



Frank Field
Education Trust

“The view from space is really very special. From the window you can look back at the earth and see the stars around you. I just hope that more people from Britain get the chance to experience it.”

- Helen Sharman

Helen Patrica Sharman OBE is a British chemist who became the first British astronaut and first woman to visit the MIR space station in 1991.



Year 7 Knowledge Organiser

Learning Programme 5

Pupil Name:

Form Group:

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Instructions to use the Knowledge Organiser

Use of the Knowledge Organiser

Every school day you should be studying at least 1 section of your Knowledge Organiser (KO) for homework.

The timetable outlines the tasks you will study during that week.

Your subject teacher will set the relevant homework task from the Knowledge Organiser booklet and inform you of when the homework is to be handed in.

Your homework is to be completed in your subject exercise book, unless the instructions are different within the task.

You need to bring your Knowledge Organiser and exercise books with you EVERYDAY to the academy.

You will also be tested in your lessons on knowledge from the organisers every week to ensure that the core knowledge is retained over time.

You should also be developing your core knowledge by developing your self-testing, revision and study skills techniques alongside the homework tasks.

You can use any of the adjacent techniques on top of the core homework tasks to enhance your revision skills.

Self-testing, revision and study skills techniques

You can use your KOs and book in a number of different ways but you should not just copy from the Knowledge Organiser into your book. Use the 'How to self-test with the Knowledge Organiser' booklet to help you.

Below are some possible tasks you could do in your workbooks, no matter which task you do you should always check and correct your work in a different coloured pen.

- Ask someone to write questions for you
- Write your own challenging questions and then leave it overnight to answer them the next day
- Create mind maps
- Create flashcards
- Put the key words into new sentences
- Look, cover, write and check
- Mnemonics
- Draw a comic strip of a timeline
- Use the 'clock' template to divide the information into smaller sections. Then test yourself on different sections
- Give yourself spelling tests
- Definition tests
- Draw diagrams of processes
- Draw images and annotate/label them with extra information
- Create fact files

How do I self quiz?

How to use...Flashcards

1. On one side of the flash card, write the word or question.
2. On the other side, write the definition for the word, or answer to the question.
3. Once you have completed your set of cards, put them in a pile. Then for each card, see if you can remember the definition or answer to the question. Tick or cross when you get it right or wrong.
4. When you get the card right, place it in the 'correct' pile. When you get it wrong, place it in the 'wrong' pile. Repeat until all cards are in the 'correct' pile.

You can also use the Leitner Method: <https://www.youtube.com/watch?v=C20EvKtdJwQ>

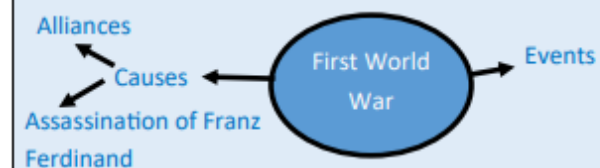
How to use... Look, Cover, Write, Check and Correct

1. Write your key words into the 'Look, Cover' column and then cover it.
2. Write out the meaning, definition or spelling in the 'Write' column.
3. Put a 'tick' or 'cross' in the 'Check' column depending on if you got the answer right.
4. If you got the answer incorrect, write the correct answer in the 'Correct' column.

Look , Cover	Write	Check	Correct
Noun	A person, place or	✓	
Algorithm	Algorithm	X	Algorithm

How to use... Mind Maps

1. Write out your topic or idea in the centre. E.g. The First World War.
2. Off of the main bubble, write out important categories to organise your ideas. E.g. causes of WWI and events in WWI
3. Then add your knowledge off of these branches. You might even be able to make connections between them.
4. Once made, then redraw as many of the connections as possible from memory. Correct any errors.



How to use... Explaining a process/ idea further

Your teacher might ask you to explain a key idea, process or event from your learning. This could be the water cycle (Geography), photosynthesis (Science) or something else. In your answer, try to use the words **because**, **but**, and **so**. These will help you to:

1. **Because:** helps to explain a reason, cause or why something works.
2. **But:** helps to explain a limitation or problem.
3. **So:** helps to explain what happens next in a sequence, process or event.

Check your sentences to see if your explanations or right or wrong. Correct any errors.

How to... Summarise a process/idea

Rather than expand or explain a process, your teacher might ask you to summarise it into its key parts. E.g. summarising the plot 'A Midsummer Night's Dream' in English.


1. Read through the relevant part of your knowledge organiser as directed by your teacher.
2. Write out the (up to) 5 most important parts in your KO book, leaving a two lines in-between.
3. For each part, add **one** main idea.
4. E.g. here, the 4 key characters are picked out, and the direction of love is shown through the arrows. Check and correct any errors.

How to use... Subject Specific Tasks or Questions

Your teacher might choose to set a task that is not outlined here, and which is specific to that topic or their subject.

In this case, your teacher will outline specifically what it is you need to do, and how. This will still include you checking and correcting any errors.

Act 1: **Hermia** and **Lysander** love each other but are not allowed to marry so decide to run away to the forest to get married in secret. **Demetrius** wants to marry **Hermia**. **Helena** loves **Demetrius**. They follow **Hermia** and **Lysander** into the forest.



```

graph TD
    H[Hermia] --> L[Lysander]
    D[Demetrius] --> H
    He[Helena] --> D
  
```

Week	Subject	Task
LP5.1	English	Complete the retrieval quiz and task 1 from the homework booklet.
	Maths	Complete the Maths homework task set on Sparx Maths.
	Science	Complete the Science homework task set on Sparx Maths.
	History	Create a mind map of causes of the English Civil War.
	RE	Write the key events for the lifetime of the Prophet Muhammad.
	Art	Choose a cake or sweet treat from home and recreate the shape using pencil.
	Technology	Choose one Pop Art artist we have studied (e.g. Andy Warhol, Roy Lichtenstein). Draw or stick in a small copy of one of their artworks.
IT	Complete the task on Seneca.	

Week	Subject	Task
LP5.2	English	Complete the retrieval quiz and task 2 from the homework booklet.
	Maths	Complete the Maths homework task set on Sparx Maths.
	Science	Complete the Science homework task set on Sparx Maths.
	Geography	Define the greenhouse effect.
	Spanish	Use your knowledge organiser to revise the vocabulary for a short vocabulary test.
	Drama	Look at the key vocabulary. Choose 5 and learn the spelling and definition. Look, cover, write to test yourself.
	Music	Find out about the history of musical theatre and how it developed from Opera.
PE	Use the 'Look, cover, write, check' method to list the key training principles/key terms of striking and field sports.	

Week	Subject	Task
LP5.RLW	ALL	<p>This week is an opportunity to work on knowledge that has been identified during lessons as key areas for development.</p> <p>This could be additional revision and recall tasks from the knowledge organisers or it could be specific tasks set by classroom teacher.</p>

Week	Subject	Task
LP5.3	English	Complete the retrieval quiz and task 3 from the homework booklet.
	Maths	Complete the Maths homework task set on Sparx Maths.
	Science	Complete the Science homework task set on Sparx Maths.
	History	Look, cover, check to learn the consequences of the American Civil War.
	RE	Describe how Jesus approached the vulnerable in society.
	Art	Select and appropriate primary resource and accurately draw the outline, adding tone to create shape.
	Technology	Draw a labelled diagram of your final piece, annotate it to include your thought process and how it links to the design movements.
IT	Complete the task on Seneca.	

Week	Subject	Task
LP5.4	English	Complete the retrieval quiz and task 4 from the homework booklet.
	Maths	Complete the Maths homework task set on Sparx Maths.
	Science	Complete the Science homework task set on Sparx Maths.
	Geography	Explain the physical and human causes of the climate change.
	Spanish	Use your knowledge organiser to revise the vocabulary for a short vocabulary test.
	Drama	Learn and rehearse your lines and movement for your PRT.
	Music	Complete the music theory worksheet in your homework booklet.
PE	Create a list of the positions (team sports) or events in your sport (striking and fielding).	

Homework tasks

Week	Subject	Task
LP5.5	English	Complete the retrieval quiz and task 5 from the homework booklet.
	Maths	Complete the Maths homework task set on Sparx Maths.
	Science	Complete the Science homework task set on Sparx Maths.
	History	List the events of the Syrian Civil War.
	RE	Create a fact file Maria Christina Gomez.
	Art	Create a colour page inspired by a chosen sweet treat, display the colour creatively, exploring what the colour means and how it can be portrayed.
	Technology	Write 3 key features of Pop Art you will use in your own design (e.g. bright colours, bold outlines, dots, repetition, speech bubbles).
IT	Complete the task on Seneca.	

