



THE  
BRIAN CLARKE  
CHURCH OF ENGLAND ACADEMY

# Year 8 Term 2

## Knowledge Organisers

LUCEAT  
LUX VESTRA

Church of England  
Trust

# Contents

## Subject

Art

Citizenship

Computing

Design Technology

Drama

English

Food Technology

Geography

German

History

Mathematics

Music

PE

Religious Studies

Science



## How to use the Knowledge Organisers

1. You can create quizzes to test yourself and your peers.
2. You can create flash cards to help you remember important information and essential vocabulary. By repeating the number of times you read this essential vocabulary, you will be more likely to use it and remember it.
3. Creating mind maps helps us organise the knowledge that is important to us. This allows us to make connections to our prior knowledge and to help us make links to future learning.

## What is Content, Form, Process & Mood?

Content, Form, Process & Mood, is the structure we use to analysis artwork, we can any break down any piece of art into the four areas below:

### Content

### Form

### Process

### Mood

Use the question prompts below to help you write your analysis.

#### Content - Describe everything you can see in the image.

- What is in the work?
- What exactly can you see?
- What is happening?
- What is it about?
- What is the theme of the work?

**Example Sentence:** In this painting there is a portrait of a man sat looking towards the artist.

#### Form - How have the Formal Elements been used?

- Texture - What is the surface like? What textures can you see?
- Pattern - What patterns can you see?
- Colour - What colours have the artist used? How and why?
- Shape - What kind of shapes are there?
- Line - What kind of lines and marks?
- Tone – What is the light like in the work?

**Example Sentence:** The artist has painted themselves wearing cool and cold blues and greens, to create a sense of sorrow and sadness.

#### Process - Explain the process of how you think the work was made.

- What materials and tools have been used?
- What is the evidence from the painting?
- Might the artist have made supporting studies sketches, photographs, maquettes, collages and stencils, for example?
- Was the work executed rapidly or did it evolve slowly over a long period?

**Example Sentence:** The artist uses an impasto technique, where they have applied thick layers of oil paint onto the canvas.

#### Mood - What is the meaning behind the work?

- How does the work make you feel? Why do you feel like this?
- Does the colour texture, form or theme affect your mood?
- Can you imagine what the artist's feelings were while producing the work?
- What do you think the artist is saying? Why?
- What message is the work/artist trying to communicate? Why

**Example Sentence:** The painting gives a sense of dread and sadness, making us question why the artist has painted this self portrait in this depressed state of mind.

# Art - Year 8: Public Art – Artists 1 & 2

Use the Knowledge organiser below and the 'Write Like An Artist' structure to support your critical artist analysis.

## Keith Haring: 1958 - 1990

Keith Haring was a popular artist and activist who was part of the legendary New York art scene during the 1980s. While he is known for his colourful works and his iconic ideas such as the radiant baby and the barking dog, much of his work responded to contemporary social and political events.

Inspired by graffiti artists, he began drawing in New York's subway stations; filling empty poster spaces with chalk drawings which people would walk past every day. His aim was to make art accessible to everyone and these works allowed him to interact with a diverse audience.

He got in trouble sometimes for drawing on the subway, but many people loved his art. He carried on drawing because he wanted everyone to experience art.

Keith Haring started becoming famous and had exhibitions in galleries. When the paintings were sold, he often gave the money to children's charities.



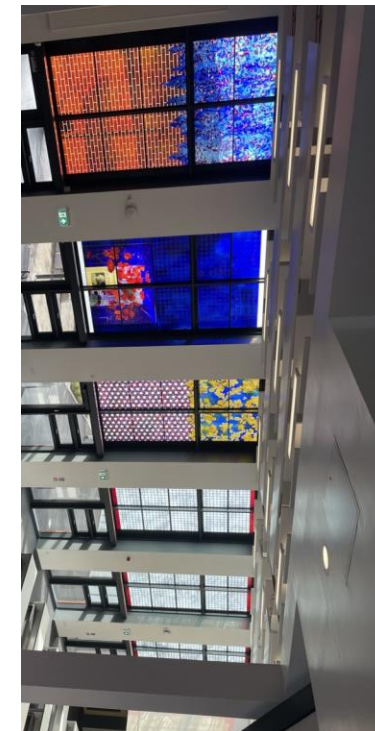
*We the Youth, 1987*

## Brian Clarke: 1953 – Present

Brian Clarke is a British painter, architectural artist and printmaker, known for his large-scale stained glass and mosaic projects, symbolist paintings, set designs, and collaborations with major figures in Modern and contemporary architecture. Born to a working-class family in the north of England, and a full-time art student on scholarship by age 13, Clarke came to prominence in the late 1970s as a painter and figure of the Punk movement and designer of stained glass.

In the Brian Clarke school glass, each window has its own meaning. In the third panel the upper two tiers show that most English of foliage the oak leaf in its early stages when sunlight passes through the thin membrane of the leaves giving the appearance that the leaves themselves glow from within is one of the moist potent symbols of optimism in harmony with beauty that I know.

The bottom three tiers are made up of an ancient Islamic ornament that is intended to pay tribute respectfully and affectionately to the Asian community in Oldham.



*Untitled, 2023*

## Further Context: Graffiti Art

Graffiti art has its origins in 1970s New York, when young people began to use spray paint and other materials to create images on buildings and on the sides of subway trains. Such graffiti can range from bright graphic images (wildstyle) to the stylised monogram (tag).

More recently, graffiti artists such as Barry McGee and Banksy have had their work exhibited in commercial spaces.

## Further Context: Stain Glass

Stained glass has been used for thousands of years, beginning with the Ancient Romans and Egyptians, who produced small objects made from coloured glass. Stained glass windows in Britain can be traced back to the 7th century, with some early examples found in churches and monasteries.

Stained glass exploded in popularity during the middle ages, and by the 12th century, the practice had become much more sophisticated. Chartres in France became the leading stained-glass manufacturer, and the materials they produced were of extremely high quality.

Use the Knowledge organiser below and the 'Write Like An Artist' structure to support your critical artist analysis.

## Yinka Shonibare: 1963 - Present

**Yinka Shonibare** is a British-Nigerian artist living in the United Kingdom. His work explores cultural identity, colonialism and post-colonialism within the contemporary context of globalisation. A hallmark of his art is the brightly coloured Ankara fabric he uses. Because he has a physical disability that paralyses one side of his body, Shonibare uses assistants to make works under his direction.

In 2013, Shonibare kicked off his Wind Sculptures series, and they're now scattered in nine spots over the world, from the Smithsonian National Museum of African Art in Washington to the Ndubuisi Kanu Park in Lagos. This new piece in Central Park is the first in the "second generation" of Wind Sculptures and signifies new beginnings.

"My piece is about the different backgrounds of people coming together," said Shonibare. "It does touch on migration – which is central to the work – as the fabrics are a signifier of the identity of people from Africa and the African diaspora, but more importantly, how they encounter with Europe."



*Wind Sculpture V, 2014*

## Further Context: African Wax Print

African wax prints, Dutch wax prints or Ankara, are omnipresent and common materials for clothing in West Africa and Central Africa. They were introduced to West and Central Africans by Dutch merchants during the 19th century, who took inspiration from native Indonesian technique and Akwete cloth designs. They began to adapt their designs and colours to suit the tastes of the African market. They are industrially produced colourful cotton cloths with batik-inspired printing. One feature of these materials is the lack of difference in the colour intensity of the front and back sides.

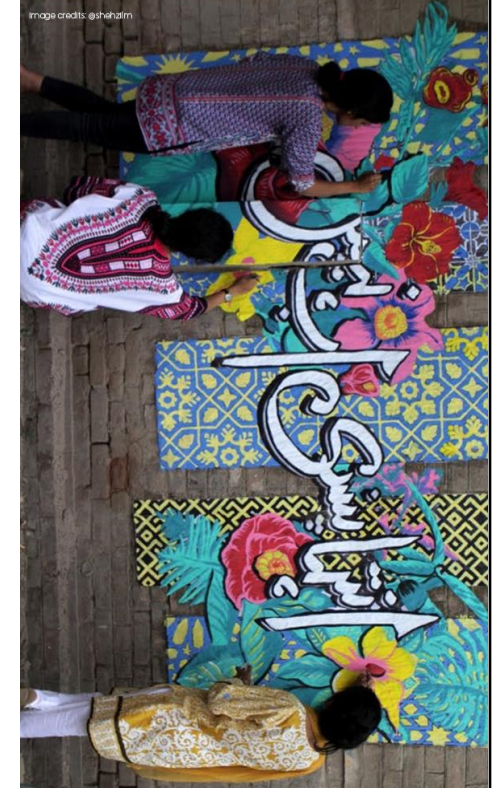
## Rohama Malik

Rohama Malik is a multidisciplinary illustrator and educator who works on diverse topics from speculative fiction to mental health.

In 2016 a terrorist attack, at Lahore's popular Gulshan-e-Iqbal Park, which left scores dead and hundreds injured. A group of youngsters got together to paint a 'Wall of Tolerance' on one of the walls of the park, in a bid to teach tolerance and foster love in a city still recovering from the after-effects of hate. Rohama felt "it was important to send a message of peace, love and empathy, and not channel the anger we all feel at the horrific events that occurred."

"Public art, however, takes sharing of joint sentiments to the place where it probably matters most: to the streets. This is art for its own sake, putting it where everybody can encounter it, where hopefully it sparks a thought, a conversation."

The design says, "Inteha Pasandi Ab Nahi" translating as "Extremism No More". The design is meant to be a message of love, new beginnings, and flowering hope. The patterns at the back are influenced culture from across Pakistan.



*Wall of Tolerance, 2016*

## Further Context: Islamic Art

The term *Islamic art* not only describes the art created specifically in the service of the Muslim faith (for example, a mosque and its furnishings) but also characterises the art and architecture historically produced in the lands ruled by Muslims, produced for Muslim patrons, or created by Muslim artists. As it is not only a religion but a way of life, Islam fostered the development of a distinctive culture with its own unique artistic language that is reflected in art and architecture throughout the Muslim world.

# Year 8 Citizenship Topic 1 - British Values

## Essential Vocabulary

### 1. What are the 4 British Values?

- **Democracy**- means that we **vote** for our leaders and have freedom to do so.
- **Our right to an opinion.**
- **Rule of Law**  
We understand what **rules and laws** are in our country. It also means that we understand why we have these laws, and follow them at all times.  
**No one is above the law**
- **Individual Liberty**  
It ensures we have freedom of speech for all. We may have our own opinions on matters and share them without fear
- **Tolerance and Mutual Respect**
- treating others as you would want to be treated, and respecting those around us. Working together within our community.  
Respecting our diverse community

### 2. What are the strengths and weaknesses of a democracy?

- ✓ **Strengths**
- ✓ Everyone has a say in how the country is run and can vote for who they want to.
- ✓ People have the right to freedom of speech
- X **Weaknesses**
- X Some people may be offensive towards the protected characteristics when using their freedom of speech

### 3. What is Local Government?

#### Central government

The **main government in London run by the Prime Minister**. Decides on **the law** and national issues such as taxes, foreign policy, funding.

#### Local government

Focus and run **issues in our local area** e.g. Oldham. They are responsible for areas **such as schools, parks, waste collection, transport**.

#### Active Citizenship Project- Youth Crime How can we stop youth crime in the UK?

The Youth Offending Team's job is to come up with a programme to help the young person change their ways.

A programme will cover:

1. Finding out why the young person got in trouble
2. Helping parents control the young person
3. Counselling
4. Activities in the community
5. Apologising to the victim(s)
6. Improving school work and attendance

### 4. Why do we campaign?

People campaign to make change in relation to particular issues:

- To change a law they feel is unfair or out of date.
- To raise attention on an issue such as low wages, discrimination.
- To change attitudes - etc. Greenpeace - climate change.

The success of campaigns often relies upon:

- The **number of people** that get involved
- The **organisation** of people - whether people are using the same events/messages
- The **core message** that the campaign is promoting.

**This is one way that people are using their liberty (freedom) to participate in a democratic society.**

### 5. How does the Justice System work in the UK?

The Criminal Justice system consists of three parts:

#### 1) Law Enforcement (Police)

•

#### 2) The Courts (adjudicators = someone who makes a decision)

•

#### 3) Corrections (prisons, fines, parole, probation)

#### Civil

When there is **a dispute between two people**. Usually, civil cases are brought when someone feels damage has been done to them

#### Criminal

When **someone breaks a law**. These are **crimes against society as a whole**, e.g. theft, murder.

### 6. How should criminals be punished?

#### •Prison:

•A building in which people are legally held as a punishment for a crime they have committed or while awaiting trial.

#### •Criminal Responsibility

•This refers to the age at which you are thought to be in charge of your own.

•The age of criminal responsibility in England and Wales is 10 years old.

**Government** - The body of people with the authority to govern a country or state.

**Local government** - Smaller geographical area of effect in which individuals are directly situated

**Central government** - Wider geographical area of effect - the whole nation

**Parliament** - The name given to the UK's highest legislature, consisting of the Sovereign, the House of Lords, and the House of Commons.

