Frank Field
Education Trust

"You will face many defeats in your life but never let yourself be defeated"

- Maya Angelou

Year 8 Knowledge Organiser

Learning Programme 4

Pupil Name:	Form Group:

Birches Head Academy

Contents page

Birches Head Academy

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

4

Birches Head Academy

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**

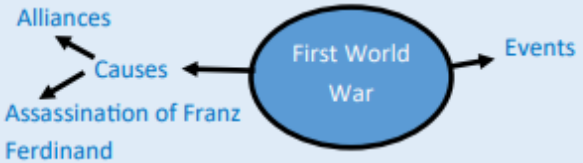
How to use... Look, Cover, Write, Check and Correct

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	Algorithim	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:

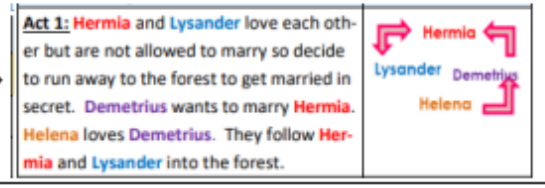
1. **Because:** helps to explain a reason, cause or why something works.
2. **But:** helps to explain a limitation or problem.
3. **So:** helps to explain what happens next in a sequence, process or event.

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.

5

Homework tasks

Week	Subject	Task
LP4.1	English	Task 1 in the homework Booklet.
	Maths	Complete the Maths homework task set on Sparx Maths.
	Science	Complete the Science homework task set on Sparx Science.
	History	Create your own definition for 5 of the key vocab words.
	RE	Explain the difference between prejudice and discrimination.
	Art	Select 'found materials' that be collaged into your sketchbook on the theme of Natural Forms.
	Technology	Create a one-page comparison of Bauhaus and Memphis, include: three key features of each movement and make it visually appealing.
	IT	Complete the task on Seneca.

Week	Subject	Task
LP4.2	English	Task 2 in the homework Booklet.
	Maths	Complete the Maths homework task set on Sparx Maths.
	Science	Complete the Science homework task set on Sparx Science.
	Geography	Make a key word glossary for the water cycle.
	Spanish	Use your knowledge organiser to revise the vocabulary for a short vocabulary test.
	Drama	Make notes on the style of Total Theatre, key influences and intention of Stephen Berkoff.
	Music	Find another protest song from more modern times that protests against injustice. Describe how the lyrics demonstrate this.
	PE	Create a list of the positions (team sports) or events in your sport (athletics).

Birches Head Academy

Homework tasks

Week	Subject	Task
LP4.3	English	Task 3 in the homework Booklet.
	Maths	Complete the Maths homework task set on Sparx Maths.
	Science	Complete the Science homework task set on Sparx Science.
	History	Look, cover, check to learn the MAIN causes of WW1.
	RE	Describe what Amnesty International and Christian Aid do to protect people.
	Art	Select imagery relating to the topic natural forms.
	Technology	Create a one-page comparison of Bauhaus and Memphis, include: three key features of each movement and make it visually appealing.
	IT	Complete the task on Seneca.

Week	Subject	Task
LP4.4	English	Task 4 in the homework Booklet.
	Maths	Complete the Maths homework task set on Sparx Maths.
	Science	Complete the Science homework task set on Sparx Science.
	Geography	Make a visual summary of the types of erosion and transportation.
	Spanish	Use your knowledge organiser to revise the vocabulary for a short vocabulary test.
	Drama	Create flashcards for the techniques used by Berkoff showing the technique and the definition. Save these for the next homework as you will need them.
	Music	Create a revision card about the difference between Rhythm and Tempo in your homework booklet.
	PE	Practice some of the key techniques that are used within your sport/activity at home.

7

Homework tasks

Week	Subject	Task
LP4.5	English	Task 5 in the homework Booklet.
	Maths	Complete the Maths homework task set on Sparx Maths.
	Science	Complete the Science homework task set on Sparx Science.
	History	Create a fact file for General Haig.
	RE	Create a creative piece of writing such as a story or a poem, including as many of the key words as possible.
	Art	Create an A5 tonal study of a natural form.
	Technology	Create a clock design sketch inspired by your favourite movement, Bauhaus or Memphis.
	IT	Complete the task on Seneca.

Week	Subject	Task
LP4.6	English	Task 6 in the homework Booklet.
	Maths	Complete the Maths homework task set on Sparx Maths.
	Science	Complete the Science homework task set on Sparx Science.
	Geography	Create a diagram to show the physical and human factors that cause river flooding.
	Spanish	Use your knowledge organiser to revise the vocabulary for a short vocabulary test.
	Drama	Explain how you have used three of the techniques in your own performances in lessons during this learning programme.
	Music	Complete the music theory worksheet in your homework booklet.
	PE	Create a strengths and weaknesses list/table for athletics around your knowledge.

Week	Subject	Task
LP4.7	English	Task 7 in the homework Booklet.
	Maths	Complete the Maths homework task set on Sparx Maths.
	Science	Complete the Science homework task set on Sparx Science.