Week	Subject	Task
LP5.6	English	Complete the retrieval quiz and task 6 from the homework booklet.
	Maths	Complete the Maths homework task set on Sparx Maths.
	Science	Complete the Science homework task set on Sparx Maths.
	Geography	Explain the difference between mitigating and adapting to climate change, and give examples.
	Spanish	Use your knowledge organiser to revise the vocabulary for a short vocabulary test.
	Drama	Learn and rehearse your lines and movement for your PRT.
	Music	Complete the music theory worksheet in your homework booklet.
PE	Practice some of the key techniques that are used within your sport/activity at home.	

Week	Subject	Task
LP5.7	English	Complete the retrieval quiz and task 7 from the homework booklet.
	Maths	Complete the Maths homework task set on Sparx Maths.
	Science	Complete the Science homework task set on Sparx Maths.

This Learning Programme you will be focusing on completing your final piece.

1. Evaluate your work so far
2. Explore your ideas
3. Refine your ideas
4. Test your process' and materials
5. Produce final piece
6. Produce final piece
7. Refine final piece



Key Word	Definition
Resolution	The level of detail in an image or artwork; higher resolution means clearer and sharper detail.
Evaluate	To judge or review something carefully, explaining what works well and what could be improved, and why.
Tone	The lightness or darkness of a colour or shade, used to create form, depth, and mood.
Texture	The surface quality of an artwork, either real (how it feels) or visual (how it looks like it feels).
Refine	To improve or adjust an artwork by making thoughtful changes to details, techniques, or ideas.
Reflect	To think carefully about your work or the work of others, considering decisions, outcomes, and improvements.
Observational	Drawing or creating art by closely looking at real objects, people, or scenes from life.
Art Elements	The basic visual components used in art, such as line, shape, form, tone, texture, colour, and space.



This Learning Programme you will be learning about:
GREEK THEATRE

Key Vocabulary

Greek Chorus	A group of characters who comment upon the main action of a play.
Choral speech	Ensemble speaking
Choral movement	Ensemble actions.
Tragedy	A play with tragic events and an unhappy ending typically with the downfall of a main character.
Amphitheatre	An open circular building / theatre.
Satyr play	A comic play with a mythological subject and chorus.

LP2.1

LP2.2

LP2.3

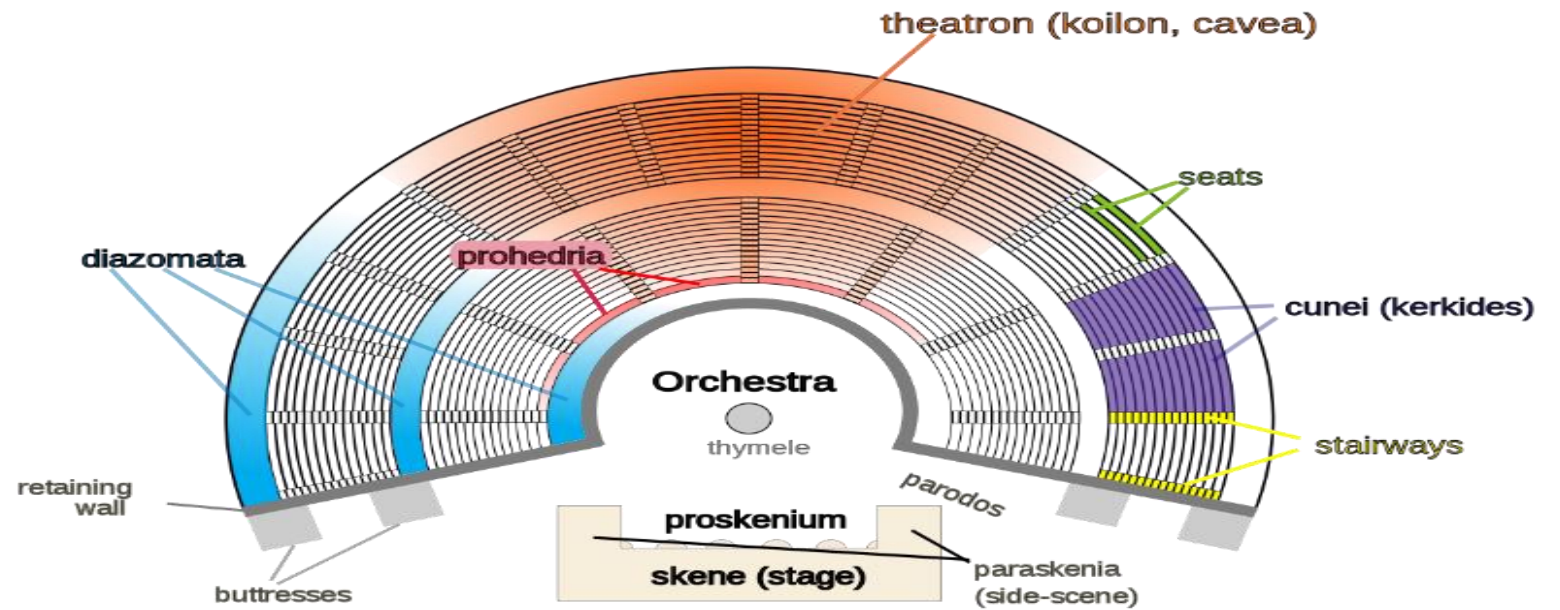
LP2.4

LP2.5

LP2.6

LP2.7

- Theatre as we know it today is believed to have begun in Greece in the 6th Century BC.
- Early Greek theatre consisted mainly of choral chanting. At the festival of Dionysus, the ancient Greek poet Thespis is credited with introducing prologue and speech into theatre, making him the first 'actor'. The term 'thespian' is derived from his name.
- Greek theatres were open air.
- Greek tragedies involved up to 3 actors and a chorus who wore masks.



ANCIENT GREEK THEATRE

AIM AND INTENTIONS:

- To entertain
- To honour the Gods / Goddesses
- To explore the relation between human and divine and the human world and material world.
- To encourage the audience to consider their accepted truths, traditions, laws and values.

During this learning programme, you will study Shakespeare's play *The Tempest*. You will learn:

- The **plot** of the play
- Key **characters** and their relationships
- Important **themes** and ideas
- How Shakespeare uses **language, form and structure** to create meaning

Key Vocabulary:

- **Comedy** – A play with humour that usually ends happily.
- **Dramatic irony** – When the audience knows something a character does not.
- **Soliloquy** – A speech where a character speaks their thoughts aloud.
- **Stagecraft** – How a play is performed on stage (movement, sound, props).
- **Shakespearean** – Relating to the language or style of Shakespeare.
- **Motive** – The reason why a character acts in a certain way.
- **Interpret** – To explain the meaning of something.

LP 5.1 You will learn:

- The **context of Shakespearean England**
- The **opening plot** of *The Tempest*
- Who the **main characters** are and their roles in the story

LP 5.2 You will learn:

- How to **identify a writer's methods**
- How Shakespeare creates **drama and tension**
- How to write **explained responses**, using **references from the text**

LP 5.3 You will learn:

- How to give your **own opinion** about how Shakespeare uses **language**
- How Shakespeare **presents characters**
- How the play links to its **historical and social context**

LP 5.4 You will learn:

- How to **use quotations** to support your ideas
- How to comment on **relationships between characters**
- How to refer confidently to **themes and plot**

LP 5.5 You will learn:

- How to make **relevant, explained comments** about: Shakespeare's **intentions, Characterisation**
- How to identify the effects of **Language, Form, Structure**

LP 5.6 You will learn:

- How characters **change and develop** throughout the play
- How to **track character development** using quotations
- How to **compare characters and themes**

LP 5.7 You will learn:

- How characters **develop across the whole play**
- How to explain ideas through **oracy activities**
- How to **speak clearly and confidently** in front of others

Plot:

The Tempest is about Prospero, a magician who lives on an island after being betrayed and exiled by his brother. He uses magic to create a storm that brings his enemies to the island. Through challenges, tricks and forgiveness, order is restored and Prospero chooses mercy over revenge.



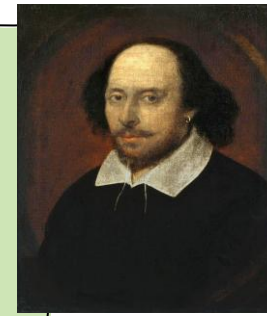
Characters:

The play focuses on characters such as:

- Prospero, a powerful magician;
- Miranda, his innocent daughter;
- Ariel, a magical spirit;
- Caliban, a troubled inhabitant of the island.
- Other characters arrive from the shipwreck and are tested by Prospero's plans.

**Playwright:**

William Shakespeare was an English playwright and poet who lived over 400 years ago. He wrote plays about love, power, jealousy and betrayal that are still studied today. His plays were performed on stage and written to entertain and teach audiences.

**Context:**

The Tempest was written in a time when people believed in magic, hierarchy and strong male authority. England was exploring new lands, which influenced the island setting. Society was patriarchal, meaning men held most of the power.

Themes:

Key themes include power, revenge, forgiveness, freedom and magic. Shakespeare explores how people use power and whether forgiveness is better than revenge. He also considers what it means to be truly free.