**Petition** - generating a cause that can be sent to government that causes change.

**Department** - A smaller division of government in charge of a specific thing e.g. housing

**Councillor** - An elected official who operates in the local context in relation to local issues

**Elected** - Somebody who is voted into office by citizens

**Council** - The governing body for a local area

**Emissions** - The production of pollution especially gas or radiation.

# Computing Year 8: Unit 2 - HTML Website Creation

## Key Vocabulary

### Core Knowledge - Basic Tags

Name	Open	Close
HTML	<html>	</html>
Head	<head>	</head>
Body	<body>	</html>
Title	<title>	</title>
Paragraph	<p>	</p>
Heading	<h1>	</h1>
Italic	<i>	</i>
Bold	<b>	</b>
Underline	<u>	</u>
Style	<style>	</style>
Hyperlink	<a href "">	</a>
Table	<table>	</table>
Table	<tr>	</tr>
Table	<td>	</td>
Image	<img src = "dog.jpg">	

- Link: Apply your knowledge:**
- Remember, if you open a tag, you must close it! The only exception to this is the image tag - <img src = "puppy.jpg">
  - If you fail to close a tag, the formatting you intended in the opening tag will continue throughout the rest of the document from the point you opened the tag.

### Context

## HTML

HTML stands for **Hypertext Markup Language**. It is the programming language we use to code websites. HTML is the standard markup language for creating websites. HTML describes the structure of a webpage. HTML consists of a series of elements called 'tags'. HTML elements tell the browser (MS Edge, Chrome, Firefox etc.) how to display the content on your screen. HTML elements label pieces of content such as "this is a heading", "this is a paragraph", "this is a link" etc.

- Link: Show your understanding**
- Research other ways of creating websites other than using HTML
  - Look at the source code of your favorite website - can you recognize any of it? Have you used any of it?

### Core Knowledge - Code vs Web view

When creating a website you have to work with two separate views, the first is the actual code itself - viewed in Notepad++, the second is the actual website itself - viewed in a web browser e.g. MS Edge, Google Chrome etc..

When developing a website, to open the code for the file, you have to right click on the the document and choose 'Open with Notepad++' - this will open up the code view. If you double click the document it will open up in web view using a web browser such as Microsoft Edge or Google Chrome.

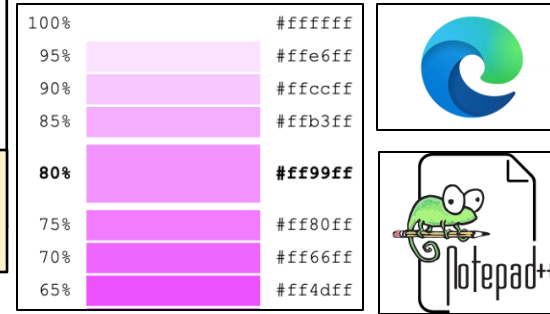
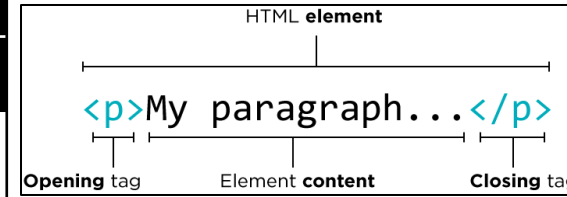
### HTML Tag etiquette

All HTML tags except one need to be closed. Whenever you open a tag, be it a heading, paragraph, table or hyperlink - it must be closed. E.g. <h1> School </h1>.

The closing tag always has a forward slash before the tag name. e.g. </h1>.  
The image tag <img src = "puppy.jpg"> does not need to be closed.

### Common errors and misconceptions.

- The <title> tag does not put a title on the actual page content itself - the title goes on the tab for the browser.
- Made some changes to your code that are not appearing on the website? Make sure you have saved any changes to your code!



### Basic HTML page layout

```
<html>
<head>
<title>Page Title</title>
</head>
<body>

<h1>My First Heading</h1>
<p>My first paragraph.</p>

</body>
</html>
```

<b>Programming</b>	the process of giving something instructions to do something
<b>HTML</b>	Hypertext Markup Language. Used to code and create websites.
<b>Tags</b>	Used to create an element in HTML, using <> brackets..
<b>Notepad ++</b>	The open-source software we use to create websites
<b>Formatting</b>	Changing how something looks
<b>HEX colours</b>	How hundreds of colours are listed and used.
<b>Style</b>	Changing how something looks
<b>Hyperlink</b>	A link that, when clicked on, takes the user to another web page or website
<b>CSS</b>	Cascading Style Sheets
<b>Open Source</b>	Free to use and change code as user sees fit
<b>Table</b>	Data which is organised into rows and columns
<b>Structuring Code</b>	Making sure our code is neat and easy to read

- Link: Stretch and Challenge**
- Go to the W3 Schools HTML page and add a feature to your website that has not been taught. <https://www.w3schools.com/html/>

## Key Term Box

### Subtext

Subtext is the underlying message being conveyed by a piece of dialogue. It adds an extra layer of complexity to scenes and their characters.

### Ensemble

An approach to acting that aims for a unified effect achieved by all members of a cast working together on behalf of the play, rather than emphasizing individual performances.

### Themes

What the story is truly about at its core. It is often the lesson or moral we are meant to take away from this particular story.

## Shakespeare's Theatre



William Shakespeare was born in Stratford Upon Avon on April 23<sup>rd</sup> 1564



At some point before 1592 Shakespeare moved to London and began his career as a playwright



In 1606, Shakespeare wrote 'Macbeth'.



The Royal Shakespeare Company are based in Stratford Upon Avon and they bring Shakespeare's theatre to life for a modern day audience.

## 'Macbeth' by William Shakespeare

The main themes of Macbeth—loyalty, guilt, innocence, and fate—all deal with the central idea of ambition and its consequences.



### Macbeth

Macbeth is an ambitious man, fated to be king. He starts the play as Thane of Glamis, but is told by the witches that he will soon be declared Thane of Cawdor and later King. His ambition is awakened by Lady Macbeth who suggests he should seize his destiny by murdering Duncan.

### Banquo

Banquo is a thane in Duncan's army, and at first a friend to Macbeth. He is equal in rank to Macbeth at the beginning of the play, and although Macbeth is told he will be King, Banquo is told that his children will be kings.

### Lady Macbeth

Lady Macbeth is strong, ruthless, and ambitious. It is she who suggests to Macbeth that they should kill Duncan in order to make the witches' prophecy come true. Seemingly stronger willed than Macbeth, she helps her husband recover from his fear after he kills Duncan and helps to cover up.

### The Witches

The Witches appear to be women, yet they have beards like men, and while they initially appear as real to Macbeth and Banquo as any other person stood before them, they soon after vanish into thin air without warning, leaving them to question their own judgement.



What are the key Drama techniques I will be learning this term?

### Iambic Pentameter

A rhythmic pattern that consists of ten syllables per line, with alternating stressed and unstressed syllables.

### Stage Directions

Stage Left  
Down Stage Left  
Up Stage Left  
Stage Right  
Down Stage Right  
Up Stage Right  
Down Stage Centre  
Up Stage Centre  
Centre Stage

### Proxemics

How close or near you are to others on stage. This can help to communicate meaning e.g. if your character is scared of another character you might stand far away.



# English Year 8: Unit 3 & 4 The Suffragettes & The Book Thief (novel)

## Essential Vocabulary

### The Fertile Question

How has the development of English Language and Literature made an impact on the world and those who have accomplished greatness?

### Key Knowledge

What was life like in the 1900's for women?

- Suffragettes and empowerment
- Patriarchal attitudes towards women
- Role of propaganda

#### The Art of Rhetoric

Aristotelian Triad: Ethos, Pathos, Logos

Rhetorical Devices: rhetorical questions, anecdotes, varied sentences lengths, counter argument, range of punctuation, alliteration, hyperbole, exclamatory sentences, emotive language,

Considering writer's perspectives and viewpoints

- Narrative voice
- Passive/active voice
- Omniscience

#### The Book Thief

Focus on Death as a narrator (perspective)

Impact of holocaust

The Book Thief's rich figurative language and themes. Death is the most obvious example of personification in the text; however, Death employs a great deal of similes, metaphors, hyperboles, and personification in its narration. One of the most essential themes in this novel is, "Words have worlds of power." As Liesel learns to read, and then write, she steals something beyond books—she takes agency over the effects of a perilous war that is beyond her control. There are several instances of epistolary content in the novel—letters, illustrated stories from Max, etc.—that support this idea

**Link: Apply your knowledge:**

Using a range of rhetorical devices to craft a speech to your local MP about the local issue in Oldham regarding accessible education for all.

### Aristotelian Triad

Aristotle taught that a speaker's ability to persuade an audience is based on how well the speaker appeals to that audience in three different areas: logos, ethos, and pathos. Considered together, these appeals form what later rhetoricians have called the rhetorical triangle.

**Link: Show your understanding**

Using Martin Luther King's 'I have a Dream' speech, identify as many examples as you can of rhetorical devices used.



### Narrative voice

**Omniscient narrator:** the all-knowing voice in a story, giving insight into the narrative events, context and character's motives.  
**Unreliable narrator:** an untrustworthy storyteller most often used in narratives with a first-person point of view.



### The Book Thief

The Book Thief is a story narrated by a compassionate Death who tells us about Liesel, a girl growing up in Germany during World War II. She steals books, learns to read, and finds comfort in words. She and Max, the Jew her family protects, are the only main characters that survive the war.

**Link: Show your understanding**

Using the definition of the narrative voices, write a paragraph explaining the voice of Death in The Book Thief.

### Misconceptions

Death tells us about the demands of his job, how some years are worse than others. He says that humans have a lot of misconceptions about death. For instance, Death doesn't carry a scythe or a sickle; he only wears a hooded black robe when it's cold; and he doesn't appear skull-like.

### The Art of rhetoric

<b>Ethos</b>	Ethos can be thought of as how credible the writer's argument is. It is the writer's argument validated by professionals who could add authenticity to the persuasive piece. Example: a scientist explaining the planet's rising temperature would add kudos to an argument on climate change.
<b>Pathos</b>	Pathos appeals to the emotions and the sympathetic imagination, as well as to beliefs and values. Pathos can also be thought of as the role of the audience in the argument. The writer appeals to the audience's emotions via a personal or emotionally charged anecdote. Example: When persuading an audience to support an animal sanctuary, the writer may use an anecdote about an animal in distress which was eventually rescued.
<b>Logos</b>	Logos appeals to reason. Logos can include statistics and data to support their argument. It can be used in a hyperbolic way. Example: "Millions upon millions of people were forced to leave their homes!"

**Link: Apply the knowledge, master the skill.**

Using any information from your knowledge organiser:  
 Create a mind map of rhetorical devices used, focusing on any speech  
 Create a character profile for a protagonist in The Book Thief

**Unreliable narrator** – (noun phrase) a character in a story who is also the narrator but whose viewpoint is not fully reliable.

**Omniscient** (adjective) – a being or viewpoint that 'knows everything' – an idea often linked to God. In literature it refers to a narrator that has unlimited access into all characters and events.

**Satire** (noun) the art of making someone or something look ridiculous for the purpose of making a serious political or social point.

**Motif** (noun) an idea, object or symbol that is repeated and reinforced within a story

**Rebellion** (noun) – a person or group resisting authority and control of a leader or government by using protests or violence.

**Abandonment** (noun) the act of leaving a person or thing permanently and completely.

**Connotation** (noun) the ideas or feelings suggested by a word that apart from the thing it explicitly names or describes.

**Ethos** (noun) – the distinguishing character, sentiment, moral nature, or guiding belief of a person, group or institution

**Pathos** (noun) a quality in a film, song or text that makes people feel sadness and pity.

**Logos** (noun) – appealing to an audience's sense of logic and reason,

**Rhetoric** (noun) – the art or skill of speaking or writing in a way to persuade or influence people to adopt a certain viewpoint.

**Suffrage** (noun) – the right to vote for a government or leader in a political election.

**Empowerment** (noun) the process of becoming stronger and more confident, especially in controlling one's life and claiming one's rights.

**Propaganda** (noun) information, especially of a biased or misleading nature, used to promote a political cause or point of view

**Link: Show your understanding of key vocabulary**

- Put together sentences using a range of your essential vocabulary. This will help you remember how to use the word accurately
- Create flashcards with the essential vocabulary on one side and the definition on the other.

## Year 8 Food preparation and Nutrition: Key words and subject specific terminology

**5-a day campaign-** a government campaign to encourage people to eat 5 portions of fruits and vegetables each day.

**Absorb-** the nutrients are taken into the body (absorbed) and transported in the blood for the body to use.

**Allergen-** a substance or food that may cause an allergic reaction.

**Allergic reaction-** where the body reacts suddenly and sometimes seriously to a specific food.

**Amino acid-** building blocks of protein.

**Balanced diet-** a diet that contains all the nutrients in the right proportions.

**Boiling-** cooking in liquid that is at boiling point (100°C).

**Bread-** a mixture of flour, yeast, salt, sugar and liquid that is shaped into a dough and baked.

**Caramelize-** the process of sugar melting and changing colour when heat is applied.

**Carbohydrate-** one of the 5 main nutrients. One of the 3 macronutrients.

**Cereals-** the seeds of cultivated grasses. They are known as grains and are used as a food source.

**Coagulate-** the scientific name for protein setting. For example, eggs coagulate when we cook them.

**Coat-** to cover a specific ingredient with another ingredient to create a finishing technique, protective layer or textured layer.

**Coeliac disease-** an intolerance to gluten which is found in wheat and other cereal grains and cereal grain products.

**Conduction-** a type of heat transference where the heat transfers through solid and liquid materials.

**Constipation-** when stools (poo) are hard to pass.

**Contaminate-** the transfer of an unwanted substance to another, for example, bacteria from raw meat to ready to eat food.

