longest six weeks holiday of all time.
Jack's eyes slowly opened; there was no one to be seen.
They all knew his secret: he was a specialist secret agent.

Important Links!
Link your sentences and paragraphs using adverbials:

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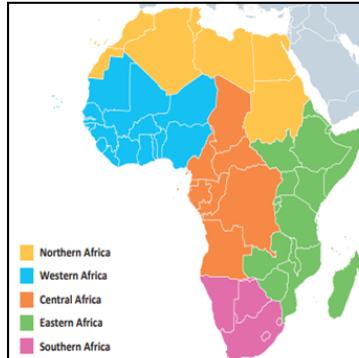
History

Summer Term Foundation Knowledge Organiser

Topic: **Maafa**

Africa

Africa is the world's second largest continent, and is made up of 54 different countries. Today, more than one billion people live in Africa, including over 3000 different indigenous groups. As well as a diverse range of people, languages and cultures, the continent has a vast range of landscapes and habitats. Sprawling metropolises, rural villages and shanty towns can all be found here, along with grasslands, deserts,



- Northern Africa
- Western Africa
- Central Africa
- Eastern Africa
- Southern Africa



Illustration of Benin City, 1668

Ancient Kingdoms

Humans have lived in Africa for millions of years. Great civilisations developed in every part of Africa, including the Kingdom of Aksum, the Kingdom of Benin and the Mali Empire. Each were great trading nations and gained wealth and power by trading natural resources, such as gold and salt,

Maafa Timeline

1441	Portugal starts transporting enslaved African people
1492	Christopher Columbus discovers Hispaniola
1562	Britain begins transporting enslaved African people across the Atlantic Ocean
1728	The first Maroon war begins in Jamaica, where escaped enslaved workers fight British troops for the right to live independently
c1800	Approximately 120,000 enslaved people are transported, by British ships, to the Caribbean and Americas every year
1807	The Abolition of the Slave Trade Act is passed
1831 - 1832	The largest rebellion of enslaved people takes place in the British Caribbean
1833	The Slavery Abolition Act is passed
1884 - 1885	Africa is divided into 50 European colonies
1948 - 1973	Around 500,000 people are invited to Britain from the Caribbean to fill job positions after the Second World War. The first people arrived on a ship called HMT Empire Windrush. All of the people arriving in this way become known as the 'Windrush generation'.
1965	The Race Relations Act is passed
2010	The Equality Act is passed

Summer Term Foundation Knowledge Organiser

Topic: **Maafa**

Glossary

Abolitionist	A person who fights to ban something, such as slavery.
Auction	A public sale, where goods are sold to the person who bids the most money
Chattel Slavery	A form of enslavement, where people are kept as another person's property and are treated very badly
Colonisation	The act of sending people to live in, govern and control another country and its indigenous people, forming a colony
Emancipation	To be set free from legal, social or political restrictions, such as slavery
Enslavement	To have one's freedom taken away and to be forced to work for no money
Indigenous	To naturally exist in a country or area, rather than arriving from somewhere else
Maafa	A Swahili word meaning 'great catastrophe'. The name Maafa is used to describe the African Holocaust and the history and effects of the transatlantic slave trade.
Plantation	A large estate where crops, such as sugar cane or tobacco, are grown
Trading Forts	A place designed for the storage, buying and selling of goods
West Indies	A group of islands surrounded by the North Atlantic ocean and the Caribbean Sea. More commonly known as the Caribbean



Caribbean Plantations

Life was very difficult for enslaved people on plantations. Many worked long hours, growing and processing crops like tobacco, cotton and sugar. Living conditions, health and food supplies were poor. Enslaved people were punished by their owners and were not protected by the law. Enslaved people were also subjected to racism and were manipulated and controlled by their enslavers. To pre-



Triangular Slave Trade

The triangular slave trade was a very profitable system of enslavement, developed to provide labour for plantations in the Americas. It involved 3 journeys:

1. The first journey

Goods, including metal and guns, were transported to the west coast of Africa

2. The second journey

Enslaved African people were transported to the Caribbean and the Americas. This journey was also known as the middle passage

Our Changing World

Time zones around the world

The world is split into 24 meridians because there are 24 hours in a day. Each meridian is in the centre of a time zone. The times around the world are calculated from the Prime Meridian. The time at the Prime Meridian is known as Greenwich Mean Time, abbreviated to GMT. If time zones are to the east of the Prime Meridian on a map, the time is ahead of GMT (GMT+). If they are to the west of the Prime Meridian, the time is behind GMT (GMT-).