8

Birches Head Academy

Natural Forms

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

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

Keyword	KS3-Friendly Definition
Composition	**How all the parts of an artwork are arranged — where things are placed to make the picture look balanced and interesting.**
Tone	**How light or dark something is. Artists use tone to show depth, shadows, and form.**
Review	To look back at your work and think about what is good and what could be better.
Analyse	To look closely at an artwork and explain how it has been made and why it looks the way it does.
Reflect	To think carefully about your own work and what you've learned.
Resolution	**How clear or detailed a digital image is. High resolution = sharp; low resolution = blurry.**
Inspiration	Something that gives you ideas for your artwork — such as an artist, a place, an object, or an experience.

Birches Head Academy

Year 8 Drama LP4 Knowledge Organiser

This Learning Programme you will be learning about the theatre practitioner STEVEN BERKOFF.

Style

Berkoff's **'Total theatre'** is an exaggerated and grotesque style of theatre that defies the 'norms' of naturalistic theatre. With minimalistic, bare stages and little language the focus is on the physical movement. Berkoff encourages participants to experiment and use the imagination to express the story with the body and not the set.

Aim / Intention

- To shock, amuse or amaze. The opposite of naturalism. With themes such as struggles of working class, fear and corruption. Berkoff believed theatre should be symbolic.

Key Vocabulary	
Chorus	A group of performers who comment both vocally and physically on the action using unison.
Grotesque:	Fantastic and outrageous
Body as prop	Using the body to create objects
Jo ha kyo	Kabuki concept where jo is a slow beginning, ha speeds events up and ku is a short conclusion.
Kabuki's 'mie	A powerful and emotional pose struck by a character and held for a moment

LP2.1

LP2.2

LP2.3

LP2.4

LP2.5

LP2.6

LP2.7

- Key influences:

Greek Theatre (ensemble), Japanese Noh/Kabuki, Jacque Lecoq, Shakespeare, Punch and Judy.

Steven Berkoff is an English actor, author, playwright and theatre director. His career spans from 1965 to present.

Berkoff Techniques:

Emphasis of **visual language stylised movement** (slow motion/ robotic).
Heightened use of facial expressions, body language, movement and vocal work.
Direct address: Speaking to the audience as if they are a part of the performance.
Minimalism set and non-naturalistic design elements. Actor at the forefront.
Marionettes: Puppets controlled by strings.
Tableaux: A still image usually placed in the middle of movement or action.
Asides: To let the audience know the thoughts of a character.
Breaking the fourth wall: No separation between actor and audience.
Masks/makeup: To create eerie effects and influenced by Greek Theatre.
Ensemble: Often uses chorus in a stylised sequence of movement, heightened vocal and physical skills.
Mime: Very few props, actors rely on mime and exaggeration.

10

Birches Head Academy

Year 8 English LP4 Knowledge Organiser

This Learning Programme you will be learning about transactional writing. We will be exploring speeches, brochures and debates.

Key Vocabulary	
Rhetorical questions	A question that does not require a response, used to engage or provoke thought in an audience.
Ethos	The use of **credibility or trust** to persuade an audience.
Empathy	The ability to **understand and share someone else's feelings**
Pathos	The use of **emotion** to persuade.
Tone	The **attitude or feeling** a writer or speaker conveys through their choice of words
Justify	**To give clear reasons or evidence to show that something is right, fair, or reasonable**.
Direct address	When a writer or speaker **speaks directly to the audience** using words like *you*, *your*, or *we*.
Justice	The concept of **fairness**,—whether that's protection, rights, or consequences.
Anecdote	A **short, personal story** used to illustrate a point.
Logos	The use of **logic and reason** to persuade.

1

LP 4.1

Students will learn about transaction writing and what the main purposes are for speeches.

Students will be able to understand Aristotle's three proofs: Ethos, Pathos, Logos.

Students will look at identifying the three proofs in television adverts.

2

LP 4.2

- Students will understand the importance of using voice to incite change and fight for justice
- Students will be able to identify subtle persuasive techniques within a speech and why they are effective.
- Students will explore rhetorical devices and why they are used within a speech.

3

LP 4.3

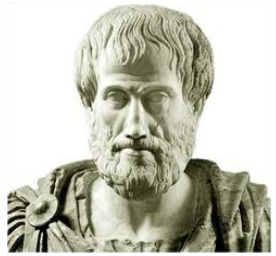
Students will discuss the effectiveness of two speeches and be able to justify their chosen response.

Students will be learning to understand how to use APIIC in their writing to structure their speech.

Students will write a speech based on the APIIC transactional writing structure.

Greek Philosopher Aristotle believes that a really convincing argument has to include these three components:

1. **Ethos** – This is about *trust*. You try to sound reliable, knowledgeable, and fair so the reader believes you.
2. **Pathos** – This is about *feelings*. You use emotional language to make the reader feel sympathy, anger, excitement, or concern.
3. **Logos** – This is about *logic*. You use facts, statistics, and clear reasoning to persuade the reader.