**Convection-** where heat is transferred through air or water.

**Creaming-** the technique of beating fat and sugar together to incorporate air. The air bubbles get trapped into the mixture.

**Diet-** the foods you choose to eat.

**Dietary fibre-** an undigestible part of plant foods. Fibre is found in the cell walls of fruits vegetables and grains. It is very important for a healthy digestive system.

**Digestive system-** parts of the body where food is broken down to provide nutrition.

**Dry heat-** heating food without water or oil. Examples of cooking with dry heat include, dry frying, grilling, baking, toasting and using a blow torch.

**Energy needs-** the amount of energy needed by individuals. The energy requirements for individuals depends on age, sex and lifestyle (Physical Activity Level PAL)

**Environment-**the surrounding air, land and water where people live.

**Fat soluble vitamins-** Vitamin A, D, E and K. Fat soluble vitamins.

**Fermentation-** the process where yeast produces the gas called carbon dioxide.

**Gelatinisation-** the scientific name for the process of heating starches with liquid. The starch particles swell as they absorb the liquid and break open. This causes the liquid to thicken. For example, in a roux sauce.

**High biological value (HBV) proteins-** protein foods which contain all the essential amino acids.

**Knock back-** this is when some of the air is knocked out of a dough before shaping.

**Low biological value (LBV) proteins-** protein foods which have one or more of the essential amino acids missing.

**Milling-** the process of grinding grains to make flour.

**Pulses-** peas, beans and lentils.

**Reduction-** simmering a liquid so that the mixture evaporates and thickens.

**Stir frying-** cooking food quickly over high heat with a little oil.

**Sustainable-** meeting the needs of people both now and in future generations.

**Wholegrain-** the whole of the grain is crushed to make wholemeal or wholegrain flour.

### Vitamins and minerals

Vitamins and minerals are micronutrients. This means they are needed in smaller amounts, but we still need a wide variety of different vitamins and minerals in our diet. The best way to get all the different vitamins and minerals is to eat a wide variety of different foods. 'Variety is the spice of life'. You should choose to eat a rainbow of colours when selecting fruits and vegetables. Also aim to eat foods from each of the food groups in the recommended proportions to ensure a good range of vitamins

### Protein

Protein is one of the 3 macronutrients and is an essential part of your diet. Protein is needed for growth and repair of the body. Children and pregnant women need more protein for growth, and everyone needs more protein to repair the body after an injury. Proteins are made up of amino acids. There are around 20 amino acids. Of these 20 amino acids, 10 are essential amino acids for children and 8 for adults. The essential amino acids need to be provided by your diet as your body cannot make them. The non-essential amino acids can be made by the body. HBV or High Biological Value proteins contain all the essential amino acids whereas LBV or Low Biological Value proteins are missing one or more of the essential amino acids.

### Fibre

Fibre is important for a healthy digestive system. It helps food waste to travel through the body more easily. Too little fibre in the diet can cause diseases of the bowel. If you don't have enough fibre in your diet, it can also lead to constipation, which can eventually lead to cancer of the bowel. Having the right amount of fibre can reduce chances of getting type 2 diabetes and heart disease. The recommended amount of fibre is 30g per day for adults. The NHS recommend that 11 to 16 year-olds need about 25g a day.

Fibre is only found in plant foods, so foods that come from the ground. Fibre is found in the bread and cereal products food group but you should choose wholegrain varieties of bread, pasta and rice in order to get the right amount of fibre each day. You should also try to eat the

### Carbohydrate

Carbohydrate is one of the 3 macronutrients. It provided the body with its first source of energy. 1g of carbohydrate provides the body with 4kcal. Carbohydrates are divided into 3 groups: Sugar, starch and dietary fibre.

1. Starch- cereal grains such as wheat, rice, oats, barley and rye are ground to make flours. These flours are rich in starchy carbohydrate. Potatoes and yams are also in this group.
2. Sugar- this includes sugar that we add to recipes or drinks, this includes sweets, cakes, chocolate and bottles and cans of soft drink. Also, treacle and syrups, honey and jams.
3. Dietary fibre- fibre is found in the cell walls of vegetables, fruits and cereal grains. It is an undigestible part of the plant food which plays a very important role in the digestive system.

### Fat

Fat is one of the 3 macronutrients and is an essential part of your diet. However, some fats are better for our health and some types of fat are less good for us. Generally, many people eat too much fat and this is not good for their health. Healthy fats are unsaturated fats and tend to come from plant foods. For example, olives, avocados, nuts and seeds. Oily fish is also a great source of healthy essential fats, for example, salmon, trout, mackerel. On the other hand, animal fats (saturated fats) have been linked to increased cases of heart disease. Animal fats include: butter, lard, the white visible fat on meat, cream, hard cheese, and many types of processed foods.



## Where does food come from?

Food can be grown, caught, or reared. Where food comes from as well as how it is produced, processed and transported is known as **food provenance**.



Wheat growing to process into wheat flour. Wheat flour is then used to make bread, pasta, cakes and biscuits.



Cows being reared by a farmer. The farmer may process the milk or the meat from the cow. The meat from a cow is beef.



**Why do we eat food?** Eating is one of the joys in life. We use food for getting together socially, whether having lunch at school, having a family meal or even for a celebration. However, we need food to provide good nutrition to help us to be healthy, both physically and mentally. Food contains nutrients. The nutrient is the part of the food which the body needs to work properly. The main nutrients and their basic functions are given here:

<b>Carbohydrate</b>	<b>the bodies first source of energy</b>
<b>Protein</b>	<b>growth and repair of body tissue</b>
<b>Fat</b>	<b>warmth and insulation</b>
<b>Vitamins</b>	<b>Protect us from disease</b>
<b>minerals</b>	

**Macro-nutrients:** Macro nutrients are needed in larger quantities. They provide the body with energy. This energy is measured in Kilo calories (kcal).

**Micro nutrients:** Micro nutrients are needed in tiny amounts. They have specific functions in the human body. They do not provide the body with any energy.

Our **food choices** have an impact on the environment depending on how it is farmed, processed, packaged and transported. We can make more ethical choices by choosing, local, seasonal, organic and fair-trade products.

## What are the different types of farming?

### Intensive farming

This method of farming aims to have an increased amount of food. This could be by using chemical fertilisers to produce high yields of a crop. It could also mean keeping animals indoors in large numbers (chicken farming)

### Free range farming

In free range farming, chickens or other animals are allowed to roam outside and have a lot more space. This is a more natural environment for the animals welfare.

### Organic farming

In organic farming, food (plant and animal food) is produced following strict guidelines. For example, less use of chemicals when growing crops and farmers use a limited use of drugs when rearing animals.

# Geography Year 8 term 2 – Africa, Development

## What is development?

Development is an improvement in living standards through better use of resources.

<b>Economic</b>	This is progress in economic growth through levels of industrialisation and use of technology.
<b>Social</b>	This is an improvement in people's standard of living. For example, clean water and electricity.
<b>Environmental</b>	This involves advances in the management and protection of the environment.

## Measuring development

These are used to compare and understand a country's level of development.

### Economic indicators examples

<b>Employment rate</b>	The proportion of the population working
<b>Gross Domestic Product per capita</b>	This is the total value of goods and services produced in a country per person, per year.
<b>Gross National Income per capita</b>	An average of gross national income per person, per year in US dollars.

### Social indicators examples

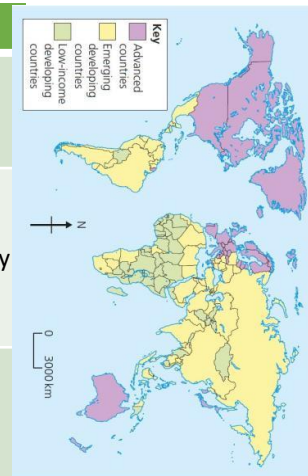
<b>Infant mortality</b>	The number of children who die before reaching 1 per 1000 babies born.
<b>Literacy rate</b>	The percentage of population over the age of 15 who can read and write.
<b>Life expectancy</b>	The average lifespan of someone born in that country.

### Mixed indicators

<b>Human Development Index (HDI)</b>	A number that uses life expectancy, education level and income per person.
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## Variations in the level of development

<b>LICs</b>	Poorest countries in the world. GNI per capita is low and most citizens have a low standard of living.
<b>NEEs</b>	These countries are getting richer as their economy is progressing from the primary industry to the secondary industry. Greater exports leads to better wages.
<b>HICs</b>	These countries are wealthy with a high GNI per capita and standards of living. These countries can spend money on services.



## Causes of uneven development

Development is globally uneven with most HICs located in Europe, North America and Oceania. Most NEEs are in Asia and South America, whilst most LICs are in Africa. Remember, development can also vary within countries too.

## Physical factors affecting uneven development

Natural Resources	Natural Hazards
<ul style="list-style-type: none"> <li><b>Fuel sources</b> such as oil.</li> <li>Minerals and metals for fuel.</li> <li><b>Availability for timber.</b></li> <li>Access to <b>safe water.</b></li> </ul>	<ul style="list-style-type: none"> <li>Risk of tectonic hazards.</li> <li>Benefits from <b>volcanic material</b> and <b>floodwater.</b></li> <li>Frequent hazards <b>undermines redevelopment.</b></li> </ul>
Climate	Location/Terrain
<ul style="list-style-type: none"> <li><b>Reliability</b> of rainfall to benefit farming.</li> <li><b>Extreme climates</b> limit industry and affects health.</li> <li>Climate can <b>attract tourists.</b></li> </ul>	<ul style="list-style-type: none"> <li><b>Landlocked countries</b> may find trade difficulties.</li> <li>Mountainous terrain makes farming difficult.</li> <li><b>Scenery attracts tourists.</b></li> </ul>

## Consequences of Uneven Development

<b>Wealth</b>	People in more developed countries have higher incomes than less developed countries.
<b>Health</b>	Better healthcare means that people in more developed countries live longer than those in less developed countries.
<b>Migration</b>	If nearby countries have higher levels of development or, people will move to seek better opportunities and standard of living.

## Human factors affecting uneven development

<b>Aid</b>	<b>Trade</b>
<ul style="list-style-type: none"> <li>Aid can help some countries develop <b>key projects</b> for infrastructure faster.</li> <li><b>Aid</b> can improve services such as schools, hospitals and roads.</li> <li>Too much <b>reliance on aid</b> might stop other trade links becoming established.</li> </ul>	<ul style="list-style-type: none"> <li>Countries that export more than they import have a <b>trade surplus</b>. This can improve the national economy.</li> <li>Having <b>good trade relationships</b>.</li> <li><b>Trading goods</b> and services is more profitable than raw materials.</li> </ul>
<b>Education</b>	<b>Health</b>
<ul style="list-style-type: none"> <li>Education creates a <b>skilled workforce</b> meaning more goods and services are produced.</li> <li><b>Educated people earn more money</b>, meaning they also pay more taxes. This money can help develop the country in the future.</li> </ul>	<ul style="list-style-type: none"> <li><b>Lack of clean water</b> and poor healthcare means a large number of people suffer from <b>diseases</b>.</li> <li>People who are ill cannot work so there is little contribution to the economy.</li> <li>More money on healthcare means less spent on development.</li> </ul>
<b>Politics</b>	<b>History</b>
<ul style="list-style-type: none"> <li><b>Corruption</b> in local and national governments.</li> <li>The <b>stability of the government</b> can effect the country's ability to trade.</li> <li>Ability of the country to <b>invest into services and infrastructure</b></li> </ul>	<ul style="list-style-type: none"> <li><b>Colonialism</b> has helped Europe develop, but slowed down development in many other countries.</li> <li>Countries that went through industrialisation a while ago, have now develop further.</li> </ul>

## Key Terms

**Adaptation** – How a plant or animals has changed its characteristics to be able to survive in the environment it lives in

**Biome** – Areas of the planet with a similar climate and landscape, where similar animals and plants live.

**Biodiversity** – The variety of life in the world or a particular habitat.

**Commercial farming** – Farming to sell produce for a profit.

**Debt reduction** – National debt relief in return for protecting rainforests.

**Deforestation** – The chopping down and removal of trees.

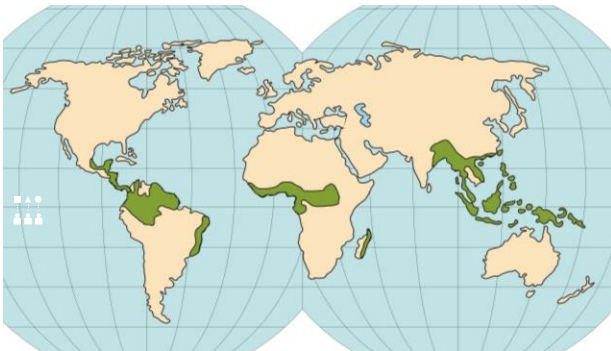
**Ecotourism** – Responsible travel to natural areas that conserves the environment and benefits locals.