Freedom



This Learning Programme you will be learning about environmental issues such as plastic pollution and climate change.

Key Vocabulary

cause	What makes something happen
effect	A result or impact
Greenhouse effect	The earth's atmosphere warming up
Carbon dioxide	The key greenhouse gas
Fossil fuels	Coal. Oil, gas
sustainability	Activity that can continue into the future
glacier	A thick sheet of ice on the land
choropleth	A visual mapping technique
adaptation	How plants and animals create features to survive successfully

1

WHAT IS CLIMATE?

- Climate is the average weather in a place. It tells us what the weather is usually like.
- Climate is worked out by taking weather measurements over a long period of time (usually 30 years) and then calculating the average i.e. of temperature and rainfall.
- Weather is what you get on a day-to-day basis!

WHAT IS CLIMATE CHANGE?

A change in global or regional climate patterns, in particular a change apparent from the mid to late 20th century onwards and attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels!

2

EVIDENCE FOR CLIMATE CHANGE

ANALYSIS OF POLLEN AND TREES

Allows us to see if more or less pollination has taken place. More pollen would suggest a warmer climate as there would be more pollen and less pollen would indicate the opposite.

WEATHER RECORDINGS

Thermometers are more accurate now and digital readings can be recorded remotely. This means you can easily tell if the climate has changed as you can compare different dates at different times.

3

ICE CORES

Locked inside ice are molecules and trapped air, which are preserved year on year with more snowfall. Subtle changes in temperature can be measured from ice cores extracted in Antarctica. These can be used to tell the climate from millions of years ago.

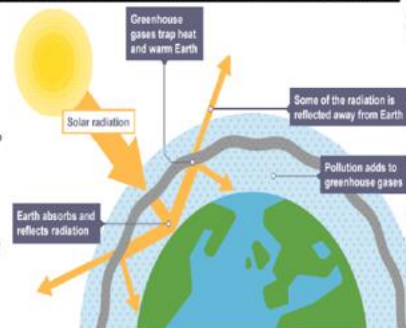
ROCKS AND FOSSILS

These can be studied for information covering longer time periods. Eg limestone would have been formed on the bottom of a warm seabed millions of years ago. Telling us what climate was like when first created.

THE GREENHOUSE EFFECT

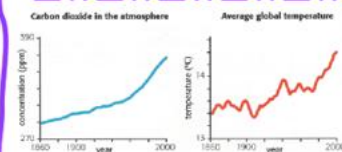
- A natural function of the Earth's atmosphere is to keep in some of the heat that is lost from the Earth.
- The atmosphere allows the heat from the Sun (short-wave radiation) to pass through to heat the Earth's surface.
- The Earth's surface then gives off heat (long-wave radiation).
- This heat is trapped by **greenhouse gases** (eg methane, carbon dioxide and nitrous oxide), which radiate the heat back towards Earth.
- This process heats up the Earth.

HUMAN CAUSES OF CLIMATE CHANGE



HUMAN FACTORS INCREASING WARMING

- Burning fossil fuels, eg coal, gas and oil - these release carbon dioxide into the atmosphere.
- Deforestation - trees absorb carbon dioxide during photosynthesis. If they are cut down, there will be higher amounts of carbon dioxide in the atmosphere.
- Dumping waste in landfill - when the waste decomposes it produces methane.
- Agriculture - agricultural practices lead to the release of nitrogen oxides into the atmosphere.



- Carbon dioxide (CO₂) is a greenhouse gas.
- As technology has developed and the population on earth has increased, the amount of CO₂ has increased since 1860.
- Data clearly shows that although temperatures have fluctuated since 1960, the general pattern is that global temperatures have increased as CO₂ levels rise.

4

What is plastic? Plastics are human-made materials, made from **polymers**, which can be moulded into shape while soft, and then set into a rigid or slightly elastic form. Plastic comes in different types eg polystyrene, PVC. These have different numbers to help identify them and make recycling easier.

5

How is plastic made?

The main ingredient in plastic is **oil** which formed over millions of years as marine organisms die, then sink to the seabed. They get covered in layers of sediment and compressed which helps to form oil deposits. Oil is extracted, then refined and can be made into plastic.

6

Why do we use so much plastic?

Plastic is a very versatile material – it can be made with many different properties •

- Flexible or rigid
- See through or coloured
- Light weight and cheap to produce
- Waterproof
- Hygienic and durable

7

What's the problem with plastic?

We produce and use huge amounts of it – 300 million tonnes is produced worldwide every year

40% of that plastic is **single use**

Only about 5% of plastic is recycled

Plastic does not **biodegrade** – it just breaks down into smaller and smaller pieces

When plastic gets into the ocean it can harm wildlife, the environment and eventually humans

Causes

Plastic gets washed into drains, then into rivers and into the sea; some plastic is dumped or washes off ships at sea; fishing nets can get broken and discarded at sea

Effects

Turtles can mistake plastic bags for jellyfish; sea birds mistake plastic for food. They eat it but can't digest it so they feel full and starve to death

This Learning Programme you will be learning about Civil Wars from around the world and in England and the impact these have had on religion, culture and people.

Key Vocabulary

Civil war	a war between the citizens of the same country.
Interregnum	a period of time between the reign of two leaders. i.e. Charles I and Charles II.
Republic	A country that does not have a king or queen.
Abolition	A country that does not have a king or queen.
Emancipation Proclamation	the rule by President Lincoln to end slavery in the USA.
revolution	Rebellion against the people in power.
ceasefire	Stop fighting to try and find peace.

What is a civil war?

A **civil war** is a fight or war that happens **inside one country**. Instead of two different countries fighting each other, it is **people from the same country** who are on **different sides**.

E.g. A huge argument in one family that becomes so serious that people start fighting instead of solving the problem peacefully — but on a much bigger scale.

Why does a civil war happen?

A civil war can start because groups of people inside a country **disagree strongly** about something important, like:

- Who should be in charge
 - What rules the country should follow
 - How people should be treated
 - How land or money should be shared
- When the disagreement becomes too big and people can't solve it by talking, fighting can sadly break out.

Who fights in a civil war?

People who live in the **same country**, but are on **different sides**, such as:

- The government vs. a group of people who want change
- Two or more groups who want power
- Groups who believe in different ideas

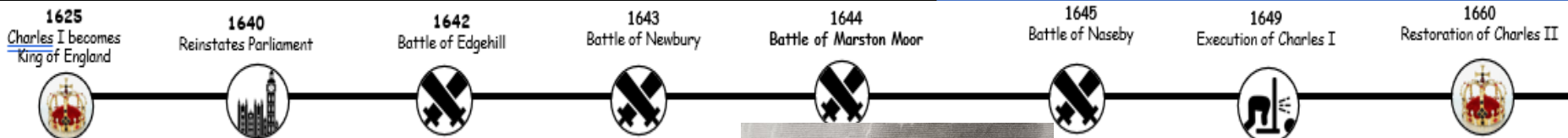
Why are civil wars especially sad?

Because the people fighting were once **neighbours, friends**, or even **family**, and the fighting can hurt the whole country.

1

Countries in Civil War in 2026:

1. **Afghanistan** - Ongoing fighting between the Taliban and various resistance groups.
2. **Haiti** - Country is in a civil war-like situation with armed gangs fighting for control.
3. **Colombia** - Government forces vs. rebel groups and drug cartels (onslaught of internal armed conflict).
4. **Ecuador** - Rapidly escalating internal conflict between the government and powerful drug gangs.
5. **Ethiopia** - Ongoing internal fighting involving ethnic groups and regional forces.
6. **Myanmar** - One of the world's largest civil wars involving the military and multiple ethnic armed groups.
7. **Sudan** - Intense civil war between the Sudanese Army and the RSF.
8. **Yemen** - Long-running civil war involving government forces, Houthi rebels, and other groups.
9. **Mozambique** - Conflict with Islamist insurgents in the north, considered part of an internal civil conflict.
10. **Somalia** - Civil war involving the government and Al-Shabaab militants.
11. **Central African Republic** - Multiple rebel groups fighting government forces.



Causes:

- Charles I believed in the **Divine Right of Kings**, meaning he thought God had chosen him to be king and he did not have to listen to anyone else, he became King of England in 1625.
- He married a French Catholic Henrietta Maria, this was a huge problem, England was a Protestant country, they were suspicious of Catholics.
- Charles I imposed a **ship tax**, a tax that was collected from people who lived in coastal towns, to help pay for the navy. Charles made people who lived inland pay it, too.
- Parliament present Charles with a list of concerns about how he ruled England. Charles dissolved Parliament and ruled without them for 11 years, from 1629-1640.
- He introduced a new Prayer book in Scotland, angering Scottish **Puritans**.

2

Causes:

Some general causes of Civil Wars include:

- Land
- Money
- Political instability
- Ideological differences
- Religion

Events:

A series of battles between supporters of the King (Cavaliers) and Parliament (Roundheads). Led by Oliver and Fairfax and Cromwell and King Charles and Prince Rupert.