Formal speech – A carefully planned piece of spoken writing (delivered at events such as school assemblies, ceremonies, conferences, or political events) that uses clear structure and persuasive language to inform, inspire, or convince an audience.

Brochure – A persuasive and informative leaflet (often found in travel agencies, museums, schools, or businesses) that uses engaging language and eye-catching layout to promote a place, product, or service and encourage people to choose it.

11

Birches Head Academy

Year 8 English LP4 Knowledge Organiser

LP 4.4

- Students will learn how to identify structural techniques within a famous speech.
- Students will prepare to present their speeches and explore how body language, tone and facial expressions influence the success of a speech.
- Students will present their speech to their peers and be able to give feedback on language techniques and delivery.

LP 4.5

Students will be introduced to a brochure template and endeavour to understand the requirements within a brochure.
Students will begin to plan their own brochure for Birches Head Academy and explain why they have structured their brochure this way.
Students will begin to investigate debate and how to have a respectful debate.

LP 4.6

- Students will prepare arguments for both perspectives of a debate.
- Students will explore respectful debate and the requirements.
- Students will actively listen and give responses to their peers regarding debate skills.

LP 4.7

- Students will create a brochure about a chosen social justice topic.
- Students will identify the effectiveness of a speech testing prior knowledge of persuasive techniques.
- Students will plan a speech related to the topic with the brochure as a visual aid for peers.

Direct address	Talk directly to your reader in order to appeal to their emotions – use words like you or we.
Alliteration	You can start words with the same sounds as it makes your writing sound more appealing to the reader.
Facts	Use facts as evidence to support your arguments.
Opinions	Make sure you clearly present your opinion and argue why your reader should agree with it.
Rhetorical questions	Questions with no answers that are meant to make the reader think instead. You can use them to convince your reader that your views are right.
Emotive language	Language that is meant to make your reader feel a certain emotion. You can use it to appeal to your readers emotions.
Statistics	Use statistics as evidence to both support your point and show your expertise in your topic.
Triples	List examples in groups of 3, as this will be more appealing to your reader.

INTO DA FOREST

These strategies can help to augment your argument and make them more persuasive.

1. **Claim** – State your main argument or position clearly.
2. **Reason(s)** – Explain why you believe this.
3. **Evidence** – Support your reasons with facts, examples, statistics, or expert opinions.
4. **Counterargument** – Acknowledge an opposing viewpoint.
5. **Rebuttal** – Respond to the counterargument and explain why your argument is stronger.
6. **Conclusion** – Summarise your main point and reinforce why the reader should agree with you.

Birches Head Academy

Year 8 Geography LP4 Knowledge Organiser

This Learning Programme you will be learning about the key processes and landforms of rivers and coasts.

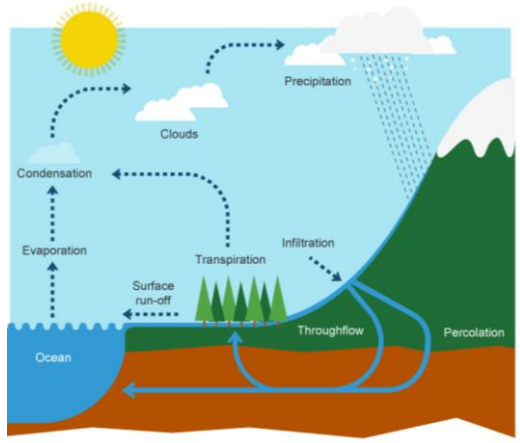
Key Vocabulary	
Drainage basin	The main river channel, its tributaries, and the land they drain of water.
Erosion	The wearing away of the river banks and bed.
Fluvial processes	All the things that go on in the river- erosion, transportation and deposition.
Physical factor	Natural reasons that increase the risk of flooding.
Fetch	How far a wave has travelled.
Bay	A horseshoe shaped landform with projections of harder rock either side.
Stack	An isolated tower of rock.
Weathering	The breakdown of rock 'in situ'.

1

The water cycle

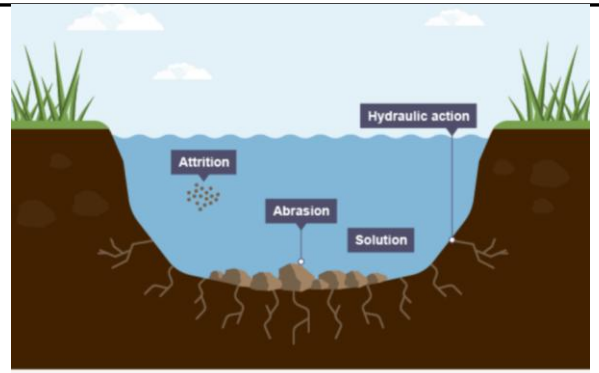
Understanding how the water cycle operates is key to understanding how rivers work. The water cycle is also known as the hydrological cycle . It is called a cycle because water continuously moves around the system. Rivers are part of this cycle. The illustration shows how water changes state through the cycle. It can be a liquid, a vapour or a solid .