**Logging** – Cutting down trees and selling the timber.

**Soil erosion** – Removal of topsoil faster than it can be replaced.

**Sustainability** – Progress meeting today's needs with affecting future generations.

## Location



10°N and 10°S of the Equator, Between the tropic of Cancer and Capricorn. Examples: South America (Amazon), the DRC (Africa), Indonesia & Malaysia (Asia)

## Characteristics

**Climate** - High temperatures (27°C) and high rainfall (2000mm +)

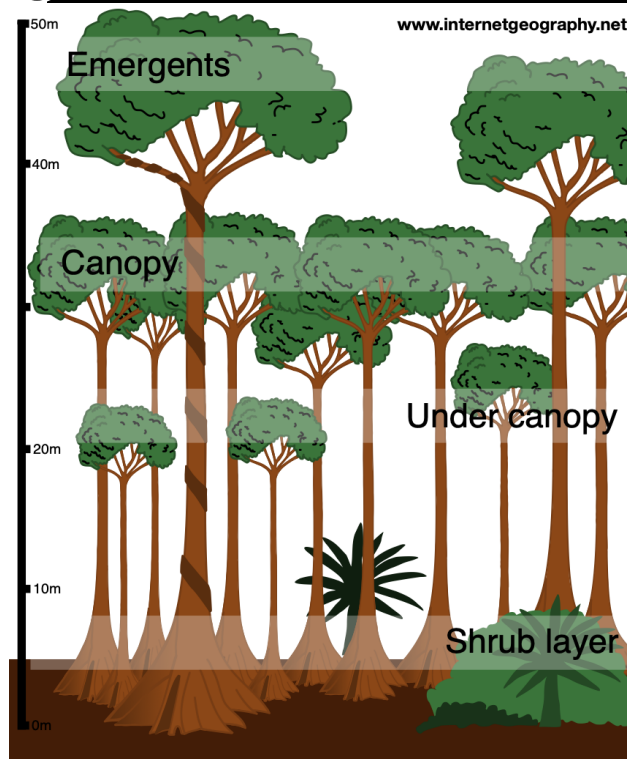
**Water** – Distinct wet season lasting several months. Leaching during this time.

**Soil** – Not very fertile. Nutrients concentrated in the topsoil & quickly absorbed.

**Biotic** – Highest biodiversity in the world. Thousands of species of plants and animals.

**People** – Traditional tribes live sustainably. Exploitation for \$\$ gain by non-indigenous.

## Plant and animal life



**Poison Dart Frog** - bright colours deter predators.

**Sloths** - long, sharp claws that help them cling onto branches.

**Spider Monkey** - prehensile tail to be able to grasp the branches of trees.

**Jaguars** - large claws, which enable them to climb small trees and catch their prey.

**Emergents** and lianas grow to reach the sunlight.

**Buttress roots** anchor the trees in the shallow soil.

**Smooth bark** to deter epiphytes.

**Plants** have thick, waxy leaves & drip tips to channel water.

## Causes of deforestation

**Logging** – Hard wood (mahogany & teak) valued for furniture. Small trees pulped/charcoal.

**Road building** – Increased accessibility encourages development e.g. Trans-Amazonian.

**Mineral extraction** – Minerals (gold, bauxite, and copper) mined extensively.

**Energy development** – High rainfall creates ideal conditions for HEP.

**Settlement and population growth** – Settlements developed to service developments.

## Impacts of deforestation

### Economic Development

- Commercial farming and mining generate employment and tax income
- Education, health care and social conditions are improved from tax revenue.
- Raw materials used by processing industries increasing the value of exported products.
- Cheap, renewable energy = development.
- Long-term economic losses due to forests being destroyed and rivers polluted.
- Loss of biodiversity affects tourism.

### Soil Erosion

- Exposed land increases soil vulnerability to soil erosion reducing fertility.

### Climate Change

- Local environment becomes hotter and drier.
- Reduction in carbon sink due to deforestation.
- Burning trees releases carbon dioxide.

Sustainable management

Ecotourism conservation and education

debt reduction  
International hardwood agreements  
Strategies  
Selective logging and replanting

# CORE KNOWLEDGE – Year 8 HT2

Rooms in the school	
Wie ist deine Schule?	What is your school like?
der Computerraum	the computer room
der Schulhof	the school playground
die Sporthalle	the sports hall
die Aula	the assembly hall
die Kantine	the canteen
die Bibliothek	the library
das Klassenzimmer	the classroom
das Lehrerzimmer	the staff room
das Labor	the science lab
ist ...	is ...
die Toiletten	the toilets
die Labors	the science labs
sind ...	are ...

Key verbs					
tragen	to wear	haben	to have	sein	to be
ich trage	I wear	Ich habe	I have	ich bin	I am
du trägst	you (singular) wear	du hast	you (singular) have	du bist	you (singular) are
Trägst du ...?	Do you wear ?	Hast du ...?	Do you have ?	Bist du?	Are you ?
er/sie trägt	he / she wears	Er /sie hat	he / she has	er / sie ist	he / she is
wir tragen	we wear	Wir haben	we have	wir sind	we are
ihr tragt	you (plural) wear	Ihr habt	you (plural) have	ihr seid	you (plural) are
sie tragen	they wear	Sie haben	they have	sie sind	they are

Adjectives			
irre	amazing	faszinierend	fascinating
sehr gut	very good	ruhig	quiet
super	super	schön	beautiful
toll	great	teuer	expensive
gut	good	nicht schlecht	not bad
cool	cool	okay	OK
interessant	interesting	langweilig	boring
praktisch	practical	nervig	annoying
einfach	easy	stinklangweilig	deadly boring
bequem	comfortable	furchtbar	awful
modisch	fashionable	klein	small
groß	big	alt	old
neu	new	schmutzig	dirty
modern	modern	laut	loud
sauber	clean	altmodisch	old-fashioned

- Man muss (You must)
- Man muss nicht (You must not)
- Man darf (You are allowed)
- Man darf nicht (You are not allowed)
- Wir müssen (We must)
- Wir müssen nicht (We must not)
- Wir dürfen (We are allowed)
- Wir dürfen nicht (We are not allowed)

- ### School rules
- im Computerraum (in the computer room)
  - im Schulhof (in the school playground)
  - in der Sporthalle (in the sports hall)
  - in der Aula (in the hall)
  - in der Kantine (in the canteen)
  - in der Bibliothek (in the library)
  - im Klassenzimmer (in the classroom)
  - im Lehrerzimmer (in the staff room)
  - im Labor (in the science lab)
  - in den Toiletten (in the toilets)
  - in den Labors (in the science labs)

- lernen. (learn.)
- ruhig sein. (be quiet.)
- lesen. (read.)
- Sport machen. (do sport.)
- essen. (eat.)
- trinken. (drink.)
- Sportschuhe tragen. (wear trainers.)
- gehen. (go.)
- spielen. (play.)



Phonemes			
- e	eh in Porsche	ch	h in human
ü	ooooo	z	ts in tsunami
ei	i in mice	eu	oi in noise
ig	h in huge	w	v in very
en	en in engaged	au	ou in loud
ß	ss in boss	sch	sh in shine
g	g in guitar	j	y in yes
th	t in top	er	air in air
sp	shp	qu	kv

## Future tense - After school / school trip

You need four parts to form the future tense in German:

- 1: the subject - ich (I)
- 2: a form of werden - **werde** (will)
- 3: the rest of the information (e.g. football, a book, my friends, a pizza)
- 4: the infinitive (the verb ending in 'en' which is at the end of the sentence.)

<b>Ich werde</b>	I will
<b>Du wirst</b>	You (sing) will
<b>Er /sie / es wird</b>	He / she / it will
<b>Wir werden</b>	We will
<b>Ihr werdet</b>	You (pl) will
<b>Sie werden</b>	They will

<b>in die Stadt gehen.</b>	go to town.
<b>in den Park gehen.</b>	go to the park.
<b>in die Schule gehen.</b>	go to school.
<b>ins Kino gehen.</b>	go to the cinema.
<b>zum Wasserpark gehen.</b>	go to the water park.
<b>nach Deutschland fahren.</b>	go to Germany.
<b>einkaufen gehen.</b>	go shopping.
<b>Fußball spielen.</b>	play football.
<b>einen Film sehen.</b>	see a film.
<b>Hausaufgaben machen.</b>	do homework.
<b>ein Buch lesen.</b>	read a book.
<b>mit Freunden online chatten.</b>	chat with friends online.
<b>chillen.</b>	chill.
<b>draußen spielen.</b>	play outside.
<b>fernsehen.</b>	watch TV.
<b>ein Museum besuchen.</b>	visit a museum.
<b>Deutsch lernen.</b>	learn German.
<b>Freunde treffen.</b>	meet friends
<b>eine Radtour machen.</b>	do a bike tour.



### Intensifiers

<b>sehr</b>	very
<b>wirklich</b>	really
<b>total</b>	totally
<b>ziemlich</b>	quite
<b>ein bisschen</b>	a bit
<b>gar nicht</b>	not at all

### Connectives

<b>und</b>	and
<b>aber</b>	but
<b>denn</b>	because
<b>auch</b>	also
<b>weil →</b>	because
<b>obwohl →</b>	although

## Future tense - What you will wear on the trip



<b>Ich werde</b>	I will
<b>Du wirst</b>	You (sing) will
<b>Er /sie / es wird</b>	He / she / it will
<b>Wir werden</b>	We will
<b>Ihr werdet</b>	You (pl) will
<b>Sie werden</b>	They will

einen (a) keinen (no)	blauen (blue) braunen (brown) gelben (yellow) grauen (grey) grünen (green) roten (red) schwarzen (black) weißen (white) rosa (pink)	Rock (skirt) Pulli (jumper) Kapuzenpulli (hoodie) Anzug (suit)
eine (a) keine (no)	blaue (blue) braune (brown) gelbe (yellow) graue (grey) grüne (green) rote (red) schwarze (black) weiße (white) rosa (pink)	Jacke (jacket/blazer) Hose ((a pair of) trousers) Schuluniform (school uniform)
ein (a) kein (no)	blaues (blue) braunes (brown) gelbes (yellow) graues (grey) grünes (green) rotes (red) schwarzes (black) weißes (white) rosa (pink)	Kleid (dress) Hemd (shirt) T-Shirt (T-Shirt)
	blaue (blue) braune (brown) gelbe (yellow) graue (grey) grüne (green) rote (red) schwarze (black) weiße (white) rosa (pink)	Schuhe (shoes) Socken (socks) Sportschuhe (trainers)

**tragen**  
wear



# Year 8 History Topic 2 - What was the impact of the Industrial Revolution on the world?

## Core Knowledge

### 1. What was the British Empire?

- Began in the 1500's
- Called 'the Empire on which the sun never sets'
- It was at its largest in 1920 (peak)
- The British Empire began with the colonisation of the eastern coast of America
- By the 1700's, improvements in ship building meant that the British could travel further
- India became the most important part of the British Empire
- India was important due to its large amount of resources and trading potential
- Many have argued about how to remember the British Empire, and how to interpret its past

### 2. What was precolonial West Africa like?

- Precolonial Western Africa was made up of different kingdoms such as: Mali, Benin and Songhai
- Medieval Africa was a mixture of different religions
- They traded across Africa and the Middle East
- Mansa Musa was so rich, that the amount of gold he brought to Egypt crashed the local economy

### 3. What was the Transatlantic Slave trade?

- Slavery first began in 6800BC, and still exists to this day
- The Transatlantic Slave Trade began in the 1500s
- Enslaved people were kidnapped from Western Africa and taken to the Americas as forced labour, to do things like pick cotton on plantations
- The Middle Passage refers to the journey between Africa and America, where enslaved people were chained up, and left in unhygienic conditions
- Once in the Americas, the enslaved people would be sold at auctions, often split up from families/friends

#### Provenance of the source

Nature = the type of source

Origin = who made it/when was it made?

Purpose = why was it made?

Message = what was the author/creator trying to portray in the source?

### 4. Why was the Transatlantic Slave Trade abolished?

- There were lots of revolts and acts of resistance from enslaved Africans. For example, retaining their language, songs and dances
- There were also revolts such as the Haitian Revolution 1791-1804
- There was a movement in parliament, led by Thomas Clarkson and William Wilberforce, and it led to people beginning to turn against the Transatlantic Slave Trade
- In 1807, the Transatlantic Slave Trade was abolished
- In 1833, Britain formally abolished slavery

### 5. What was life like in India before the British?

- India was called the 'jewel in the crown' of the British Empire
- British set up trading posts there in the 1600's
- Before this, India was part of the Mughal Empire
- The main religions in India were: Hinduism, Sikhism and Buddhism
- The Taj Mahal, constructed on the orders of Shah Jahan (a Mughal Emperor), was completed in 1653 to house the tomb of his wife
- India had lots of good natural resources such as iron ore, copper and gold
- When Europeans arrived in India, India was divided into lots of kingdoms which were ruled by different Hindu princes

### 6. How did British rule impact India?

- By 1850  $\frac{1}{4}$  of all trade exports were sent to India
- A viceroy was in charge of India and ruled it on Britain's behalf (after 1858 as before this the East India Company had ruled Britain)
- Crops were grown in India, such as tea
- English became the official language use in the Indian government
- 1.3 million Indian soldiers fought for Britain in WW1

## Essential Vocabulary

Empire- a group of countries or states that are controlled by one leader or government

Conquer- to take control of a city or country by force

Precolonial- Before colonial rule

Colonial –to do with being part of an empire

Imperial- connected with being part of an Empire

Trade – act of buying and selling goods between people/countries

Transatlantic– Crossing the Atlantic Ocean

Enslaved –to make someone the property of another person who they are forced to work for and obey

Profit – the money you make in business, or by selling things

Middle Passage – journey of enslaved West African people from Africa to America

Abolition –the ending of a law, system or an institution

Resistance –dislike or opposition to a plan, i.e. refusing to obey

Plantations –a large area of land in a hot country to grow crops like cotton, tea, rubber etc

## Year 8 Topic 3

### Why did relations between European powers break down in 1914?



#### German Aggression

- Germany had been unfired through war. This worried other powerful European nations (like Britain, France and Russia) about how powerful Germany could become.
- Wilhelm II's "Weltpolitik" and desire for a "place in the sun" (an overseas colonial empire) worried the other major powers.
- Germany competed with Britain to have the biggest navy at the turn of the 20<sup>th</sup> century. The *Dreadnought*, a revolutionary new ship which was launched by the British in 1906 and outclassing any other in Europe. Germany had built 17 of its own by 1914.
- Germany offered the Austro-Hungarian Empire a "blank cheque" of support, if Austro-Hungary was attacked Germany would help them.
- The Kaiser and his ministers were keen on the idea of starting a war to help stop the growing movements that were demanding more democracy and policies to help workers

What do the historians think?