Prime Meridian, Greenwich

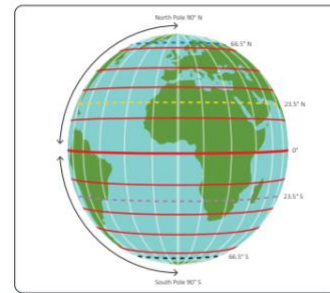
Latitude and longitude

Lines of latitude and longitude are imaginary lines around Earth. They are measured in degrees and help us to pinpoint exact locations. The lines of latitude run horizontally and measure how far north or south a point is from the equator. The equator is the line of latitude at 0°. The lines of longitude run vertically and measure how far east or west a point is from the Prime Meridian. The Prime Meridian is the line of longitude at 0°. The point where a line of latitude and longitude cross can be written as a coordinate. For example, 30°N, 75°E.



Macao in China is 22°N of the equator and 114°E of the Prime Meridian

Features of Earth



Key	
	equator
	Tropic of Cancer
	lines of latitude
	Tropic of Capricorn
	lines of longitude
	Arctic Circle
	Prime Meridian
	Antarctic Circle

The **equator** is the line of latitude around the middle of Earth. It is equidistant from the North Pole and the South Pole.

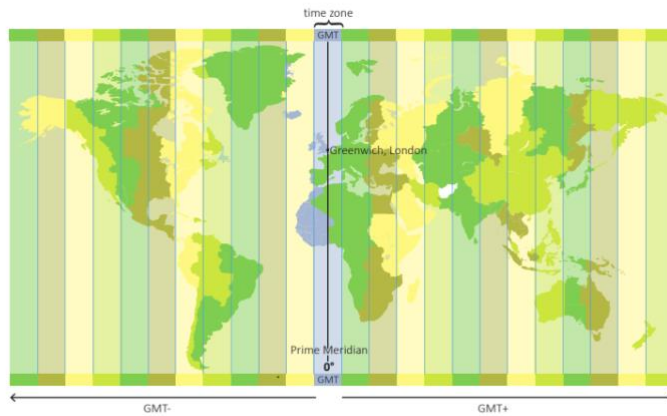
The **Southern Hemisphere** is the half of Earth south of the equator and the **Northern Hemisphere** is the half of Earth north of the equator.

The **Prime Meridian**, or Greenwich Meridian, is a line of longitude that runs through Greenwich, London. All lines of longitude are measured from the Prime Meridian.

The **Tropic of Cancer** is 23.5°N and the **Tropic of Capricorn** is 23.5°S of the equator. The area in between these lines of latitude is called the tropics.

The **Arctic Circle** is a line of latitude that is 66.5°N of the equator. The land inside the Arctic Circle is some of the coldest and least populated in the world.

The **Antarctic Circle** is a line of latitude that is 66.5°S of the equator. There is no permanent human population within the Antarctic Circle.



* this map is simplified and shows approximate time zones

Climate change and global warming

The climate is the usual weather conditions that occur in a place over a long time. The world's climate naturally changes over a long period of time; however, the current rate of change is unprecedented and has been linked to human actions. This large scale change to the climate is called 'climate change'. The main cause of climate change is global warming. The temperature on Earth has increased by about 1°C since 1880. Burning fossil fuels, deforestation and eating meat is likely to have the biggest effect on global warming and climate change.

Extreme weather and people

Climate change is causing extreme weather events worldwide, including severe storms, cyclones, floods, sandstorms, heatwaves and droughts. Millions of people are affected by these extreme weather events every year.



Cyclone Idai moving towards Mozambique and Zimbabwe in 2019

The Global Climate Risk Index ranks the countries that are most affected by the effects of extreme weather related to climate change. The countries most affected in 2019 were Mozambique and Zimbabwe in Africa, and the Bahamas in North America.

Trade around the world

Countries worldwide export and import fossil fuels, metal ores, food and manufactured products. The availability of natural resources, the climate and the type of soil in different countries can influence what they export. For example, Ecuador exports 30% of the world's bananas because they grow well all year round in the tropical climate.