Energy from the Sun heats the surface of the Earth; water is from oceans, rivers, lakes, etc; the warm, moist air rises because it is less dense; condensation occurs when water vapour is turned back into water droplets as it cools down. Clouds are formed; precipitation occurs as water droplets get bigger and heavier they begin to fall as rain, snow and sleet, etc.



2

Fluvial processes



Types of river erosion

3

Erosional landforms

Waterfalls and rapids are found in the upper course. These form when rivers flow over hard and soft rock. Vertical erosion wears away soft rock, forming rapids and waterfalls.

13

Birches Head Academy

Year 8 Geography LP4 Knowledge Organiser

4

Causes of floods

River flooding occurs when the river water rises so high it breaches the riverbank and overflows onto the land around it. It usually happens a couple of days after heavy rainfall. You might ask why flooding happens after and not during heavy rainfall. It's because it takes time for rainwater to flow downstream, via many small streams from higher ground, to join the main river below. Flooding occurs when the collective volume of water becomes too much for the river to hold.

The same thing happens when the snow melts on the tops of hills and mountains. The meltwater flows downhill, adding to the volume of water in the river system, which can lead to flooding downstream in the days that follow. Flood plains are areas of land around rivers where water can overspill at times of flooding.

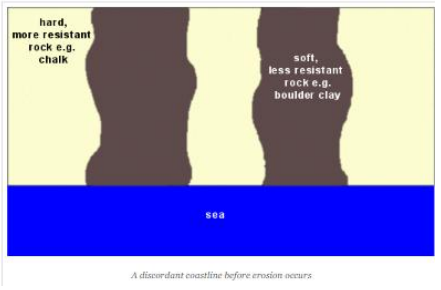
5

Why waves form

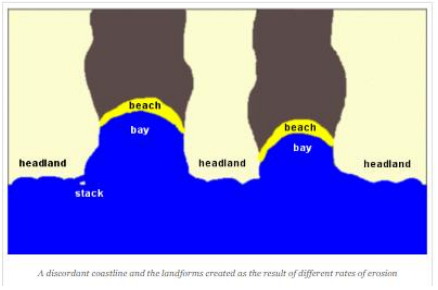
Waves are powered by the wind and tides are controlled by the gravitational pull between the moon and Earth.
The stretch of open water over which the wind blows is called the fetch.
Constructive waves have a powerful swash and a weaker backwash.
Destructive waves have a powerful backwash and a weaker swash

6

Bays and headlands

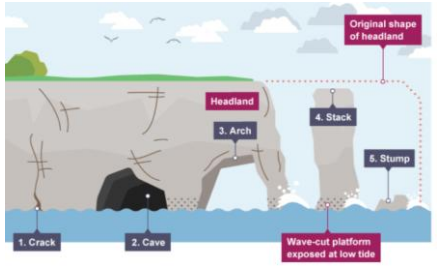


A discordant coastline before erosion occurs



A discordant coastline and the landforms created as the result of different rates of erosion


Selwicks Bay, Flamborough



7

Stacks and caves

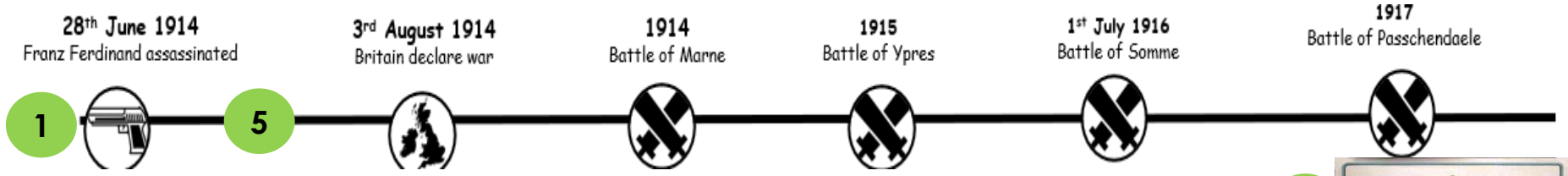
Caves, arches, stacks and stumps are erosional features that are commonly found on a headland.
1.Cracks are formed in the headland through the erosional processes of hydraulic action and abrasion.
2.As the waves continue to grind away at the crack, it begins to open up to form a cave.
3.The cave becomes larger and eventually breaks through the headland to form an arch.
4.The base of the arch continually becomes wider through further erosion, until its roof becomes too heavy and collapses into the sea. This leaves a stack (an isolated column of rock). An example of a Welsh stack can be found at Stack Rocks, Pembrokeshire.; the stack is undercut at the base until it collapses to form a stump.

14

Birches Head Academy

Year 8 History LP4 Knowledge Organiser

This Learning Programme you will be learning about the causes, main events and influences of World War One, the rationales, successes, failures and the social implications of war.