"The German government had an expansionist foreign policy, ... and had started a war of aggression in 1914. The Kaiser had started a war council in 1912 and declared he wanted to start a war in summer 1914. The offer of unconditional support to Austria-Hungary led to war. – Fritz Fisher (historian)

#### Alliance System

- In the Treaty of London (1867) Britain promised to intervene if Belgium's neutrality during a European conflict was threatened. Italy and France had also secretly signed a pact of non-aggression and Russia had agreed to protect Serbia.
- In 1879 Germany and Austria agreed an alliance to help one another if either was attacked by Russia. They also promised to remain neutral if any other power attacked them. Italy joined in the alliance in 1882 and Romania in 1883. Italy wanted to stop aggression from France in North Africa. Italy and Romania, did join Germany and Austria in World War I, however, as they claimed they were not bound to do so by their treaties.
- Worried about the potential power of the new German Empire; Britain, France and Russia agreed a series of "ententes", like the "Entente Cordiale" signed between Britain and France in 1904. These ended hostilities between the three countries.
- Two powerful blocs were created by 1914 that made a huge war much more likely.

- 1815 – Napoleon was defeated at Waterloo: Europe entered a period of peace.
- 1864 – Prussia defeats Denmark in the Second Schleswig War (Wars of German Unification)
- 1866 – Prussia defeats Austria in the Seven Weeks' War: established principle of *Kleindeutschland* (Wars of German Unification)
- 1870-1 – Franco-Prussian War: Prussian victory, Declaration of the German Empire in 1871 (Wars of German Unification)
- 1882 – Triple Alliance Signed between Germany, Austria and Italy
- 1888 – Wilhelm II becomes German Emperor
- 1894 – France and Russia make an alliance
- 1904 – Britain and France sign the *Entente Cordiale*
- 1907 – Britain and Russia sign an Entente
- June 1914 – Archduke Franz Ferdinand is assassinated in Sarajevo
- July 1914 – Austria declares war on Serbia
- August 1914 – Germany declares war on Russia, France and Belgium
- August 1914 – Britain declares war on Germany

#### Timeline of the run up to WWI

##### The Assassination of Archduke Franz Ferdinand

Gavrilo Princip was a Bosnian Serb. Bosnia was part of the Austrian Empire. Many Serbians who lived in Bosnia were unhappy being part of the Empire and wanted to join Serbia which had won its independence from the Ottoman Empire between 1804 and 1813. Gavrilo Princip and the Black Hand Gang were given weapons by Serbia to assassinate the heir to the Austrian Empire Franz Ferdinand. Their initial attempts failed but because Princip left to go and get a sandwich and Franz Ferdinand's driver took a wrong turn, Princip was able to shoot the Archduke and his wife.

"None of the great powers wanted a war but all of the great powers wanted to be the most powerful. The arms race was supposed to act as a deterrent, making war too risky, but when the crisis began in the summer of 1914, all of the powers had to mobilize their armies faster than potential opponent. It made the leaders of 1914 prisoners of their alliances" A. J. P. Taylor (historian)

#### Key Term Box

**Nationalism:** A deep love for your country. Nationalists hold their country in high regard. They place the interest of the nation above those of other nations and even above other divisions within nations like class (rich and poor).

**Unification:** the process of being united or made into a whole

**Weltpolitik:** Means 'World Policy'. It refers to the Kaiser's **aggressive** aims for Germany. The aim was to transform Germany into a global power. The Kaiser said he wanted a 'place in the sun' for Germany.

**Imperialism:** a policy of extending a country's power and influence through colonisation, use of military force, or other means.

**Alliance:** a union or association formed for mutual benefit, especially between countries or organizations

**Assassination:** a murder (usually prominent person) by sudden or secret attack often for political reasons

**Significance:** when something is worthy of attention, when it is important

**Colonies:** A country under the political control of another country

**Militarism:** the belief that a country should have a great military in order to be powerful

**Triple Alliance** = Germany, Italy and Austria-Hungary

**Triple Entente** = Britain, France and Russia

# Year 8 Topic 4 - What were the key events of WW1?

## Why did men sign up for war?

**Patriotism-** Many wanted to protect Britain and the Empire.

**Pals Battalions-** Some men signed up with their friends or workplaces

**Adventure-** Many had never been further than their villages they were born in

**Guilt-** Many were guilted into going to war. Women handed out white feathers to men who had not signed up.

**Conscription-** This was where men were made to sign up for war from 2<sup>nd</sup> March 1916,

## What was Trench Warfare like?

- There were four lines of trenches
- Trenches were dug all across the front lines so you couldn't go around them
- There were many regiments in Trenches from different parts of the British Empire, including from India and the Caribbean. This meant men from different religions, such as Islam and Sikhism also fought for the British.
- The trenches were unsanitary; rats were a problem as was Trench Foot
- Many soldiers suffered from something called 'Shell Shock'
- Weapons were used on the front line such as: flamethrowers, tanks, machine guns, rifles and bombs.
- Tanks were a turning point due to their scale and size- as they were intimidating and also tore up barbed wire

28<sup>th</sup> June 1914-Franz Ferdinand is assassinated

4<sup>th</sup> August 1914- Britain joins WW1

6<sup>th</sup> September 1914- First Battle of Marne

22<sup>nd</sup> April 1915- second battle of Ypres

7<sup>th</sup> May 1915- The Lusitania is attacked by German U-boats

21<sup>st</sup> February 1916- Battle of Verdun

31<sup>st</sup> May 1916- The British and German fleet meet off the coast of Jutland

1<sup>st</sup> July 1916- First Battle of the Somme begins

15<sup>th</sup> March 1917- Tsar Nicholas II abdicates the throne of Russia after riots in St Petersburg

6<sup>th</sup> April 1917- The USA declares war on Germany

11<sup>th</sup> November 1918- The Armistice is declared

11<sup>th</sup> November 1920- The Cenotaph and the Tomb of the Unknown soldier are unveiled in London for Remembrance

## Key Term Box

**Patriotism:** being proud and devoted to your country

**Recruitment:** The action of men signing up to the armed forces.

**Conscription:** Where you are made to join the armed forces. This is compulsory.

**Pals Battalions:** A group of men who were friends or colleagues, who went to war together.

**Trench Warfare:** A type of combat where opposing troops sight from trenches facing each other.

**Remembrance:** The action of memory and remembering something.

**Propaganda:** Information used to promote a political cause or a particular point of view

**Artillery:** large guns used in warfare on land

**Ypres:** A town in Belgium. It was destroyed in WW1 then rebuilt in remembrance of the war.

**Shell Shock:** psychological disorder caused by a lot of exposure to active warfare.

## Timeline of World War I



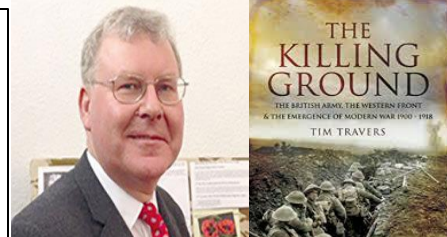
### Remembrance of WWI

There were many ways in which the First World War has been remembered. These are such as: Statues, the tomb of the Unknown Warrior, Remembrance Sunday and

the last Post in Ypres. As part of our Battlefields trip, you will all have the opportunity to see some of the most famous sites of remembrance such as the Last Post, Langemark, Tyne Cot and the town of Ypres itself!



**Professor Gary Sheffield-** Field Marsal Haig deserves to be treated as more than a pantomime village. It makes little sense to compare him to any other previous generals because war changed so much during WW1. He was a war manager, as much as anything else. He supported his wife in setting up a poppy factory in Edinburgh in Scotland. He also helped funds for War Veterans after WW1.



What do the historians think about Douglas Haig?

**Professor Tim Travers-** Haig's previous battle experience in the wars of Sudan and South Africa did not prepare him well for the nature of war on the Western Front. His personality intimidated other men. As a cavalryman, Haig did not fully appreciate that technology had become central to warfare. He thought warfare was fixed and had a strategy which he did not change for each battle.

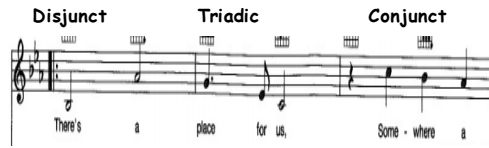
# Music Year 8: Unit 3 Melody & Pitch (Musical Theatre)

## Key Vocabulary

### Core Knowledge – Melody & Rhythm

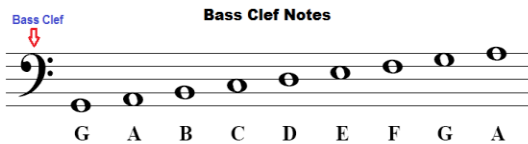
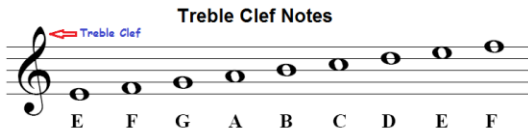
#### Melody

Melody is an important factor in musicals. The melody helps to set the scene and the narrative of the musical. Many of the key features of musicals can be heard within the melody. You will be expected to identify aspects of melody in musical theatre through listening and reading scores.



#### Pitch

Throughout this unit, we will revisit pitch, understanding the different voice types (soprano, alto, tenor, bass) and their usual pitch ranges. We will also revisit our score-reading skills. Focussing on identifying notes on the treble and bass clef.



#### Link: Apply your knowledge:

- Remind yourselves of the notes on the lines and the notes in the spaces on the treble line and how we remember them.
- Take a look at the bass clef line, are there any differences?

### Context

#### Musical Theatre

Musicals formed out of opera in the late 19<sup>th</sup> Century using a collection of acting, music and dance. They were meant to be a less-serious version of opera with a focus on melodies that are simple and easy to sing, meaning audiences could sing along. As it became more popular during the 1900s, musical theatre productions were performed mainly on Broadway, New York and in London's West End. A live orchestra normally accompanies the singers and also provides incidental and background music to the performance. Some more modern musicals include instruments such as guitars or keyboards. The story in musical theatre is normally reflected in the lyrics, with word painting of ten used to reflect characters' moods or feelings.

#### Link: Show your understanding

- Research a famous musical and write a biography about the plot.
- Listen to some famous pieces from musicals, see if you recognise them.



### Core Knowledge – Musical Theatre

Most of the core knowledge of musical theatre centres around the melody. Whether it is identifying the voice type of a character (soprano, alto, tenor, bass), how the melody is moving (conjunct, disjunct, triadic) or how the words have been set to the music (syllabic, melisma). You are expected to be able to identify all these key aspects of melody within a musical setting.

Throughout this unit, we will identify these key features through a range of musical theatre songs.

### Performance Skills – Musical Theatre

Within this unit, you will develop your vocal and instrumental skills. All of the aspects of the core knowledge that you will learn will be expected to be demonstrated through performance. You will perform various pieces from different voice types with different melodic movement. Transferring the knowledge into a performance skill.

#### Link: Apply the knowledge, master the skill.

- Aim to perform and be able to identify each key feature of musical theatre listed above (SATB, conjunct, disjunct, triadic, syllabic, melisma).
- Listen to your favourite piece of music and try to identify voice type and melodic features listed above.



Melody	The main tune or idea in a piece of music.
Pitch	How high or low the notes are.
Conjunct	The melody moves by step. The notes are close together in pitch.
Disjunct	The melody moves in leaps. The notes are far away in pitch.
Triadic	The melody moves in threes. The notes form a triad.
Motifs	A phrase that is repeated and developed in music.
Syllabic	The melody is based on syllables.
Melisma	A group of notes sung to one syllable of text.
Soprano	A singing voice with the highest range for (usually) a woman.
Alto	A singing voice with a lower range than a soprano for (usually) a woman.
Tenor	A singing voice with the highest range for (usually) a man.
Bass	A singing voice with the lowest range for (usually) a man.

Link: Show your understanding of key vocabulary

- Listen to soprano, alto, tenor and bass voices to understand the differences between the four.

# Music Year 8: Unit 4 Melody, Form & Structure (Popular Music)

## Key Vocabulary

### Core Knowledge – Melody & Rhythm

#### Melody

Melody is very important within Popular music. You will consolidate your understanding of melody from previous units and also add in new melodic key terms to your understanding (riff).

#### Form

Form is the overall arrangement of a musical piece. Throughout this topic we will look at three forms in Popular Music: Verse-Chorus form, 32-bar form and Strophic form and listen to various examples of each form.