Traffic data

Data is information, including facts and statistics, that is collected, analysed and acted upon. Traffic data about road accidents in Great Britain in 2019 show that most fatalities happened on fast, rural roads. Reasons for this could include speeding, blind bends, people walking in the road, lack of cycle lanes, and motorcyclists overtaking or having little knowledge of the roads. Urban roads have more traffic, but are usually wider and have fewer bends. They can also have cycle lanes and more footpaths, so, even though there are more accidents, there are fewer fatalities.

Human settlement patterns

A settlement is a place where people live permanently. Settlements can be rural or urban. Rural settlements are small in area and population. They include hamlets and villages. Urban settlements are larger than rural settlements. They include towns and cities.

There are different settlement patterns, including linear, circular, Y-shaped, T-shaped and cross-shaped. Settlements can be compact, where many houses are built close to each other, or dispersed, where the houses are scattered across fields or hillsides. Sometimes, settlements grow and change over time. Hamlets become villages, villages become towns, and towns become cities.



urban settlement



rural, linear settlement



compact settlement



dispersed settlement

Grid references, contour lines and map symbols

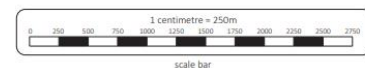
On a map, a grid reference is a set of numbers that describes a position. Contour lines join points of equal height above sea level and show the topography of an area. Map symbols are pictures or icons that represent physical and human features.



contour lines

Map scales

Maps are much smaller than the places they represent so they are drawn to scale. The scale is written as a ratio, for example, 1cm:250m, which means 1cm on a map is equal to 250m in real life. Maps also include a scale bar. The ratio and scale bar help a map reader measure the distance between features on a map or the length of a feature, such as a footpath.



Maps of different scales

Maps can be drawn to different scales. We describe maps as small scale or large scale. Small scale maps have large numbers in their ratio, such as 1cm:250km. They show continents or large areas of land or sea and contain little detail. Large scale maps have smaller numbers in their ratio, such as 1cm:250m. They show smaller areas of land in more detail and include the location and names of cities, towns and villages, as well as human and physical features.



small scale map



large scale map

Glossary

export	To send goods to another country for selling.
import	To buy goods and bring them into one country from another.
global warming	The increase in world temperatures caused by gases, such as carbon dioxide, being released into the atmosphere.
topography	The physical appearance of an area of land, especially relating to its shape and surface.

Evolution and Inheritance

Classification

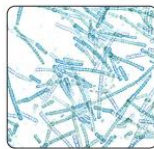
Grouping living things based on their characteristics is called classification. The first classification system developed by the Swedish scientist Carl Linnaeus (1707–1778) divided all living things into two kingdoms, animals and plants. Today, scientists classify all living things into five kingdoms. The members of each kingdom have specific features in common.

Kingdom	animal kingdom	plant kingdom	fungus kingdom	protista kingdom	monera kingdom
Features	<ul style="list-style-type: none"> multicellular cannot make food can move live on land or in water reproduce sexually 	<ul style="list-style-type: none"> multicellular make food using sunlight cannot move live on land or in water reproduce sexually or asexually 	<ul style="list-style-type: none"> unicellular or multicellular cannot make food cannot move live on land or in water reproduce sexually or asexually 	<ul style="list-style-type: none"> unicellular or multicellular some make food, others can not most can move live in water reproduce sexually and asexually 	<ul style="list-style-type: none"> unicellular make food most can move live on land or in water reproduce asexually

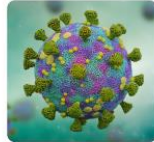
Microorganisms and viruses

A microorganism is a living thing. It is too small to be seen without a microscope. Microorganisms can be found in the Fungus, protista and monera kingdoms. Most microorganisms are beneficial. For example, cyanobacteria make oxygen, and a unicellular fungus called yeast is added to bread to make it rise. Some microorganisms are pathogens, which means they cause disease in other living things.

Viruses are not microorganisms as they are not living and need a host to survive. They are not part of any of the kingdoms. Some viruses can be beneficial and others harmful. For example, the virus SARS-CoV-2 causes the illness COVID-19.



cyanobacteria



SARS-CoV-2 virus

Fossils and the fossil record

Fossils are the remains of once-living things or traces of life, such as footprints, tracks, dung or burrows, that have been preserved as rock. Preserved remains and traces of life are called fossils if they are over 10,000 years old.

The fossil record was created by scientists to group and make sense of the vast amount of fossils that have been discovered. It is ordered from the oldest fossils found deepest in the ground to the newest fossils found closest to the surface. It provides a history of the Earth.