Keywords	
T2 Words for the world	
Alliance	A group of counties who promise to support and protect each other. Rival groups have rival alliances.
Arms race	Competition between countries to build weapons.
Militarism	The desire for a strong army and navy
Propaganda	Information spread to influence public opinion
Conscription	Government forcing men to join the army
Recruitment	Government trying to persuade people to join the army
Stalemate	Where neither side is winning nor can move forward.
Tactics	A carefully planned action to achieve a result.
Artillery	Large guns used to drop shells in warfare
T3 History specific words	
Entente	A friendly agreement between countries
Imperialism	Wanting an empire
Nationalism	Patriotic, believing your country is the best.
Trigger cause	A short-term action that starts an event
Short-term	An action that starts an event
Long-term	An action which contributes to starting an event over time
Shell shock	Post Traumatic Stress Disorder (PTSD)
No Man's Land	The area between trenches being fought over

2 Causes of WW1

Long-term

Militarism – building armed forces ready for war.

Alliances – promise to defend another country.

Imperialism – trying to build an empire.

Nationalism – thinking your country is better than others.

Short-term

Archduke Franz Ferdinand of Austria was assassinated in Sarajevo, Bosnia, by Serbian Gavrilo Princip. This triggered the alliance system, sparking WW1.

3

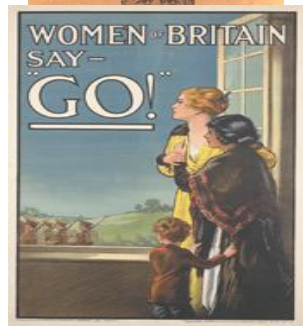
What is propaganda?

Propaganda is information that is spread to influence people's opinions or actions. It is often biased or exaggerated and is designed to make people think or behave in a certain way. Governments, organisations, and even individuals can use propaganda to persuade the public

During World War One, the British government used propaganda to keep people supporting the war. They created posters, films, speeches, and even stories in newspapers to:

- **Encourage men to join the army**, often by making them feel proud or guilty.
- **Make people hate the enemy**, sometimes by showing Germany as dangerous or cruel.
- **Persuade people at home to help the war effort**, such as saving food, working in factories, or buying war bonds.
- **Keep morale high**, so people wouldn't lose hope even when the war was going badly.

These messages were carefully designed to shape how people thought about the war and to make sure everyone felt they had a role in helping Britain win.



4 Life in the Trenches

Food
- Bread, jam and cheese
- 4500 calories a day
- Good food to keep up morale in the trenches

Trenches
- Muddy, cold, wet
- Zig-zag pattern to prevent explosions
- In the middle was 'no mans land'

Barbed wire
- Seven feet deep and six feet wide
- Completely impassable

Gas
- First gas attack was in Ypres, April 1915.
- The Germans released clouds of poisonous chlorine gas.

Animals
- Dogs – casualty dogs, sentry dogs
- Horses – carry ammunition and injured soldiers
- Pigeons – carry messages

Diseases

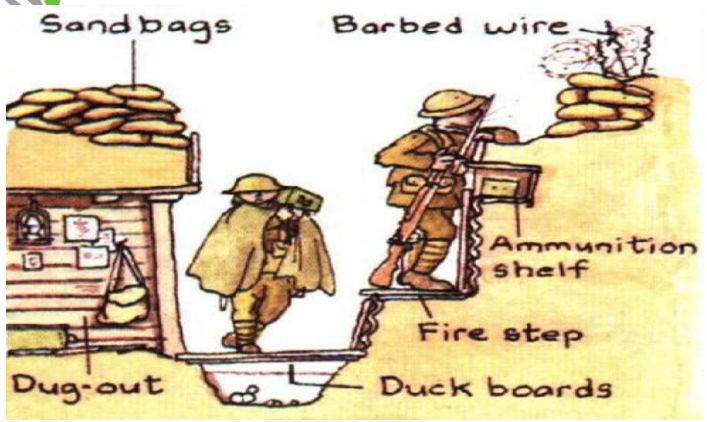
Trench foot
Lice
Diarrhoea
Sickness
Shell shock

15

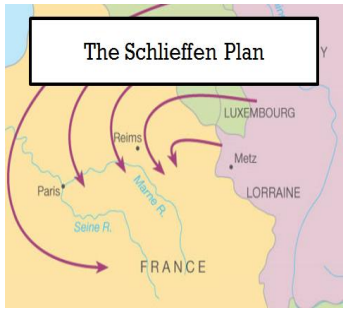
Birches Head Academy

Year 8 History LP4 Knowledge Organiser

Trench Cross-section



This was a plan for the Germany army to invade France and defeat them before going East to fight the Russians. They believed that Russia would be slow to mobilised their troops (get them ready for war) However, they were wrong. Russia mobilised quicker than the Germans had expected them to.



Timeline of 1914	
28th June	Archduke Franz Ferdinand, prince to the Austria-Hungary throne, is assassinated in Sarajevo by a Serbian named Gavrilo Princip
23rd July	Austria-Hungary demands Serbia pay for the assassination of Franz Ferdinand. Serbia does not meet these demands
28th July	Austria-Hungary declares war on Serbia. Russia begins mobilizing its troops.
1st August	Germany declares war on Russia
3rd August	Germany declares war on France as part of the Schlieffen Plan
4th August	Germany invades Belgium. Britain declares war on Germany.
23rd – 30th August	The Battle of Tannenberg is fought between Germany and Russia. The Germans defeat the Russian Second Army
5th – 12th September	The advancing German army is stopped before Paris by the British and French at the First Battle of the Marne. The Germans dig in and four years of trench warfare begins.