#### Verse-Chorus Form

Verse	Chorus	Verse	Chorus
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#### 32-Bar Form

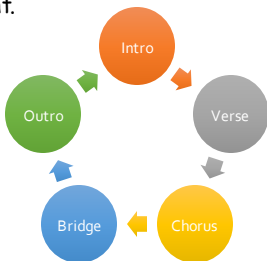
A (verse)	A (verse)	B (chorus)	A (verse)
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#### Strophic Form

A (verse)	A (verse)	A (verse)	A (verse)
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#### Structure

We will also look into the different sections that you can have in a piece of popular music and how they are significant.



### Context

#### Popular Music

Popular music (or "pop music") references the most popular music that people enjoy listening to. Pop music's style changes depending on the most influential music from the era it is in. Pop music originated from the Rock and Roll movement of the early 1950s. In the 1960s, it was established by bands such as The Beatles and in the 70s and 80s it took influence from soul, disco and new wave. During the 1990s, the most popular music was rock and grunge, with bands such as Nirvana becoming household names. By the 21<sup>st</sup> Century, R&B artists were seen as the popular music. Examples being Rihanna, Beyonce and Usher. Most recently, we have seen a blending of pop and hip hop. Artists such as Stormzy and Nicki Minaj have been successful at doing this.



#### Link: Show your understanding

- Research one of the artists listed above. Write a short biography on their life.

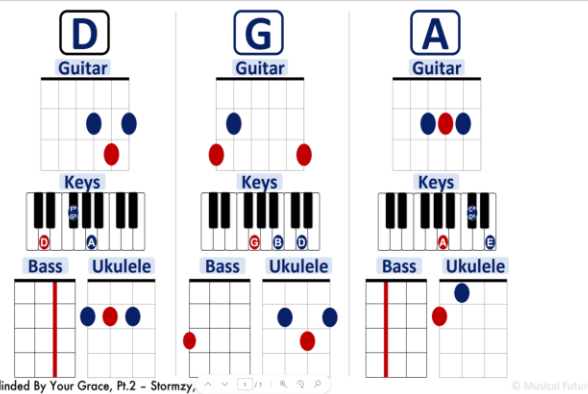
### Core Knowledge – Popular Music

Throughout this unit, you will be required to listen to various pieces in popular music and identifying the key features that they all have in common. You will have to recall some other key melodic features that you have looked at in previous units also (e.g. melisma and syllabic from musicals).

You will listen to different genres of Popular music, identifying key musical features that are significant to that era. As popular music is a vast spectrum of music, you will listen to many different pieces.

### Performance Skills – Popular Music

In this unit, your performance skills will be assessed through ensemble-based work. You will be expected to contribute to an ensemble or 'band' performing different songs in Popular Music. You will all have roles such as melody, bassline or chords and you will be able to demonstrate these roles on instruments such as keyboards, ukuleles, guitars or using your own voice.



Chord Sheet: Blinded By Your Grace, Pt.2 – Stormzy. © Musical Futures

<b>Melody</b>	The main tune or idea in a piece of music.
<b>Form</b>	The overall arrangement of a piece.
<b>Structure</b>	How the music is built.
<b>Intro</b>	An introduction to a song.
<b>Verse</b>	A section in music where the melody is the same but the lyrics change.
<b>Chorus</b>	A section in music where the melody and lyrics stay the same. Usually sung after the verse.
<b>Bridge</b>	A contrasting section that connects two other sections.
<b>Outro</b>	The final section of a piece of pop music.
<b>Verse-chorus form</b>	A form that is made up of verses and choruses
<b>32 bar form</b>	A form that is in 32 bar sequences, usually labelled AABA.
<b>Strophic form</b>	A song that has only verses.
<b>Riff</b>	A short repeated pattern in popular music.
<b>Chords</b>	Three or more notes played at the same time, usually on a guitar or piano.

#### Link: Apply your knowledge:

- Listen to some famous riffs in popular music, see if you recognise any of them
- Find a piece of popular music in verse-chorus, 32-bar and strophic form

#### Link: Apply the knowledge, master the skill.

- Listen to a piece of Popular Music. Identify its key features and any structural or melodic elements in your key vocabulary list.
- Compare this unit with the previous one. Are there any similarities in the pieces of music you are listening to?

**Link: Show your understanding of key vocabulary**  
Familiarise yourself with the different sections of a song (verse, chorus etc.) and understand their functions.

# - Year 8: Rugby League

## Key Vocabulary

### Rugby league and Oldham

Rugby is an invasion game that brings together a combination of skill, athleticism and tactics. The game is contested by two teams of players and involves one team invading another team's territory with the aim of scoring a try.

Oldham is one of the countries biggest producers of rugby league talent with players such as Barrie Mcdermott, Kevin Sinfield, Jordan Turner and Paul Sculthorpe to name a few. Rugby brought a sense of community and belonging to Oldham through the local amateur teams (Waterhead, Saddleworth and St Annes) and the Professional team (Oldham Roughyeds) who were once one of the best teams in the country.

### Safety

Rugby league can often be a dangerous sport. Many injuries occur through the high levels of impact and collisions. Prevention is always better than a cure.

Task 1- Research different injuries that occur in rugby league

Task 2- Think about how these injuries occur

Task 3- List the best strategies and rules in the sport to help avoid injuries.

### Positions

Rugby league teams have 13 players on the pitch at a time. These players range from Backs and forwards. They come in all shapes and sizes.

Typically, forwards are big and strong who must try and get as much yards as possible with the ball and tackle opposition players as hard as possible when defending. Examples of forwards are props and Second rows.

Backs are often fast and smart. Their job is often to organise attack, score tries and/or assist tries. Examples of backs are wingers and half-backs.

### Scoring

**Try's**- A try is scored when a player places the ball down on or past the oppositions try line. This is worth 4 points.

**Conversion**- After a try is scored the attacking team has an opportunity to kick at goal. If they get the ball through the sticks, they get an extra 2 points.

**Drop goal**- During open play an attacker can drop the ball to the floor and kick it when it bounces. If the ball goes through the oppositions sticks, they get 1 point.

### Playing the game

In rugby league each team have 13 players on the pitch with 4 substitutes on the bench.

A rugby game usually has two 40-minute halves. There are no time-outs and play rarely stops. The game starts with a kick-off where one team kicks the ball to the other team. The two teams then move up and down the field as they gain and lose control of the ball. When in possession of the ball a team has 6 chances to score, meaning they only have 6 tackles before having to handover possession.

The players may catch the ball, throw it, or run with it. Teammates may pass the ball to each other either sideways or backwards. They may not pass the ball forward; this will result in a loss of possession. Players may also kick the ball, this is usually done at the end of attacking sets in an attempt to get more yards (closer to opponents try line).

The two ways of scoring points in rugby are called tries and goals. A player scores a try by touching the ball to the ground behind the opponent's try line. A player scores a goal by kicking the ball over the crossbar between the opponent's goalposts. After a try, the scoring team can kick a type of goal called a conversion goal. During play, a player scores a dropped goal by dropping the ball and kicking it after it bounces. A team can score a penalty goal after the other team breaks the rules. Rugby Union and Rugby League award different numbers of points for tries and goals. In both versions, however, a try is worth more points than a goal.

**Link: Values.** Rugby league prides itself on its values such as teamwork, respect, enjoyment, discipline and sportsmanship.

Think about the values in rugby league and how these could help you in life?

Extension- How do these values link to Brian Clarke and British values?

Knock on

Forward Pass

Offside

Play the ball

High tackle

Defensive line

Strength

Speed

Power

Communication

Stamina

Conversion

**Task:** Use the key vocabulary words to make flash cards. Write a key word on one side of the flash card and the definition (the meaning of the word on the other.

Test your knowledge of each word.

Get a Parent or Carer to quiz you.

### Overview

In year 8 students will develop the basic balances, shapes, rolls and jumps into an individual gymnastics floor routine. Students will also build confidence, problem solving and teamwork through group balances and finally learn basic flight and vaulting.

### Floor routine

The floor is where many gymnasts get to combine their skill, athleticism, and their personality.

Floor routines are a mix of balances, rolls, jumps, types of travel and dance elements. Floor requires both strength and power to perform skills, but also grace and flexibility to perform beautiful dance moves.

### Link: Apply your knowledge:

Watch Jessica Gadirova perform a stunning floor routine in the British Gymnastics Championships. This is a routine performed at the highest level.

What did you enjoy about the performance?

Was anything inspiring about this performance?

Make a fact file about Jessica Gadirova.

<https://youtu.be/PiVvk2qQ3YHI?si=APQRb61MmTWzymJq>

## What is vaulting in gymnastics?

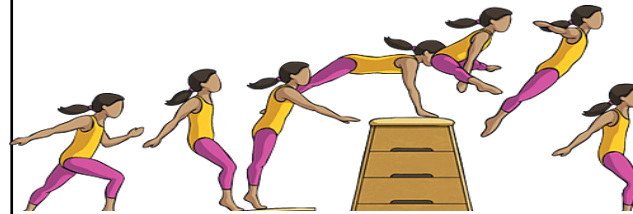
Vaulting in gymnastics is the action of performing a vault. A vault is an action a gymnast performs by running down a runway that is usually made of soft material. They then jump onto a springboard and use the momentum to bounce up towards the vault - hands first.

The idea is to use your hands to control how you get over the vault.

### Equipment

A vault is the piece of gymnastic equipment that the performer must get over. They are typically 120cm long and 90cm wide.

Watch the you tube video to get an idea of what types of activities you will be learning. [https://youtu.be/7rc\\_GejkJro](https://youtu.be/7rc_GejkJro)



### Overcoming nervousness

If you feel nervous about taking part in gymnastics, don't worry you won't be on your own. Taking that first step can feel really challenging. But we all get nervous from time to time. It's completely normal.

In fact, 42% of girls/women said they worry about being judged while exercising, so you're not alone if you have concerns. But don't let them stop you from getting active!

At Brian Clarke we are about supporting each other in our community, we are a team so speak to your teacher if you have any concerns.

### Top Tips

- Don't worry about getting it right – just enjoy yourself.
- Take your time – move at your own pace.
- It's ok to have a few 'wobbles' – we all have them.

### This Girl Can:

Research "This girl can" campaign.

What is their aim?  
Why is a campaign like this positive for girls and women?

**Flight** - Where a gymnast leaves the floor and lands again

**Jump** - A gymnastic element in a floor exercise or beam routine that takes off from both legs

**Vault** - Vaulting movement in which the gymnast rebounds off the springboard and travels over the vaulting box in a straddle position

**Vault Box** - Piece of apparatus used to vault onto or over. Often comprising of wooden sections, allowing for variation of height and covered with a padded top.

**Fluency** - is the ability to do movement smoothly.

**Aesthetics** - concerned with the nature and appreciation of beauty.

**Asymmetrical** -having parts on either side or half that do not match or are not the same size or shape

**Symmetrical** - having two parts that match exactly, either when one half is like an image of the other half in a mirror, or when one part can take the place of another if it is turned 90° or 180°

**Timing** - the choice, judgement, or control of when something should be done

**Courage** - the ability to do something that frightens one; bravery.

## Year 8 Topic 2: Did God create the world, does it matter?

Creationism is the belief that the universe and living organisms originate from acts of divine creation. This is a central belief within Christianity. Christians use Genesis 1 and 2 as a means of understanding the role that God has within creation.

Not all Christians are the same in their understanding of how to interpret Genesis 1 and 2. Some Christians take a literalist stance and others understand it through a non-literalist lens.

Bible scholar John Walton states, *'the Bible was written for us all, but it was not written to us'*. This means that it is important that we understand the key context around Genesis 1 and 2.

The theory of natural selection is important as it claims that everything within the universe has developed over time to adapt to suit the surroundings it is in. For literalists Christians this can be seen as problematic as God is said to have created everything in an indivisible way.

Non-literalist view Genesis as revealing complex spiritual truths about reality. For example, they would argue that God is the creative intelligence behind all that exists. They may argue that reading Genesis 1 is like reading a poem or a letter from God with deeper meaning.

Some Christians believe that both evolution and Genesis are correct. They argue that evolution explains how life was created and Genesis explain why. The name given to this type of belief is theistic evolution. After a century of debate, the Catholic Church accepted this view.

In a letter to a friend, Darwin wrote that he thought it was 'absurd' to think that someone cannot believe in both God and evolution. He argued that his theory did not challenge or take away the existence of God. However, others argue that there is no need for a God to be guiding the process or evolution for it to work. The theory can explain how life developed and why living things are so complex and well-suited to their environment, without the need for a God.

The Hebrew word used in Genesis is 'Yom'. This word when translated means 'period of time' and not a 24 hour day like we experience. This means some Christians do not accept that the world was created in 6 days.

God has already created the light when he said, 'Let there be light'. Light cannot be created before the sun since the sun is the light.

Scientists have since shown that life has evolved. 98% of our DNA is the same as chimpanzees and 60% is the same as chickens and bananas.

- o St Thomas Aquinas (1224-1274CE) was a philosopher and a theologian and was certain that God was guiding the 'Journey of life'. He said the evidence was so clear, that you only had to think about the evidence to prove God's existence.
- o **The First Cause** argument was central to his beliefs, and the fact the universe exists was the key evidence that had to be examined.
- o He said that the universe couldn't have simply come from nothing, something cannot come from nothing, it just makes no sense.
- o From this, he stated that from your own **reason** you must conclude that the universe was **caused** to exist by something that existed before it.