- Battle of Edgehill 1642
- Battle of Newbury 1643
- Battle of Marston Moor 1644
- Battle of Naseby 1645

English Civil War 1642-1649



Consequences:

Some general consequences of Civil Wars include:

- Movement of people.
- Disrupted trade and economic problems.
- Problems that many lead to future wars.
- Affecting people's trust in government or authority.

Consequences:

- In 1649, King Charles I was put on trial for treason.
- He was found guilty and sentenced to death.
- Even though Charles had fought against Parliament, only 59 commissioners signed Charles' death warrant.
- England was ruled by Oliver Cromwell as **Lord Protector**.
- England remained a **republic** for 11 years, until 1660, when Charles II was invited back to rule England.

3

American Civil War 1861-1865

6

4 Causes:

- **Economy** the southern states in America's money depended on cotton and slavery.
- The Southern states wanted to be able to decide if they kept slaves, the North wanted to abolish it.
- Abraham Lincoln won the Northern states votes in the election, this was divided from the South.

Events:

A series of battles between supporters of the King (Cavaliers) and Parliament (Roundheads). Led by Oliver and Fairfax and Cromwell and King Charles and Prince Rupert.

- Battle of Edgehill 1642
- Battle of Newbury 1643
- Battle of Marston Moor 1644
- Battle of Naseby 1645



BATTLE OF CHANCELLORSVILLE

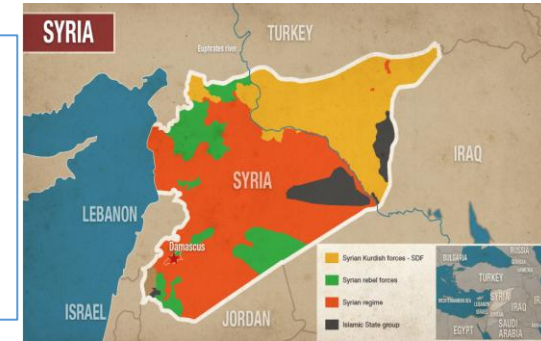
Consequences:

- Abolition of Slavery, in 1863 Abraham Lincoln issued the Emancipation Proclamation, legally ending slavery in the USA.
- Industrialisation in the North will trains and industry.
- Stronger central government.
- Rebuilding of America
- Ongoing racial tension.

Syrian Civil War 2000 - ongoing

Causes:

Since 2000, Syria has been ruled by Bashar al-Assad, he has taken steps to make certain that he will stay in power despite how unhappy many Syrians are with his rule. In 2011, it seemed like the Middle East might be caught up in a revolution, or change of government, as many young people began to protest. This period was called the Arab Spring, but it did not result in changes in Syria.



Events: In 2011 there were large scale protests across Syria against Assad's rule. Assad clamped down on protesters, even killing those who spoke out against him. In 2013 Iran launched a military intervention and Russia did the same in 2105 to support the Syrian government. Turkey launched an invasion in 2016, Assad's forces recaptured the major city of Aleppo. From 2020-2024 there was a ceasefire, but, clashes between both sides continued.



Consequences: In December 2024 Assad's regime fell, there were a number of consequences. Reports of deaths are between 250,000 to 500,000. Chemical weapons have been used by Assad which are banned around the world. Most deaths have been civilian casualties as bombs land on homes, schools and hospitals. Because of this widespread bombing the economy of Syria is very poor. Lots of people that remain live in poverty and some children having been able to go to school for years.

7

This Learning Programme you will be learning about cybersecurity

Key Vocabulary

Data	facts and figures in their raw form
Social engineering	techniques used to trick users into giving away personal information by manipulating their behaviour or emotions
Phishing	a scam conducted by sending fraudulent emails disguised as communication from reputable companies that ask the receiver to reveal personal information
DDoS	Distributed Denial of Service, an attack used to disrupt communication
Malware	malicious software - a program designed to cause damage to computer systems, corrupt or change files, steal data or cause disruption to services
Firewall	a system that filters network traffic to protect against unauthorised flows of data in or out of the network
Ransomware	a deliberate attempt to damage, disrupt or gain unauthorised access to computer systems, networks or data

The Data Protection Act 2018 is a piece of **legislation** passed by Parliament.

All organisations and people using and storing **personal data** must comply with the principles of the Data Protection Act.

There are seven principles of the Data Protection Act that companies must follow.



Methods of social engineering



In a **phishing** attack, the victim receives an email designed to look as if it has come from a reputable source.

The email usually provides a link to a fake website that asks you to enter valuable personal data.

Subject: Payment issue

Dear user,

There appears to be an issue with your account and your most recent payment has been cancelled.

Please log in [HERE](http://10g1n.com/F4G3?id=5b) to re-enter your

<http://10g1n.com/F4G3?id=5b>

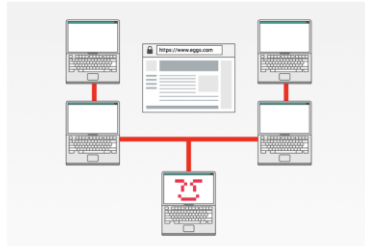
Sincerely,
Account Manager



Describe how online services can be disrupted



DoS (Denial of Service) attack = one attacker and one target

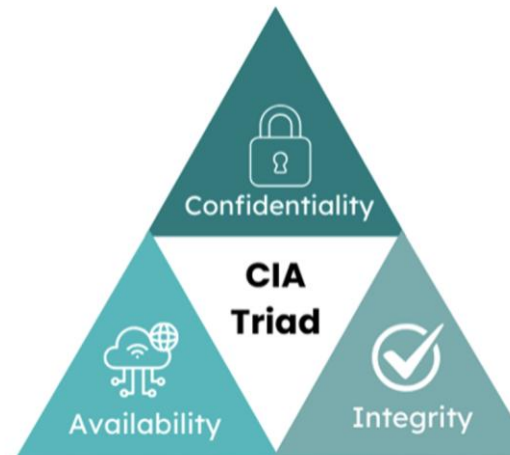


DDoS (Distributed Denial of Service) attack = many attackers and one target

Confidentiality – protecting data from unauthorised access.

Integrity – ensuring data remains accurate and unaltered.

Availability – ensuring data or systems are accessible when needed.



Type of malware	How it spreads	Effect on the system
virus	executed by running an infected file or program	damages files, device or network
worm	through a network of devices	slows down the system devices
trojan	disguised as something else, like a game, film or software update	gives remote access to an attacker

A **cyber attack** is a crime that happens online.

It is when someone tries to break into or damage computers, phones or networks without permission.

Examples are hacking, malware and phishing.



This LP I will learn about handling data, proportion word problems, multiplying and dividing fractions, fractions of amounts, fractions, decimals and percentages and theoretical probability.

1

Collect and record data using tables

Some swimmers were asked how many lengths they swam in a session. Their responses are given below.

Use their responses to complete the tally chart.

Responses

30 45 40 22 68
59 53 28 15 70
48 79 50 55 66

Number of lengths	Tally	Frequency
0-19	I	1
20-39	III	3
40-59	IIII II	7
60-79	IIII	4

2

Solving Proportion Problems

A recipe for 5 people needs 70 g of flour.

How much flour is needed to make the recipe for 15 people?

$$\times 3 \left(\begin{array}{l} 5 \text{ people need } 70\text{g} \\ 15 \text{ people need } 210\text{g} \end{array} \right) \times 3$$

A recipe for 30 biscuits needs 150 g of sugar.

How many biscuits can 50 g of sugar make?

$$\div 3 \left(\begin{array}{l} 30 \text{ biscuits need } 150\text{g} \\ 10 \text{ biscuits need } 50\text{g} \end{array} \right) \div 3$$

Reciprocals

a) $\frac{1}{3}$

the reciprocal of $\frac{1}{3}$ is $\frac{3}{1}$

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

Answer: 3

b) 15

$$15 = \frac{15}{1}$$

the reciprocal of $\frac{15}{1}$ is $\frac{1}{15}$

Answer: $\frac{1}{15}$

3

Fractions of an amount

Work out $\frac{5}{14}$ of 462 cm

$$\begin{aligned} \frac{5}{14} \text{ of } 462 &= \frac{5}{14} \times 462 \\ &= 165 \text{ cm} \end{aligned}$$

Calculate $\frac{1}{5}$ of 45

$$\begin{aligned} \frac{1}{5} \text{ of } 45 &= \frac{1}{5} \times \frac{45}{1} \\ &= \frac{45}{5} \\ &= 9 \end{aligned}$$

Multiply Fractions

a) $8 \times \frac{1}{9}$

$$\begin{aligned} 8 \times \frac{1}{9} &= \frac{8}{1} \times \frac{1}{9} \\ &= \frac{8 \times 1}{1 \times 9} \\ &= \frac{8}{9} \end{aligned}$$