Battle of the Somme

6

Key facts

- By the River Somme in Northern France.
- 5 months along a 15-mile front.
- 60,000 British soldiers killed or injured on the first day.
- Germans used machine guns and artillery fire to annihilate the British troops.
- Some divisions suffer 90% casualties.
- Entire companies of soldiers wiped out.
- Not one objective captured.

Why did so many die?

- 7-day artillery attack by the British failed, 1/3 of the 1.7 million shells were duds.
- The Germans hid in their deep concrete trenches.
- Barbed wire was not cut and many soldiers got stuck.
- Most tanks broke down.
- General Haig said to keep going, regardless of thousands dying. He was not even on the front line!

7

Does Haig deserve to be called the 'butcher of the Somme'?	
Reasons FOR the nickname	Reasons AGAINST the nickname
The first day caused 57,000 British casualties, which many blame on Haig's decisions.	The Western Front was extremely difficult to break; any commander would have faced high casualties.
Haig used out-of-date tactics, like sending troops into machine-gun fire.	The Somme helped wear down the German army, weakening them for later battles.
He planned the battle far from the front lines, so some say he didn't understand real conditions.	Haig's tactics improved over time, and by 1918 the British played a major role in defeating Germany.

Birches Head Academy

Year 8 ICT LP4 Knowledge Organiser

This Learning Programme you will be learning about python programming

Key Vocabulary	
String	is a collection of characters (letters and/or numbers) inside quotation marks
Data	the collection of information which can take various forms, including text, numbers, images, audio, video, and more
Selection	the process of carefully choosing something from a group of options based on specific criteria.
Iteration	is the processing of repeating steps
Syntax error	an error in the spelling or grammar used when coding
Login system	security measure that verifies a user's identity before allowing them access to a computer, network, application, or website
Testing	to identify errors (bugs), verify that it meets requirements, and ensure it functions correctly before release

No	Code	Expected output
1	Name = "Bob" print("Hello", Name)	Hello Bob
2	Num = "10" print("The number is", Num)	The number is 10
3	Num1 = 10 Num2 = 5 Total = Num1+Num2 print("The number is", Total)	The number is 15.
4	Num1 = 10 Num2 = 6 Num3 = 2 Total = Num1+Num2+Num3 print("The number is", Total)	The number is 18.
5	Num1 = 10 Num2 = 6 Num3 = 2 Total = (Num1+Num2) - Num3 print("The number is", Total)	The number is 14.

No	Code	Expected output
1	Name = input ("Enter name") print("Hello", Name)	If you enter Fran then it will output Hello Fran.
2	Num1 = input("Enter first number") Num2 = input("Enter second number") Total = Num1+Num2 print("The number is", Total)	If Num1 is 3 and Num2 is 5 then it will output 35 because they're both strings.
3	Num1 = int(input("Enter first number")) Num2 = int(input("Enter second number")) Total = Num1+Num2 print("The number is", Total)	If Num1 is 3 and Num2 is 5 then it will now output 8 because they've been converted (casted) to integers.

Key terms:
Data is the collection of information which can take various forms, including text, numbers, images, audio, video, and more.

What does it mean to output data?
The process of retrieving or displaying data from a system.

How do you output data in programming?
In Python, the syntax used to represent output is the **print** function.

How will the data be outputted?
- The data will be outputted as a string.
- A **string** is a collection of characters (letters and/or numbers) inside quotation marks.

What does it mean to input data?
The process of entering or adding data into a system.

How do you input data in programming?
In Python, the syntax used to represent output is the **input** function.

How will the data be outputted?
- The data can be inputted using different data types.
- This lesson will focus on the input of strings and integers.

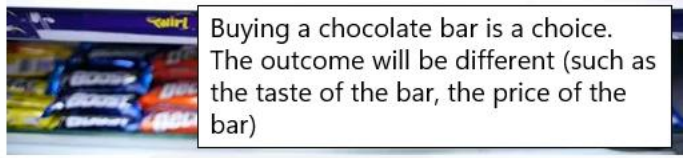
Birches Head Academy

Year 8 ICT LP4 Knowledge Organiser

How does selection work?
- A selection is a choice.
- Every choice has an outcome, which may not always be the same.

Real-life examples of a selection
- Picking an item of a restraint menu
- Picking which chair to sit on in a classroom.

How do you use selection in programming?
In Python, the syntax used to represent selection is known as an IF statement.



Buying a chocolate bar is a choice. The outcome will be different (such as the taste of the bar, the price of the bar)

No	Code	Explanation

1	• Num1 = 7
	• IF Num1 > 10:
	  • print(Num1, "is greater than 10")
	• ELSE:
	  • print(Num1, "is less than 10")
		If the value of Num1 is greater than 10, it will output Num1 is greater than 10, otherwise it will output less than 10.