- o The design argument also looks at the world around us to find evidence that God must exist.
- o Philosophers who make this argument believe that because the universe is ordered, complex, and intricate it cannot have occurred by chance and must have a designer.



When describing the big bang, the Qur'an does not discount the idea. In the Qur'an verse 21, Allah describes the way in which the heaven and earth were joined together and Allah himself orders them to come together and begins the process of creation. Allah allows the matter that is to become the planets and stars to cool down and come together in a way that will allow for creation to start.

The Hindu creation story offers a lot that is in line with Christianity and Islam. This idea that one supreme being was behind creation. Shiva plays a vital role within Hinduism. Shiva, the God of destruction, is there to ensure that everything is maintained and when things need to be destroyed to make way for the new Shiva takes lead on this.

Hindus believe that the mother earth is sacred and therefore they must look after and protect her. Every living thing according to some Hindus is sacred and part of Bhumi Devi, thus some Hindus agree with Peter Singer's view on speciesism.



David Hulme was one of the first people to challenge the first cause argument. He argued that the first cause argument is based on a logical fallacy- this is a statement that is logically flawed- that makes no sense!

### Key Term Box

Creationism- The belief that the universe and living organisms originate from acts of divine creation.

Interpretation- An explanation or opinion of what something means

Literalist- A person who believes in the strict literal interpretation of scripture.

Non-literalist- A person who believes in the teachings and values of the stories within scripture but does not take them to be true

Stewardship- The job of supervising or taking care of something

Dominion- To have power and control over something

Evolution by natural selection- The theory that all life forms evolved (developed) from a common ancestor through gradual changes over millions of years.

Theistic evolution- The belief that God started the process of evolution and uses it to bring about life.

Theologian- A person who dedicated their life to the study of God and religion.

Infinite regress- An endless sequence of causes with no beginning

First cause argument- The argument that everything in the universe needs a cause and so the universe also needs a cause- that cause must be God.

The Big Bang Theory- A theory within astronomy which states that the universe originated millions of years ago from a point of single matter

Design Argument- The argument that the world looks designed and so therefore has a designer. This designer must be God.

Qur'an- The name of the Muslim holy book which is argued to be the direct word of God.

Bhumi Devi- In Hinduism known as Divine mother earth. She is the Goddess of earth.

Speciesism- A term popularised by Peter Singer to describe prejudice or discrimination towards animals.



# Science Year 8: 8.4 Sound

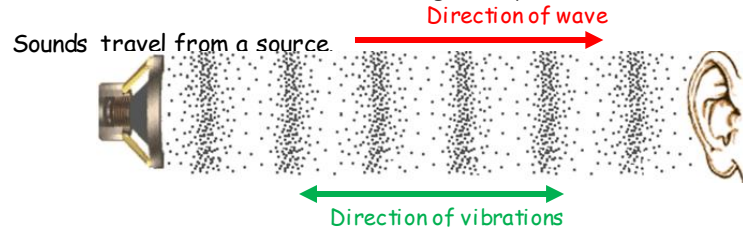
## Core Knowledge

## Essential Vocabulary

### 1. Sound as a wave

Sounds are caused by **vibrations** that travel through the air as a **longitudinal wave**.

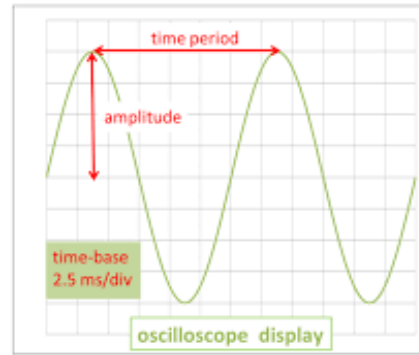
Sounds need a medium to travel through, they **cannot** travel through a **vacuum**.



### 2. Describing Sound Waves

Sounds travel as a wave and we can display a sound wave using a machine called an oscilloscope.

The oscilloscope converts the sound into an electrical signal that can be seen on a screen.



**Vibration** - A back and forth motion that repeats.

**Longitudinal Wave** - Where the direction of vibration is the same as that of the wave.

**Volume** - How loud or quiet a sound is, in decibels (dB).

**Pitch** - How low or high a sound is. A low (high) pitch sound has a low (high) frequency.

**Amplitude** - The maximum amount of vibration, measured from the middle position of the wave, in metres.

**Wavelength** - Distance between two corresponding points on a wave, in metres.

**Frequency** - The number of waves produced in one second, in hertz.

**Vacuum** - A space with no particles of matter in it.

**Absorption** - When energy is transferred from sound to a material.

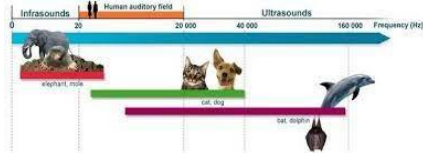
**Auditory Range** - The lowest and highest frequencies that a type of animal can hear.

**Echo** - Reflection of sound waves from a surface back to the listener.

### 3. Hearing Sound

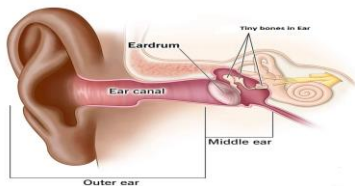
Humans and other animals detect sounds. Different animals have different **auditory ranges**. This means that the range of frequencies they can hear varies.

Most young **people** have an auditory range of **20Hz to 20kHz**, although this can vary.



The human ear detects sound waves travelling in the air, which causes the **ear drum** to **vibrate**. This is then transferred to **tiny bones** in the ear called the **hammer, stirrup and anvil**. This causes fluid in the **cochlea** to **vibrate**.

Finally, **tiny hairs** on the inside of the cochlea **vibrate** and this movement is **detected by nerve cells** which send information to the brain.



### 4. Sounds in Materials

Sound can travel through anything **made of particles**.

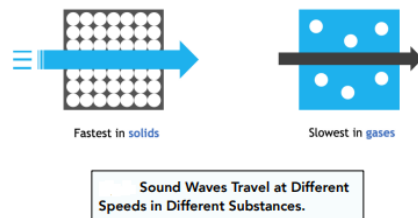
If you put your ear on the desk and tap the edge of the desk, you are **hearing the sound through a solid**.

If you are underwater in a swimming pool you are **hearing sound through a liquid**.

How quickly sound travels depends on how close together the particles are.

The **particles in gases** are **further apart** than liquids, and so **sound travels slower** in a gas than a liquid. The **particles in a solid** are **closer** still and so **sound travels fastest** in solids.

If there are **no particles**, like in the vacuum of space, **sound can't travel at all**



From the oscilloscope screen, we can measure the amplitude of the wave. We can also read the frequency of the wave.

A **common error** is that an oscilloscope shows the wavelength of a wave, however, it does not. It shows a time period - the time for one full wave to pass a point.

Sounds have a volume and a pitch.

**Volume** is measured in **decibels (dB)** and tells us how loud or quiet a sound is.

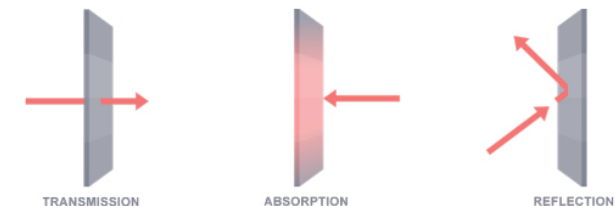
**Pitch** describes how high or low a sound is.

### 5. Reflection and Absorption of Sound

Sound waves can be **reflected, absorbed or transmitted** by different materials.

If a **sound wave** is reflected, we hear an **echo**.

Materials that absorb sounds can be used for soundproofing rooms.



## 1. Aerobic Respiration

**Respiration** is a series of **reactions** that takes place in the cells of animals and plants. Energy is released in the reaction.



'Energy' is in brackets because it is not a substance. This type of respiration, where **oxygen is used**, is known as **aerobic respiration**. Oxygen (from breathing) is carried from the lungs to all the cells of the body in the blood. The waste products (carbon dioxide and water) are taken away from the cells by the blood and breathed out from the lungs.

## 2. Anaerobic Respiration

Although **anaerobic respiration** does release some energy, it does not release as much as aerobic respiration does.

The **lactic acid** produced during anaerobic respiration builds up in muscles. This can be felt as an aching in muscles during or after exercise.



**Aerobic respiration:** Breaking down glucose with oxygen to release energy and producing carbon dioxide and water

**Anaerobic respiration (fermentation):** Releasing energy from the breakdown of glucose without oxygen, producing lactic acid (in animals) and ethanol and carbon dioxide (in plants and microorganisms).

**Lactic Acid** - A chemical produced during anaerobic respiration

**Respiration:** Process in living things which oxygen is used to release the energy from food.  $\text{Glucose} + \text{Oxygen} \rightarrow \text{Carbon Dioxide} + \text{Water} (+\text{energy})$

## 3. Anaerobic Respiration in Microbes

Anaerobic respiration happens in **microorganisms** such as **bacteria** because they need to release energy from glucose. **Yeast** (unicellular fungi), carry out a process called **fermentation**.



The **ethanol (alcohol)** is useful for **brewers**, and is useful to bakers because it helps their **bread rise**.



### Link: Show your understanding

What is the unit for energy?  
 Why are arrows used in the equations for respiration, rather than an = sign?  
 How can we tell, from the equation, that respiration is a chemical reaction?  
 Create a 15-question quiz, with answers, to test yourself on this topic.

# Science Year 8: 8.6 Photosynthesis

## Core Knowledge

## Essential Vocabulary

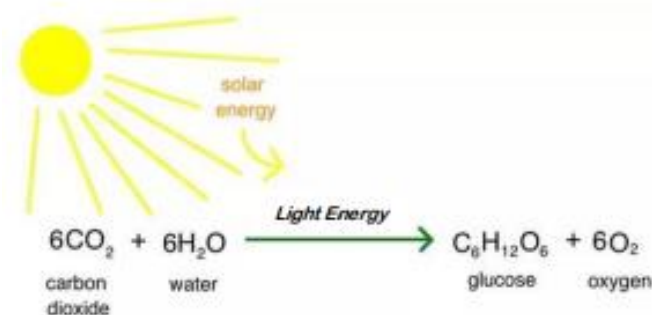
### 1. Photosynthesis

Green plants and algae do not eat food to get their energy, Instead they make their own food by a process called **photosynthesis**.

Photosynthesis takes place inside plant cells within the **chloroplasts**.

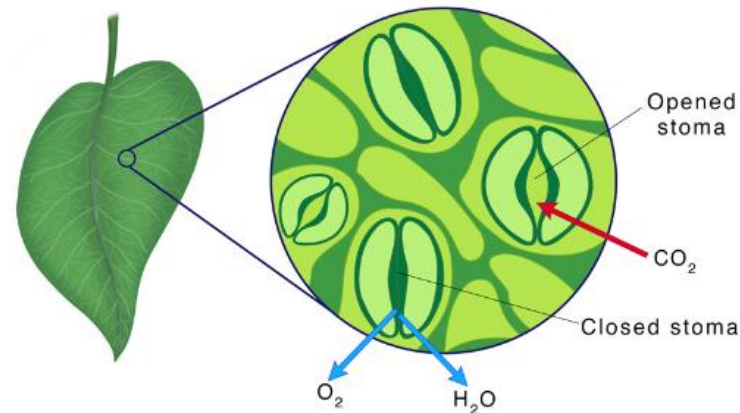
Chloroplasts contain a green pigment called **chlorophyll**. This absorbs light energy needed for photosynthesis to occur.

Plants use the raw materials; **Carbon Dioxide** and **Water**. With the presence of light energy from the sun, the raw materials are converted into **Glucose** and **Oxygen**.



### 2. Parts of a leaf

Chloroplasts containing a green pigment called **Chlorophyll** are found in the leaf cells of a plant. This absorbs light energy needed for photosynthesis to occur.



**Stomata** are special cells on the surface of leaf, which open and close to allow gases to flow in and out.

### 3. Factors affecting the rate of photosynthesis

The rate of photosynthesis (how quickly the reaction happens) is affected by:

**Carbon dioxide concentration** - The more carbon dioxide available, the faster photosynthesis happens.

**Temperature** - At higher temperatures, photosynthesis happens faster, however, there is a limit! If the temperature is too high, photosynthesis will stop.

**Light Intensity** - Without enough light, a plant cannot photosynthesise very quickly - even if there is plenty of water and carbon dioxide.

**Photosynthesis:** A process where plants and algae turn carbon dioxide and water into glucose and release oxygen.

**Chlorophyll:** Green pigment in plants and algae which absorbs light energy.

**Stomata:** Pores in the bottom of a leaf which open and close to let gases in and out.

**Respiration:** Process in living things which oxygen is used to release the energy from food.  $\text{Glucose} + \text{Oxygen} \rightarrow \text{Carbon Dioxide} + \text{Water} (+\text{energy})$

**Link: Show your understanding**

How does the equation for photosynthesis compare to the one for respiration?

How can we tell, from the equation, that photosynthesis is a chemical reaction?

Create a 15-question quiz, with answers, to test yourself on this topic.