Work out $\frac{4}{7} \times \frac{5}{11}$

Give your answer in its simplest form.

$$\begin{aligned} \frac{4}{7} \times \frac{5}{11} &= \frac{4 \times 5}{7 \times 11} \\ &= \frac{20}{77} \end{aligned}$$

Divide Fractions

a) $8 \div \frac{1}{3}$

$$\begin{aligned} 8 \div \frac{1}{3} &= \frac{8}{1} \times \frac{3}{1} \\ &= \frac{8 \times 3}{1 \times 1} \\ &= \frac{24}{1} \\ &= 24 \end{aligned}$$

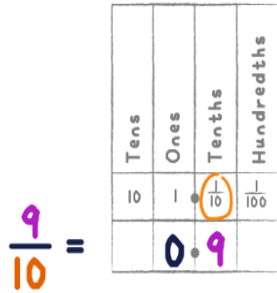
Work out the following, giving your answers as integers or fractions in their simplest forms:

a) $\frac{4}{13} \div \frac{1}{5}$

$$\begin{aligned} \frac{4}{13} \div \frac{1}{5} &= \frac{4}{13} \times \frac{5}{1} \\ &= \frac{4 \times 5}{13 \times 1} \\ &= \frac{20}{13} \end{aligned}$$

4 Converting Fractions and Decimals

Write $\frac{9}{10}$ as a decimal.



Converting Fractions, percentages and Decimals

Complete the table of equivalent fractions, decimals and percentages.

Fraction	Decimal	Percentage
$\frac{73}{100}$	0.73	73%
$\frac{7}{20}$	0.35	35%
$\frac{2}{5}$	0.4	40%

$$\frac{7}{20} = \frac{35}{100} \quad \frac{35}{100} = 35\% \quad 35 \div 100 = 0.35$$

$$40 \div 100 = 0.4 \quad 0.4 = \frac{4}{10} \quad \frac{4}{10} = \frac{2}{5}$$

5 Ordering Fractions, Decimals, Percentages

Put these values into ascending order:

$$0.03 \quad \frac{27}{100} \quad 22\%$$

$$0.03 \times 100 = 3 \quad \frac{27}{100} = 27\% \quad 22\%$$

$$\text{So, } 0.03 = 3\%$$

$$3\% = 0.03, \quad 22\%, \quad 27\% = \frac{27}{100}$$

Answer: 0.03 22% $\frac{27}{100}$

Writing numbers as percentages of other numbers

3 of the 10 customers in a cafe ordered hot chocolate.

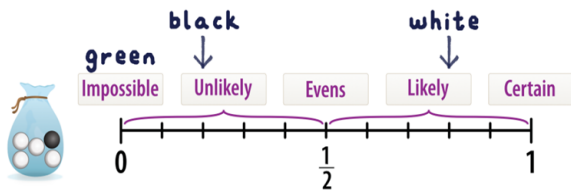
What percentage of the customers in the cafe ordered hot chocolate?

$$\frac{\text{number of customers who ordered hot chocolate}}{\text{number of customers}} = \frac{3}{10}$$

$$\frac{3}{10} = \frac{30}{100} = 30\%$$

Answer: 30 %

6 Probability Phrases



A marble is chosen at random from a bag with only 4 white marbles and 1 black marble.

Which **word** from the probability scale describes the probability of choosing

a) a white marble ?

Answer: Likely

b) a green marble?

Answer: Impossible

c) a black marble?

Answer: Unlikely

Probability as a fraction

Kayla has 11 pieces of fruit. 2 of them are apples, 3 are bananas and 6 are oranges.

She chooses one at random.

a) What is the probability that she chooses an orange?

$$P(\text{orange}) = \frac{\text{number of oranges}}{\text{total number of fruit}} = \frac{6}{11}$$

Answer: $\frac{6}{11}$

7 Writing Probabilities as Fractions, Decimals and Percentages

Tina has 5 cats. 4 of them are tabby cats.

If she chooses one of her cats at random, work out the probability that it is a tabby cat

a) as a fraction.

$$P(\text{tabby}) = \frac{\text{number of tabbies}}{\text{total number of cats}} = \frac{4}{5}$$

Answer: $\frac{4}{5}$

b) as a decimal.

$$P(\text{tabby}) = \frac{4}{5} = \frac{4 \times 2}{5 \times 2} = \frac{8}{10} = 0.8$$

Answer: 0.8

c) as a percentage.

$$P(\text{tabby}) = 0.8 = 80\%$$

Answer: 80 %

Mutually Exclusive Events

William owns 26 films. 17 of his films are sci-fi films.

He chooses one of his films at random.

What is the probability that it is **not** a sci-fi film?

$$P(\text{not sci-fi}) = \frac{\text{number of films that are not sci-fi}}{\text{total number of films}} = \frac{26 - 17}{26} = \frac{9}{26}$$

This Learning Programme you will be learning how to talk about your local area. You will learn how to describe your town, and what you can do there, as well as how to order food in a café. You will also learn how to use the future tense,

Key Vocabulary

Infinitive	The form of a verb found in the dictionary ending in ar/er/ir. This words describes the action but not who is doing it
Noun	Person, place or thing
Cognate	A word spelt the same in English and Spanish
Near future tense	Used to talk about what is going to happen
Conjugate	To change a verbs form to indicate a tense or person
Taoas	Spanish snacks served when people are out having a drink in Spain
Ir	To go
querer	To want

Year 7 Spanish LP5 Knowledge Organiser

LP5.1 – ¿Qué hay en tu ciudad? – What is there in your town?

¿Qué hay en tu ciudad? What is there in your town?

Hay...	There is...	una universidad	a university
un castillo	a castle	En...	In...
un centro comercial	a shopping centre	mi barrio	my neighbourhood
un estadio	a stadium	mi ciudad	my town, my city
un mercado	a market	mi pueblo	my village, my small town
un museo	a museum	No hay museo.	There isn't a museum.
un parque	a park	No hay nada.	There's nothing.
una piscina	a swimming pool	unos museos	some museums
una plaza	a square	unas tiendas	some shops
un polideportivo	a sports centre	muchos museos	a lot of museums
un restaurante	a restaurant	muchas tiendas	a lot of shops
una tienda	a shop		

¿Te gusta vivir en...? Do you like living in...?

Me gusta mucho vivir en...	I like living in... a lot.
No me gusta nada vivir en...	I don't like living in... at all.

porque hay because there is/there are...

porque es... because it is...

LP5.2 - ¿Qué haces en la ciudad? – What do you do in town?

¿Qué hora es? What time is it?

Es la una.	It's one o'clock.	Son las ocho menos veinte.	It's twenty to eight.
Son las dos.	It's two o'clock.	Son las nueve menos cuarto.	It's quarter to nine.
Es la una y cinco.	It's five past one.	Son las diez menos diez.	It's ten to ten.
Son las dos y diez.	It's ten past two.	Son las once menos cinco.	It's five to eleven.
Son las tres y cuarto.	It's quarter past three.	Son las doce.	It's twelve o'clock.
Son las cuatro y veinte.	It's twenty past four.	¿A qué hora?	At what time?
Son las cinco y veinticinco.	It's twenty-five past five.	a la una	at one o'clock
Son las seis y media.	It's half past six.	a las dos	at two o'clock
Son las siete menos veinticinco.	It's twenty-five to seven.		

¿Qué haces en la ciudad? What do you do in town?

Salgo con mis amigos.	I go out with my friends.	a la cafetería	to the cafeteria
Voy...	I go...	a la playa	to the beach
al cine	to the cinema	de compras	shopping
al parque	to the park	de paseo	for a walk
a la bolera	to the bowling alley	No hago nada.	I do nothing.

LP5.3 – En la cafetería – in the café

En la cafetería In the café

Yo quiero...	I want...	croquetas	croquettes
bebidas	drinks	gambas	prawns
un batido de chocolate/ de fresa	a chocolate/strawberry milkshake	jamón	ham
un café	a coffee	pan con tomate	tomato bread
una Coca-Cola	a Coca-Cola	patatas bravas	spicy potatoes
una Fanta limón	a lemon Fanta	tortilla	Spanish omelette
un granizado de limón	an iced lemon drink	¿Algo más?	Anything else?
un té	a tea	No, nada más.	No, nothing else.
raciones	snacks	¿Y de beber?	And to drink?
una ración de calamares	a portion of squid	¿Cuánto es, por favor?	How much is it, please?
		Son cinco euros setenta y cinco.	That's 5,75 €.

LP5.4 – ¿Qué vas a hacer? – What are you going to do?

¿Qué vas a hacer? What are you going to do?

Voy a salir con mis amigos.	I am going to go out with my friends.	Vamos a jugar al voleibol.	We are going to play volleyball.
Vas a ver la televisión.	You are going to watch TV.	Vais a chatear.	You (plural) are going to chat online.
Va a ir de paseo.	He/She is going to go for a walk.	Van a hacer los deberes.	They are going to do their homework.