The fossil record tells us about:

- the living things that have inhabited Earth
- the Earth's environment over time
- how species have evolved
- extinction events

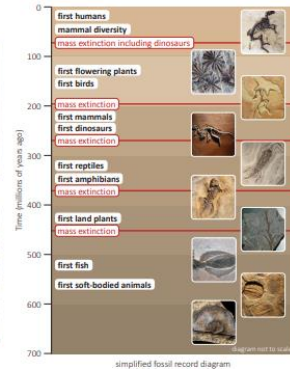
However, the fossil record is incomplete because soft-bodied animals decayed too quickly to be fossilised and fossils are still buried in the Earth's rocky layers.



fossilised turtle



fossilised footprint



The theory of evolution

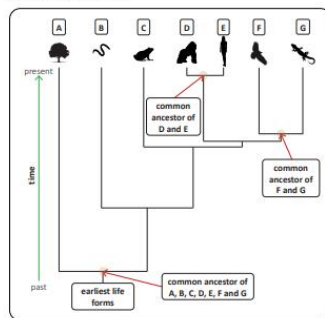
The theory of evolution was first developed by the naturalists Charles Darwin and Alfred Russel Wallace in 1858. The theory states three assumptions:

- All life on Earth has evolved from simple life forms to more complex ones over time.
- All life on Earth has common ancestors and is therefore related.
- Living things with characteristics most suited to their environment are more likely to survive and reproduce.

At first, the theory was controversial. Some saw it as an explanation for the variety of species on Earth, but others saw it as blasphemous as it challenged the Christian belief that God created the Earth and all living things. Today, the fossil record and DNA evidence support the theory of evolution.

Evolutionary tree diagrams

Charles Darwin sketched a branching tree diagram to help explain the theory of evolution. Evolutionary tree diagrams today represent what scientists think they know about the evolutionary relationships between different living things; however, they are not fact. Those living things with a more recent common ancestor, such as D and E, are said to be more closely related than those with a less recent common ancestor, such as F and G.



Inheritance

Living things that sexually reproduce pass on inherited characteristics to their offspring, such as skin colour and eye colour. Offspring inherit one copy of each gene from the female parent and one from the male parent. This mixing of genes means that offspring are unique, differing from their parents and each other.

Variation

Variation is the natural differences in characteristics between individuals of the same species. There are two types of variation: continuous and discontinuous. Continuous variation has a range of values, such as the height or mass of individuals of the same species. Line graphs display continuous variation. Discontinuous variation has a specific number of outcomes, such as eye colour or blood groups. Bar charts show discontinuous variation.

Natural selection, adaptation and survival of the fittest

Natural selection is the process behind the theory of evolution. Variation within a species is caused by small, natural changes in DNA between individuals and the random mixing of parent DNA following sexual reproduction. If a variation positively affects a living thing's ability to survive, they are more likely to live long enough to reproduce and pass on the attribute to their offspring. This process naturally selects those individuals who are better able to survive in their habitat, and is known as 'survival of the fittest'. Over time, positive attributes become common among a species and are seen as adaptations. For example, ancestors of the giraffe had shorter necks, but due to variation and natural selection, individuals with longer necks became common in the species.

There are three different types of plant adaptation:

Structural: Cacti have modified leaves called spines to deter animals from eating them.

Behavioural: Mature sunflowers face the rising Sun in the east because pollinators prefer warm flowers.

Chemical: Stinging nettles have hairs containing chemicals that sting when touched to deter animals.



Artificial selection

Artificial selection, also called selective breeding, is the process where humans breed animals and plants to produce offspring with what they consider to be desirable characteristics.

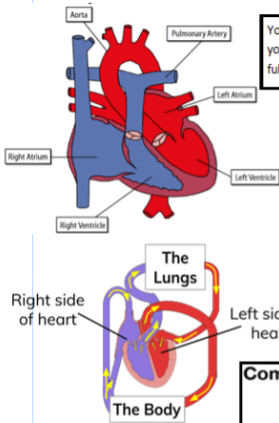
Examples include breeding cows that produce large quantities of milk or crops that are disease-resistant and produce lots of grain.



Glossary

adaptation	A physical or behavioural characteristic that allows a living thing to better survive in its habitat.
ancestor	A living thing from which others have evolved.
deoxyribonucleic acid or DNA	The inherited material inside all cells that carries the instructions needed for that living thing to develop and survive.
evolve	To change gradually over a long period of time.
gene	A small section of DNA that acts as instructions for a specific inherited characteristic, such as eye colour.
multicellular	Consisting of many cells.
species	A group of similar living things that can reproduce naturally.
unicellular	Consisting of a single cell.