2	• Num1 = 7
	• IF Num1 > 10:
	  • print(Num1, "is greater than 10")
	• ELIF Num1 < 10:
	  • print(Num1, "is less than 10")
	• ELSE:
	  • print(Num1, "is equal to 10")
		This is an extension to Number 2 and now uses ELIF so it can consider if the number is exactly 10.

3	• print("What is the capital city of France?")
	• print("A) London, B) Paris, C) Madrid")
	• answer = input ("Enter answer: ")
	• if answer == "A":
	  • print ("Incorrect")
	• elif answer == "B":
	  • print("Correct")
	• elif answer == "C":
	  • print("Incorrect")
	• else:
	  • print("Invalid entry")
		This is a sample of using multiple ELIF's in an IF statement. This is used when there are more than three outcomes.

Why are iteration used?
- To repeat actions that are the same.
- In the context of programming, it can lead to less lines of code being written.

Types of iteration
- Counter-controlled (FOR loop)
- Condition-controlled (WHILE loop)

How are the different types of iteration different?
- Counter-controlled will repeat a certain number of times.
- Condition-controlled will continue to repeat until a condition is met.

Client brief: Quiz-it!

- You have been recruited to help create a new app called Quiz-it!
- Your role is to create a set of multiple-choice quiz questions with answers that can be uploaded to the app database so they can be added by the app developer.
- They would like the app to include quizzes on niche (specific) topics as well as general knowledge to attract a wider audience.

Skills required
This will test your knowledge and understanding of the programming techniques you've learnt over the past few weeks.

No	Code	Explanation

	• import turtle
	• for x in range(4):
	  • turtle.forward(100)
	  • turtle.right(90)
		This will draw a square.

2	• import turtle
	• for x in range(3):
	  • turtle.forward(100)
	  • turtle.right(120)
		This will draw a triangle.

No	Code	Explanation

1	• import turtle
	• x = 0
	• while x < 5:
	  • turtle.forward(100)
	  • turtle.right(90)
	  • x = x + 1
		This will draw a square.

18

Birches Head Academy

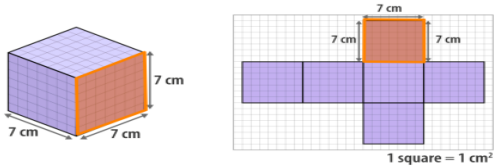
Year 8 Maths LP4 Knowledge Organiser

This LP I will learn about surface area and volume, linear graphs, transformations, angles.

face	The flat 2D surface that forms part of a 3D shape.
edge	A line segment that connects two vertices.
Vertex	The point where two or more edges meet.
axis	The coordinate plane is organized around two axes: the x-axis running horizontally, and the y-axis running vertically.
Reflection	A shape can be reflected across a line of reflection to create an image. The line of reflection is also called the mirror line.
transversal	A line that crosses at least two other lines.
Interior angle	An angle formed inside a polygon where two edges meet.

1 Surface Area

A cube and its net are shown below.



a) What is the area of one face of the cube?

area = 7 × 7
= 49 cm²

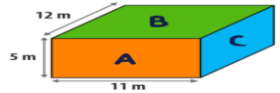
Answer: 49 cm²

b) What is the total surface area of the cube?

surface area = 6 × area of one face
= 6 × 49
= 294 cm²

Answer: 294 cm²

Work out the surface area of the cuboid.

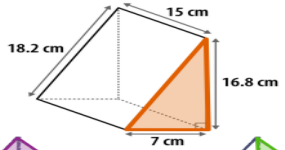


A: 11 × 5 = 55 m²
B: 11 × 12 = 132 m²
C: 12 × 5 = 60 m²

surface area = A ×2 + B ×2 + C ×2
= 55 × 2 + 132 × 2 + 60 × 2
= 110 + 264 + 120
= 494 m²

Answer: 494 m²

A triangular prism is shown below.
What is the total surface area of the prism?



area of triangular cross-section
= ½ × 7 × 16.8
= 58.8 cm²

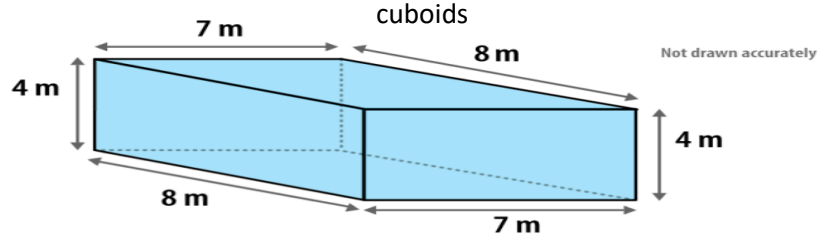
15 × 18.2 = 273 cm²
15 × 16.8 = 252 cm²
15 × 7 = 105 cm²

surface area = ×2 + + + +
= 58.8 × 2 + 273 + 252 + 105
= 747.6 cm²

Answer: 747.6 cm²

2 Volume of cubes and cuboids

Work out the volume of the cuboid below.
Remember to give the correct units.