¿Cuándo? When?

este fin de semana	this weekend	luego	then
el sábado por la mañana	on Saturday morning	finalmente	finally
el domingo por la tarde	on Sunday afternoon/ evening	a las tres de la tarde	at three o'clock in the afternoon
primero	first	(un poco) más tarde	(a little) later

LP5.5 – ¿Te gusta tu ciudad? – Do you like your town?

Use previous weeks vocabulary to help you with the listening tasks!

Gramática

You use the near future tense to say what you are going to do.

Use the present tense of the verb ir + a + the **infinitive**.

Voy a jugar ...	I'm going to play...
Vas a bailar ...	You are going to dance...
Va a ser ...	He/She/It is going to be...
Vamos a ver ...	We are going to watch...
Vais a ir ...	You (plural) are going to go...
Van a comer ...	They are going to eat...

>> p121

LP5.6 Mi vida en la Habana – my life in Havana

Use multiple tenses together to make your writing more interesting.

Present tense verbs

There are three groups of verbs in Spanish:

-ar verbs

estudiar	to study
estudio	I study
estudias	you study
estudia	he/she studies
estudiamos	we study
estudiáis	you (plural) study
estudian	they study

-er verbs

comer	to eat
como	I eat
comes	you eat
come	he/she eats
comemos	we eat
coméis	you (plural) eat
comen	they eat

-ir verbs

vivir	to live
vivo	I live
vives	you live
vive	he/she lives
vivimos	we live
visís	you (plural) live
viven	they live

LP5.7 Repaso - Revision

Use all of the previous weeks vocabulary to help you!

Key Vocabulary

Musical	A musical is a performance where a story is told through singing, acting, and sometimes dancing
Lyrics	Lyrics are the words to a song
Rhythm	How long or short the notes are or how the music is played.
Libretto	The text of a musical work including all spoken dialogue and lyrics, serving as the foundation for the performance
Chorus	In musical theatre, the chorus is a group of performers who sing and dance together, supporting the story
Context	Context means the background information about a musical. It helps us understand why the musical was written and what influenced it

What is a musical ?

Musical theatre is different to dramatic theatre in that it combines songs, spoken dialogue, and dance to tell a story. A musical is also different to a play with music, in that it gives as much importance to the songs and music as other elements of the production.



Characters In musicals

In musicals, music helps convey character by showing emotions, personality, and development. Melody, tempo, and key suggest mood, while instruments and vocal style match character traits. Lyrics reveal thoughts and motivations, helping the audience understand each character clearly.

2



Example:

Elphaba's character is shown through strong music and singing. She uses powerful, high melodies to show confidence and strength.

Types of Song in Musical Theatre



The Ballad: Slow, emotional songs for reflection on feelings.



The 11 O'Clock Number: A late show-stopper featuring a major realisation.



The Charm Song: Light-hearted tunes to make the audience like a character.



The 'I Want' Song: Characters sing about their dreams and goals for the story.



1. Solo

A song performed by one person, often sharing their private thoughts.



2. Ensemble

A group of performers singing together as a crowd.



3. Overture

An orchestral piece at the start that previews the show's songs.

3

4 Performing as a musical ensemble

In musical theatre, the ensemble (often called the chorus) is the heartbeat of the show. While they might not always have the lead speaking roles, the ensemble creates the world of the musical. They provide vocal harmonies, make the big dance numbers spectacular, and react to the main action to make the story believable. The ensemble creates the atmosphere, provides harmonies, performs large dance routines, and makes the world of the story look realistic by reacting to what is happening

Why do characters sing?

The Golden Rule

When emotion is too high to speak, you **sing**. When it's too high to sing, you **dance**! This is about the intensity of a character's internal feelings.



Songs are used to:

- Reveal deep secrets / inner thoughts (Soliloquy)
- Speed up the plot (Montage or transition)
- Celebrate with the cast (Ensemble numbers)
- Show a change in a character's personality
- Persuade another character to do something



4

TYPES OF MUSICALS



BOOK MUSICAL



REVUE

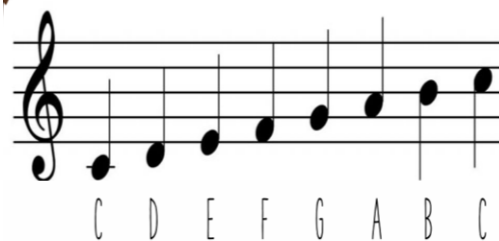


CONCEPT MUSICAL



JUKEBOX MUSICAL

6



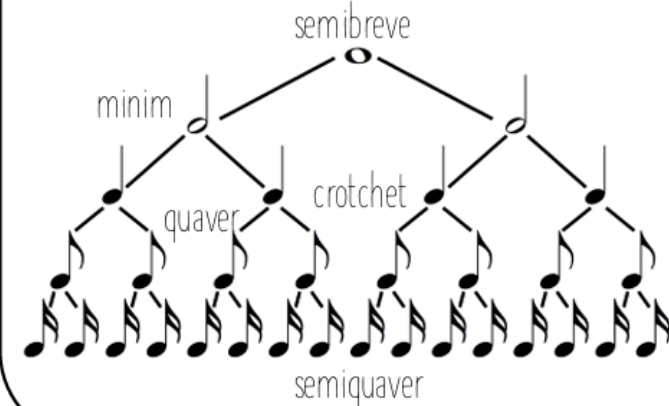
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Facts/info:

- Musical theatre uses song, dance and dialogue to tell a story.
- Book Musical: a strong story with songs fully integrated into the plot.
- Jukebox Musical: links together songs by a particular band or artist.

7

NOTE DURATIONS



This Learning Programme you will develop your fundamental skills of throwing and catching in striking and fielding sports including rounders, cricket and softball.

Key Vocabulary

Tactical Skills	The ability to make smart decisions and apply strategies during a game.
Free space	An area on the field where there are no fielders positioned.
Outwitting an opponent	Using clever tactics or quick thinking to gain an advantage
Decision making	The ability to quickly choose the best action during play – like when to run or stop.
Teamwork	Players working together by communicating, supporting each other and coordinating actions.
Coordination	The ability to use different parts of the body smoothly and efficiently together.
Agility	The ability to move quickly and easily while changing direction
Reaction Time	The speed at which an athlete responds to a stimulus
Power	The ability to perform a strong and explosive movement quickly.
Speed	How quickly a player can run between bases, chase the ball or react during play.

1

Students will know to investigate what they will be learning this LP and understand the correct technique for controlling and catching the ball. Students can explain why ball control is important.

2

Students will know how to understand the principles of under and over arm throws and explain how power is increased when throwing. Students will demonstrate under and over arm throws in practice situations.

3

Students will understand the principles of bowling and explain how power and spin can be developed when bowling. Students will be able to demonstrate under and over arm bowling.

4

Students will begin to understand the principles of batting and explain how accuracy can be improved when batting. Students will demonstrate batting technique in a practice situation.

5

Students will know how to evaluate striking and fielding techniques and how they can affect performance in a game. Students will know how to review their own throwing, bowling, batting and catching techniques.

6

Students will know how to understand the basic rules and regulations of a striking and fielding game and explain the scoring system for a striking and fielding game.

7

Students will know how to accurately replicate basic striking and fielding techniques and will know how to review their own striking and fielding techniques and how this has an impact on a game.

This Learning Programme you will be learning about being a prophet, how this may have changed over time and whether we believe that prophethood is still important today. This allows us to reflect upon the BHA values as well as our own morals and determine if we need to modify our behaviour to help promote a peaceful society.

Key Vocabulary

Prophet	a person who speaks for God and passes God's messages to people
Gospel	Good news – four books in the Bible telling the story of Jesus
Injustice	Something that is unfair or wrong
Marginalised	Being pushed to the edge of society and not given the same chances, voice or respect as others
radical	A very different from what is normal or traditional and often involved big or extreme change
Advocate	a person who speaks up for or supports someone or something
Commitment	Making a promise to do something and sticking to it, even when it is difficult
reform	making changes to improve something, especially a system, law or organisation

Steps toward Peace	Explanation Connected to Isaiah 2:1-5
Seek God's guidance and live by His teachings	The passage describes nations going to God for instruction. Peace begins when people willingly follow moral, just, and compassionate guidance.
Promote justice and fairness	God's teaching is portrayed as settling disputes fairly. When people and leaders act with justice, conflict is reduced at its source.
Transform harmful behaviour into positive action	The imagery of weapons becoming farming tools symbolises turning violence into something that brings life and growth. Individuals can choose constructive actions instead of destructive ones.
Learn peace, not war	The nations are described as learning peaceful ways. Peace requires education, practice, and commitment—not just the absence of fighting.
Choose reconciliation over conflict	God acts as a judge who resolves disputes. People today can choose dialogue, forgiveness, and negotiation instead of retaliation.
Walk in the "light" (live with integrity and compassion)	The passage ends with a call to live honorably. People bring peace by acting with kindness, honesty, and respect in everyday life.