# Science Year 8: 8.7 Cells

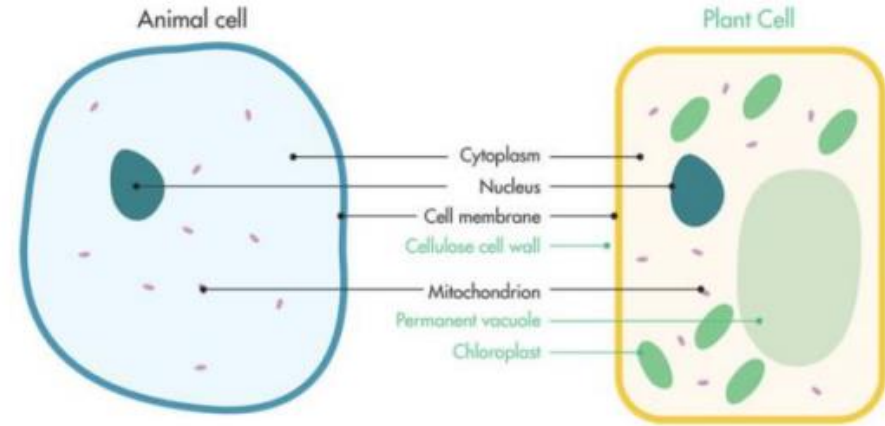
# Core Knowledge

# Essential Vocabulary

## 1. Plant and Animal Cells

All plant and animal cells have a nucleus, cytoplasm, cell membrane and mitochondria.

Plant cells also have a cell wall, vacuole and chloroplasts.

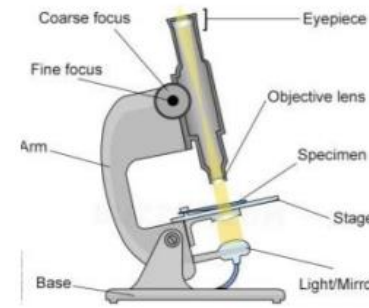


## 2. Microscopes

**Light Microscope:** A device which uses light and a series of lenses to produce a magnified image of an object.

**Magnification** = How much bigger a sample/object appears under the microscope than it is in real life.

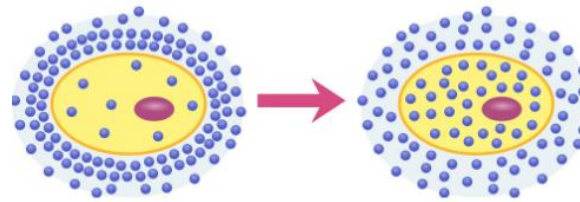
**Total magnification = Eyepiece lens x Objective lens**




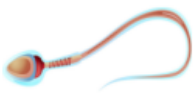
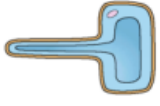

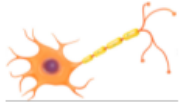

## 3. Diffusion in cells

**Diffusion:** The movement of particles from an area of high concentration to an area of low concentration.

Substances diffuse into and out of cells.



## 4. Specialised Cells

Red Blood Cell	Sperm Cell	Root Hair Cell	Palisade Cell	Nerve Cell	Egg Cell
					
Carries blood around the body. <b>Adaptations:</b> No nucleus, large surface area and biconcave shape.	Carries the male genes. <b>Adaptations:</b> Tail for swimming, mitochondria for energy, acrosome to break down the egg cell.	Take in water from the soil. <b>Adaptations:</b> Long & thin; large surface area for maximum water absorption. Thin cell walls.	Production of food for the plant. <b>Adaptations:</b> Tall and thin. Lots of chloroplasts to absorb sunlight for photosynthesis.	Carry signals around the body. <b>Adaptations:</b> Long axon. Myelin sheath.	Carries the female genes. <b>Adaptations:</b> Lots of mitochondria. Outer layer hardens once fertilised.

**Cell:** The unit of a living organism, contains parts to carry out life processes.

**Uni-cellular:** Living things made up of one cell.

**Multi-cellular:** Living things made up of many types of cell.

**Diffusion:** One way for substances to move into and out of cells.

**Structural adaptations:** Special features to help a cell carry out its functions.

**Cell membrane:** Surrounds the cell and controls movement of substances in and out.

**Nucleus:** Contains genetic material (DNA) which controls the cell's activities.


**Vacuole:** Area in a cell that contains liquid and can be used by plants to keep the cell rigid and store substances.

**Mitochondria:** Part of the cell where energy is released from food molecules

**Cell wall:** Strengthens the cell. In plant cells it is made of cellulose.

**Chloroplast:** Absorbs light energy so the plant can make food.

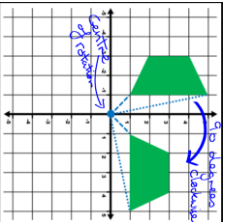

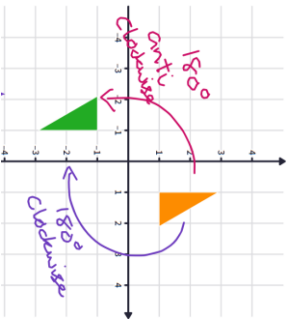
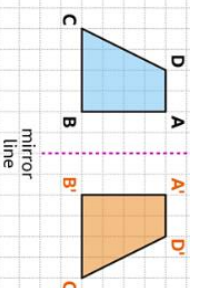
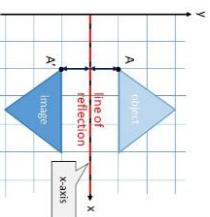
**Cytoplasm:** Jelly-like substance where most chemical processes happen

**Link: Show your understanding**   
Create a 20-question quiz, with answers, to test yourself on this topic.

# Maths – Geometry 2

## Transformations

### Essential Vocabulary

Word	Definition	Example
Vertex / Vertices	The points where two or more line segments or edges meet (like a corner).	
Transform / Transformation	To change. This usually means to change a shape. There are 4 main ways: Translation, rotation, reflection and enlargement.	
Rotate / Rotation	Rotating (turning) a shape by a certain angle of degrees	
Centre of rotation	The point in which the shape has been rotated from.	
Clockwise	The same direction as the way in which the hands of a clock move round	
Anti-clockwise	The opposite direction as the way in which the hands of a clock move round	
Quarter turn	Turning 90 degrees in either direction	
Half turn	Turning 180 degrees in either direction	
Direction of rotation	Whether a shape has rotated clockwise or anticlockwise	
Angle of rotation	A measurement of how much a shape has been rotated.	
Reflect / Reflection	When a shape is flipped along a line (the mirror line)	
Mirror line	A line used to reflect an object	
Object	The original shape	
Image	The transformed shape (through any type of transformation)	
Line of symmetry	An imaginary line that cuts an object into two parts that are reflections (mirror images) of each other.	
Vertical line	A line going in a vertical direction (up/down)	

# Maths – Geometry 2 Transformations

## Essential Vocabulary

Word	Definition	Example
Horizontal line	A line going in the horizontal direction, going from left to right.	
X axis	The <b>horizontal line</b> on a set of axes that goes through 0. It is used as a reference line so you can measure from it.	
Y axis	The <b>vertical line</b> on a set of axes that goes through 0. It is used as a reference line so you can measure from it.	
Enlarge / Enlargement	Changing the size of the original shape. It can be made bigger OR smaller by multiplying by a scale factor	
Scale factor	The number you are multiplying by to change the size of the lengths when enlarging a shape.	
Centre of enlargement	A point which tells you where to draw an enlargement from.	
Congruent shapes	When two shapes are identical to each other. They share the same properties.	
Similar shapes	Identical in shape but not the same size. One is an enlargement of the other.	
Translate / Translation	Moving (sliding) an object/shape to another position.	
Position	The comparison of where something is related to another object or its surroundings. It may be described in words or by using coordinates.	Shape A is 3 units to the right and 2 units up from the origin
Column vector	A column vector is a way of writing a translation which gives information about the movement needed. It is split into a horizontal component (the top number) and a vertical component (the bottom number).	
Describe a transformation	The way you would state how a transformation has happened. Start by stating the type of transformation (translate, rotate, reflect or enlarge) and then give specifics e.g. 90 degree clockwise, multiplied by scale factor of 2, or reflected in the y axis.	Shape A has been translated 2 places to the right and 3 down. $\begin{pmatrix} 2 \\ -3 \end{pmatrix}$

Essential Vocabulary


Word	Definition	Example
Decimal places	How many numbers/digits there are after the decimal point. Contains the tenths, hundredths and thousandths columns.	<p>What is 364 to the nearest 100?</p>
Rounding	Making a number simpler whilst keeping it close to its value.	
Significant figure	Digits in a number. They are a non-zero digit. They start at the first non-zero digit. The digits have value.	
Degree of accuracy	A measure of how close and correct a stated value is to the actual number. This may be to the nearest 10, nearest 100, nearest whole number, to one significant figure.	$37 \approx 40$ to the nearest 10 $23 \approx 20$ to the nearest 10 $2.8 \approx 3$ to the nearest 1
Estimation	Working out something roughly. Estimating the value of a calculation by approximating all the numbers in the calculation	Estimate $\frac{78+171.4}{42} \approx \frac{80+200}{40}$ $\approx \frac{280}{40}$ $\approx 7$
Integers	A whole number.	<i>examples:</i> 4, 10, 27, 312, 0, -5 <i>non – examples:</i> 2.3, 5.1, 10.47, -2.931, $\frac{1}{5}$
Approximate / Approximation	Rounding a number to a closer number usually to make calculations easier. A rough, but close number. The number is usually rounded to 1 significant figure.	$37 \approx 40$ $283 \approx 300$ $1207 \approx 1000$
Error interval	The limits of accuracy when a number has been rounded or truncated.	
Upper bound	A value that is greater than or equal to every element of a set of data.	
Lower bound	A value that is less than or equal to every element of a set of data.	
Truncate	Shortening a number to a given place value without rounding it.	$259.8$ truncated to 10 is $250$
Inequality notation	Symbols that are used to state that one value is less than, less than or equal to, greater than or greater than or equal to another value.	$<$ , $>$ , $\leq$ , $\geq$

Essential Vocabulary

Word	Definition	Example																		
Function machine	Used to apply a series of operations to an input number in order to calculate an output number	Input $\rightarrow \times 3 \rightarrow +1 \rightarrow$ output																		
Formula	A statement, usually written as an equation. Contains two or more variables ( $x, y, \text{etc}$ )	$V = L \times W \times H$ $\text{Area} = L \times W$																		
Input	A value that is put 'in' to a function.	<table border="1" data-bbox="1280 1036 1504 1293"> <thead> <tr> <th>Input</th> <th>Relationship</th> <th>Output</th> </tr> </thead> <tbody> <tr> <td>0</td> <td><math>\times 2</math></td> <td>0</td> </tr> <tr> <td>1</td> <td><math>\times 2</math></td> <td>2</td> </tr> <tr> <td>7</td> <td><math>\times 2</math></td> <td>14</td> </tr> <tr> <td>10</td> <td><math>\times 2</math></td> <td>20</td> </tr> <tr> <td>...</td> <td>...</td> <td>...</td> </tr> </tbody> </table>	Input	Relationship	Output	0	$\times 2$	0	1	$\times 2$	2	7	$\times 2$	14	10	$\times 2$	20	...	...	...
Input	Relationship	Output																		
0	$\times 2$	0																		
1	$\times 2$	2																		
7	$\times 2$	14																		
10	$\times 2$	20																		
...	...	...																		
Output	The value that comes out of the function.																			
Equal	Having the same amount or value - being equal.	$3 + 5 = 6 + 2$ $27 = 9 \times 3$																		
Not equal	Having different amounts or values - not being equal.	$7 + 3 \neq 11$ $20 \neq 5 \times 6$																		
Equation	A statement that shows two expressions are equal and contains the 'equals' sign.	$2x + 3 = 7$ $4y - 2 = 18$																		
Expression	A mathematical sentence which can include numbers, variables and operations. It does not include the equal sign ( $=$ ) or inequalities ( $< > \geq \leq \neq$ )	$7 + 8$ $x + 5$ $2y - 10$ $100 - 32x$																		
Inequality	A statement to show that one value is not equal to another value, usually stating that one is greater or less than the other and using inequality symbols.	$3 > 2$ $5 < 15$ $2x + 4 > 20$																		



Essential Vocabulary

Word	Definition	Example
Solve (an equation)	The process of working out the value of the unknown in an equation - getting $x$ on it's own.	$4x + 8 = 24$ $4x + 0 = 16$ $\cancel{4x} = \frac{16}{\cancel{4}}$ $x = 4$
Solution	The value of the unknown variable.	$x + 7 = 10$ <p>The solution is <math>x = 3</math></p>
Transform an equation	A method of solving an equation where we can change/transform it by doing the same operation to both sides of the equation.	$\square\square\square = \square\square\square\square\square$ <p>Add 1 to both sides</p> $\square\square\square\square = \square\square\square\square\square\square$ <p>take 3 from both sides</p> $\square = \square\square$
Coefficient	The number that the variable is multiplied/divided by. Usually seen in front of the variable ( $x, y, etc$ )	
Constant	A value or number that never changes. E.g. there are 7 days in a week... the 7 is the constant.	
Variable	A symbol or a value that we don't yet know. It is usually shown as the letter $x$ or $y$ . The value of these <u>can</u> change, depending on the equation that they are in.	
Form an equation	Making an equation from the information we have been given. e.g. John is 5 years older than Ali. Alisha is twice as old as John. Write and expression for Alisha's age.	<p>Alisha's age is:</p> $2(x + 5)$