The Circulatory System



Blood pumps in a figure of eight around the body – deoxygenated blood leaves the heart then travels to the lungs to take in oxygen: this makes the blood oxygenated to travel around the body.

Enquiry Question: How does the circulatory system enable the body to function?

Your circulatory system is made up of three parts: the heart, blood vessels and the blood itself. Your heart keeps all the blood in your circulatory system flowing. The blood travels through a network of blood vessels to everywhere in your body. It carries useful materials like oxygen, water and nutrients and removes waste products like carbon dioxide.

Glossary

Heart: the organ in your chest that pumps the blood around your body

Blood vessels: the narrow tubes through which your blood flows includes the arteries, veins and capillaries

Blood: a red fluid that is pumped by the heart and supplies the body with nutrients and oxygen.

Veins: blood vessels that carry blood to the heart. Arteries: blood vessels that carry blood away from the heart.

Capillaries: microscopic blood vessels found in the muscles and lungs

Oxygen: a colourless gas that exists in large quantities in the air. All plants and animals need oxygen in order to live.

Lungs: the two spongy organs inside your chest which fill with air when you breathe in. They remove carbon dioxide from blood and add oxygen.

Ribcage: the bony structure consisting of the ribs and their connective tissue that encloses and protects the lungs and heart

Carbon dioxide: a gas produced by animals and people breathing out Oxygenated: to be enriched with oxygen

Deoxygenated: to be depleted of oxygen

Components of blood

Plasma
Transports nutrients, hormones, and proteins. It is a yellow liquid that makes up about 55% of the body's blood volume.

Platelets
Form clots to stop bleeding. Platelets make up less than 1% of blood.



Red blood cells
Carry fresh oxygen through the body and remove carbon dioxide. Red blood cells make up about 40 to 45% of blood.

White blood cells
Part of the body's immune system, detect and fight viruses and bacteria. There are five major types of white blood cells, and they make up less than 1% of blood.

Source: American Society of Hematology

Enquiry Curriculum Links

Slave ships spent several months travelling to different parts of the coast, buying their cargo. The captives were often in poor health from the physical and mental abuse they had suffered.

The Heart Your heart is a very strong muscle and plays an important part in being healthy. It keeps all the blood in your circulatory system flowing. Your heart first pumps blood to your lungs. Here, the blood picks up oxygen from the air that you have breathed in. The blood (carrying oxygen) then travels back to your heart. The heart gives the blood a second push. This time, it's sent all around the body to the various organs and tissues. The blood travels back to the heart and it all begins again

Home Learning

You could visit the International Slavery Museum in Liverpool



Reading:

[Oxford Owl for School and Home](#)

[Reading and comprehension - English - Learning with BBC Bitesize - BBC Bitesize](#)

<https://schoolreadinglist.co.uk/reading-lists-for-ks2-school-pupils/suggested-reading-list-for-year-6-pupils-ks2-age-10-11/>

Writing:

<https://www.bbc.co.uk/bitesize/subjects/zv48q6f/year/zncsscw>

[Spelling and Grammar, English Games for 7-11 Years - Topmarks](#)

Maths:

<https://www.bbc.co.uk/bitesize/subjects/z826n39/year/zncsscw>

Science:

<https://www.bbc.co.uk/bitesize/topics/zvrrd2p/articles/zkq7wnb>

Computing:

[Is my child safe online? Parent's questions answered | Barnardo's \(barnardos.org.uk\)](#)

[Parents and Carers - UK Safer Internet Centre](#)

[Parental Controls & Privacy Settings Guides | Internet Matters](#)

PSHE:

[Talk PANTS & Join Pantosaurus - The Underwear Rule | NSPCC](#)

[How to make an emergency 999 call – West Midlands Ambulance Service University NHS](#)

[Foundation Trust \(wmas.nhs.uk\)](#)

PE:

[Nutrition Based Physical Activity Games - Action for Healthy Kids](#)

[Kids Active Learning & PE at Home – Think Active](#)

Useful Links:

<https://www.theschoolrun.com/homework-help/atlantic-slave-trade>

<https://www.unhcr.org/uk/teaching-about-refugees.html>