In Islam, the **type of sin does affect the response**, but **every sinner is still treated with dignity and given the chance to repent**.

Shariah Law distinguishes between:

- **Private sins** (between a person and God) → handled through *personal repentance*, with no legal punishment.
- **Social/moral sins** that harm others → require *reconciliation*, apology, or compensation.
- **Major crimes** (like theft or assault) → involve *legal processes* with strict evidence rules and proportional penalties.

The overall aim is to balance **justice** (protecting society) and **mercy** (encouraging personal reform). Repentance is always possible, and only proven crimes receive legal punishment.



Biblical prophets would likely criticise today's culture for **materialism, injustice, and moral decline**, just as they challenged their own societies.

Islamic teachings in early Mecca addressed similar problems—**inequality, corruption, tribal conflict, and neglect of the poor**—promoting justice, charity, and ethical living.

Both traditions call for fairness, compassion, and moral responsibility in society.



Attitude towards sinners	Summary
Compassion	Jesus shows kindness to sinners.
Forgiveness	They are offered mercy and a fresh start.
Call to Change	Encouraged to repent and improve.
Against Hypocrisy	Criticises those who judge others.
Human Value	Every person is valued by God.



Year 7 Religious Studies LP5 Knowledge Organiser

Aspect	Elizabeth Fry	Olaudah Equiano
Who they were	A British Quaker and leading prison reformer (1780-1845).	A formerly enslaved African who became a leading abolitionist (c.1745-1797).
Main cause	Improving prison conditions—especially for women—and promoting rehabilitation.	Ending the transatlantic slave trade and exposing the cruelty of slavery.
Actions	Visited prisons, created education and work programmes, campaigned in Parliament for reform.	Wrote a bestselling autobiography, campaigned nationally, and worked with abolitionists.
Why their actions were radical	Challenged harsh Victorian attitudes, treated prisoners with dignity, and acted publicly as a woman when few women did.	Spoke out publicly as a Black former slave, challenged powerful economic interests, and used literacy to fight racism and slavery.
Impact	Influenced major prison reforms, improved conditions for thousands, inspired later humanitarian work.	Helped shift public opinion, strengthened the abolition movement, and contributed to ending the slave trade.

María Cristina Gómez was a **Baptist teacher and women's rights activist** in El Salvador. She taught poor rural women to read and helped found **CONAMUS**, supporting women facing violence and inequality.

Her work challenged powerful groups, and in 1989 she was **abducted and murdered**, with evidence linking the attack to members of the Salvadoran Air Force.

She is important in RE as an example of **faith inspiring courage, justice, and protection of the vulnerable**.



Living in a prophetic way is difficult because it requires **courage, personal sacrifice, and a willingness to challenge injustice, even when most people prefer to stay silent or avoid conflict.**

Prophetic living means speaking truth to power and consistently choosing what is right, which is demanding and often unpopular.

Many argue that we *do* still need prophets today—not necessarily in a religious sense, but as people who guide society toward justice, fairness, and compassion. Modern “prophetic voices” can be activists, community leaders, or anyone who challenges wrongdoing and inspires positive change.

Serving the marginalised matters because it reflects a core moral and religious principle: **every person has value and deserves dignity**. Marginalised people—such as the poor, excluded, or oppressed—often face barriers that limit their opportunities, safety, or wellbeing. Helping them is important because:

1. It promotes fairness and justice

Many societies and religious teachings emphasise defending those who are treated unfairly or left behind.

2. It restores human dignity

Supporting those who are ignored or mistreated shows that their lives matter.

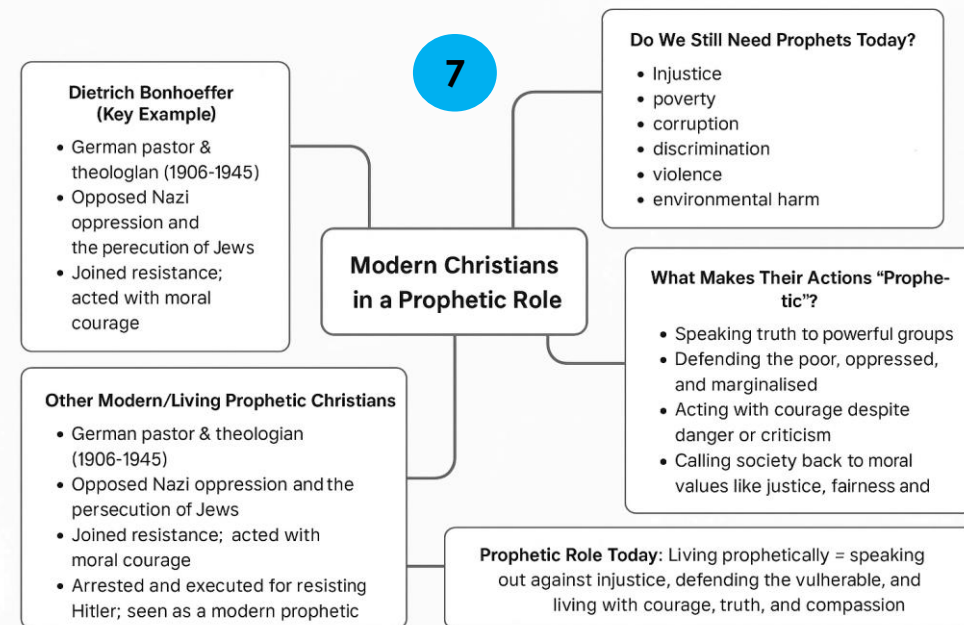
3. It challenges inequality

By helping the vulnerable, we address systems that keep people trapped in poverty or discrimination.

4. It creates stronger, kinder communities

When the needs of the most vulnerable are met, the whole community becomes more compassionate and supportive.

5. It encourages personal growth



Key Vocabulary

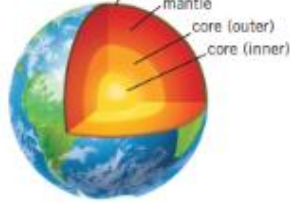
Orbit	The curved path that an object follows as it moves around another object in space due to gravity.
Asteroid	A rocky object that travels through space and usually orbits the Sun.
Habitat	The natural place where an organism lives and gets what it needs to survive.
Consumer	An organism that gets its energy by eating other organisms.
Prey	An animal that is hunted and eaten by another animal.
Galaxy	A very large group of stars, planets, dust, and gas held together by gravity.
Conservation	The protection of living organisms and their habitats to prevent them from being harmed or lost.
Carnivore	A carnivore is an organism that gets its energy by eating other animals.
Producer	An organism, usually a plant, that makes its own food using sunlight through photosynthesis.
Food Web	A diagram showing how different food chains are linked together in an ecosystem.

Year 7 Science LP5 Knowledge Organiser

This Learning Programme you will be learning about how the solar system is structured and moves, how gravity causes day, night and seasons, and how living things depend on each other through food chains, food webs, competition and biodiversity in stable ecosystems.

1

The Earth

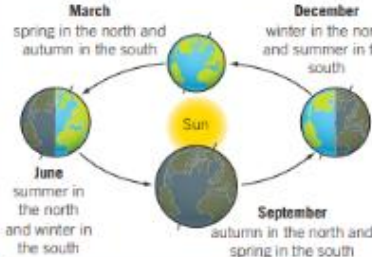


The Earth has three main layers:

- The **crust** is rocky and solid
- The **mantle** is made from mainly solid rock but this can flow
- The **outer core** is liquid metal and the **inner core** is solid

The spinning Earth

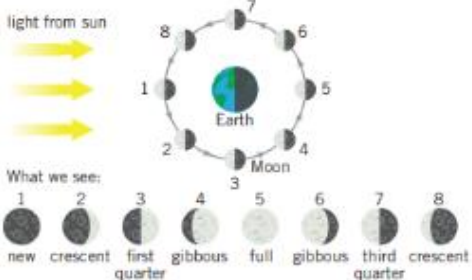
- The Earth takes 365 days to **orbit** the Sun, this is one **Earth year**
- The Earth takes 24 hours to spin on its **axis**, that is why we have day and night
- The Earth's **axis** has a tilt of 23.4° which gives rise to our **seasons**



2

The Moon

- The Moon is a **natural satellite** which orbits the Earth
- One orbit of the Earth takes 27 days and 7 hours, this causes us to see the **phases of the moon**
- The different phases of the moon are caused by different parts of the Moon being lit by the Sun



light from sun

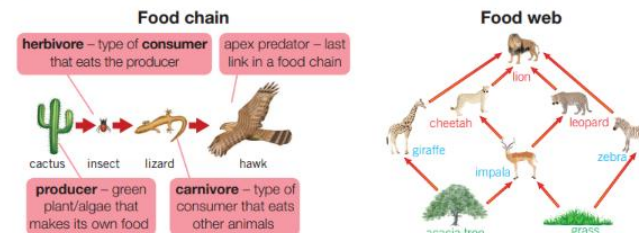
What we see:

1 new, 2 crescent, 3 first quarter, 4 gibbous, 5 full, 6 gibbous, 7 third quarter, 8 crescent

3

Food chains and webs

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



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

The Solar system

Our **solar system** consists of eight planets which orbit the Sun, four inner and four outer planets

Inner planets
Small and rocky planets
(**dwarf planets**)

Outer planets
Gas giants

Mercury, Venus,
Earth, Mars

Jupiter, Saturn,
Uranus, Neptune

- Between the inner and outer planets, between Mars and Jupiter, there is the **asteroid belt**
- The planets all orbit the Sun, but the path of their orbits are all slightly different, giving them the look of 'wandering' in the sky

4

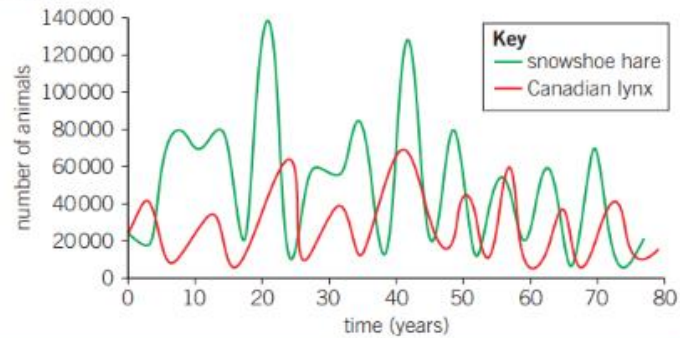
Ecosystems

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

5

Competition

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



6

Disruption to food chains

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

7

Ecosystems

- All the organisms of the same species living in one area are called a population.
- An ecosystem is all the organisms living in a particular place, together with the non-living parts of the environment.
- A community is made up of all the different populations living together in an ecosystem, and the place where organisms live is called their habitat.
- Food chains and food webs show how energy is transferred between organisms in an ecosystem.
- Organisms compete for resources such as food, space, water and light.
- Biodiversity is the variety of different organisms in an ecosystem and helps keep ecosystems stable.

Key Word	Definition
ACCESS FM	A design criteria tool used to analyse and develop products. It stands for Aesthetics, Cost, Customer, Environment, Size, Safety, and Materials.
Design Brief	A short statement that explains what needs to be designed and made, who it is for, and what the product must do.
Evaluation	Judging a product or design process by reviewing what works well and what could be improved, based on the design criteria.
Iteration	The process of developing and improving a design by making changes, testing ideas, and refining them multiple times.
Safety	Measures taken to reduce risk and prevent harm during design, making, and use of a product.

1. Plan your practical
2. Execute your ideas safely
3. Refine your final piece
4. Evaluate your final piece



DESIGN & TECHNOLOGY

ACCESS FM



AS DESIGNERS WE USE ACCESS FM TO HELP US ANALYSE EXISTING PRODUCTS AND TO SUPPORT US IN WRITING A PRODUCT SPECIFICATION.

AESTHETICS

WHAT DOES THE PRODUCT LOOK LIKE?
You should describe the product. Has the product been inspired by anything in particular? You could comment on: Colour, shape, texture, pattern and style.

COST

HOW MUCH DOES IT COST TO BUY/MAKE THE PRODUCT?
How much do the materials cost to make the product? Is the product good value for money? Is it expensive or cheap compared to similar products on the market?

CUSTOMER

WHO HAS THE PRODUCT BEEN DESIGNED FOR?
Who is the target market for the product? You could consider: Age, gender, wants, needs and preferences.

ENVIRONMENT

WHAT IS THE IMPACT ON THE ENVIRONMENT?
Does the product being made or used have a negative impact on the environment? Consider the 6R's of sustainability.

SIZE

HOW BIG/SMALL IS THE PRODUCT?
What are the products measurements? Is this similar to other products on the market? Does the product work well at this size? Is it easy for the consumer to use?

SAFETY

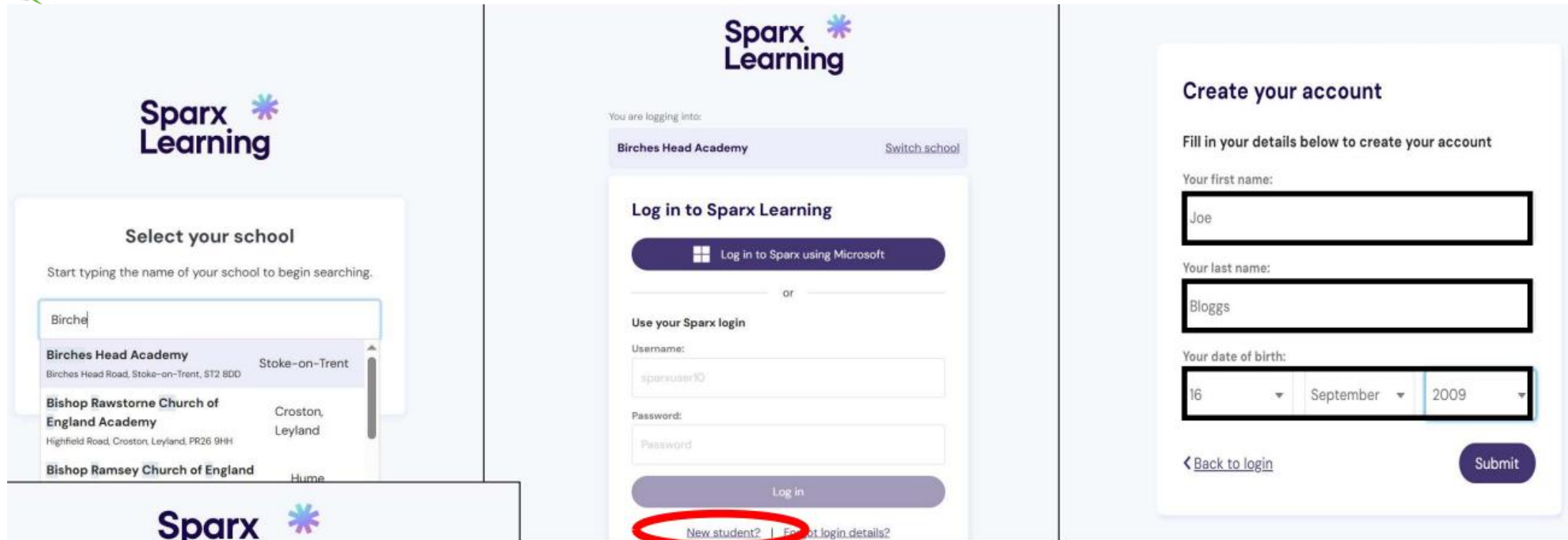
ARE THERE ANY SAFETY CONCERNS WHEN USING THE PRODUCT? Are there any safety risks to consider when using the product? Is the consumer aware of how to correctly and safely use the product? You could consider: Sharp edges, weight, small components and hazardous materials.

FUNCTION

WHAT IS THE PRODUCT DESIGNED TO DO?
What is the products job? How well does it do the intended job? Could the products function be improved? Is the product one of a kind or are there similar products that do the same job already on the market?

MATERIAL

WHAT IS THE PRODUCT MADE OUT OF?
What materials have been used to make the product and why? How was the product made? What manufacturing techniques were used?



The image shows two screenshots of the Sparx Learning website. The left screenshot shows the 'Select your school' page with a search bar containing 'Birche' and a dropdown menu listing schools like 'Birches Head Academy'. The right screenshot shows the 'Log in to Sparx Learning' page with a 'Log in to Sparx using Microsoft' button, a 'Use your Sparx login' section with username and password fields, and a 'Log in' button. A red circle highlights the 'New student?' link at the bottom of the login page.



The image shows the 'Step 1. Remember your username' page. It features the Sparx Learning logo and a text box containing the username 'joebloggs'. Below the text box is a button labeled 'Set a password >'. The text explains that this is the username used for login and advises remembering it.

1. Go to maths.sparx-learning.com/student
2. Select your school and click 'Continue'
3. Click 'New user' underneath the login fields
4. Follow the steps to create your account:
5. Enter your name and date of birth
6. Note down your username
7. Create a password (minimum 6 characters)

THE ORACY COMPASS



Are you thinking about the speed and volume of your voice?

Are you using expression to make your point?

Are you using gestures to show you are listening?



'I would like to start by saying...'

'I agree and would like to add...'

'To challenge you X, I think...'

Are you facing who you are speaking to?

Do you appear to be talking confidently?



Are you being respectful and responding appropriately?

Are you taking turns to talk?

Are you inviting others to share their opinions?



'Could you provide an example'

'Could you clarify what you mean by...'

'The main points raised today were...'