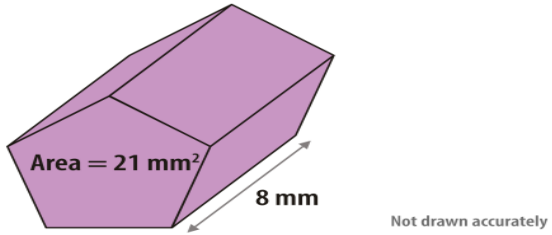


volume of cuboid = length × width × height
= 8 × 7 × 4
= 224 m³

Answer: 224 m³

3 Volume of a Prism

The prism below has a cross-sectional area of 21 mm² and a length of 8 mm.
Work out the volume of the prism.



volume of prism = area of cross-section × length
= 21 × 8
= 168 mm³

Answer: 168 mm³

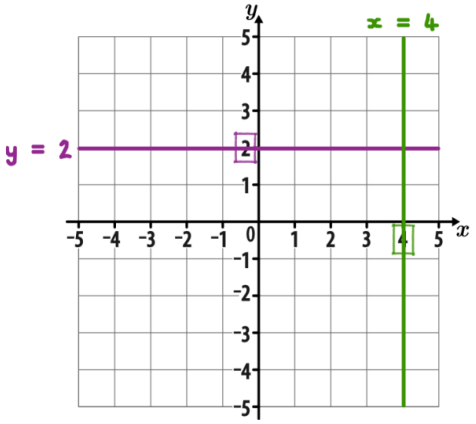
19

Birches Head Academy

Year 8 Maths LP4 Knowledge Organiser

4 Linear Graphs

Plot each of these lines.
a) $y = 2$
b) $x = 4$



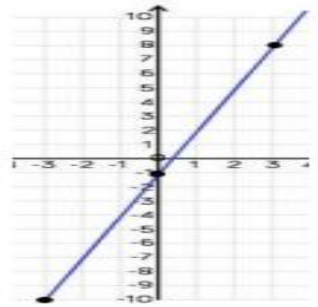
Plotting y = mx + c graphs (R)

$y = 3x - 1$ → 3 x the x coordinate then − 1

x	−3	0	3
y	−10	−1	8

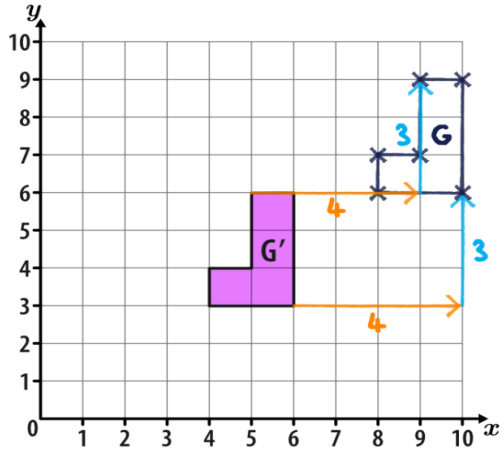
Draw a table to display this information

This represents a coordinate pair (−3, −10)

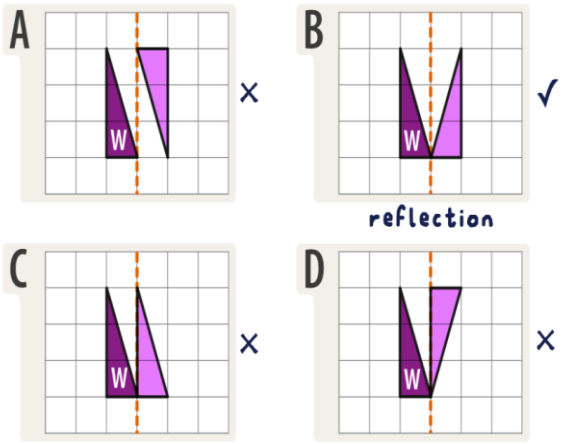


5 Transformations

Shape G′ is a translation of shape G by 4 units to the left and 3 units down. Plot shape G on the grid below.

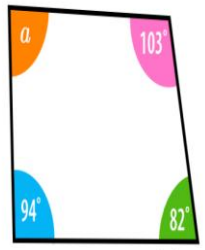


Which one of these options shows a reflection of shape W in the dashed line?



6 Angle Rules

What is the size of angle a?



Not drawn accurately

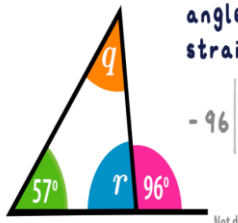
Angles in a quadrilateral sum to 360°

$a + 103 + 82 + 94 = 360$

$a + 279 = 360$ (−279)

$a = 81$ (−279)

Work out the values of angles q and r.



Not drawn accurately

angles which make a straight line sum to 180°

$r + 96 = 180$ (−96)

$r = 84$ (−96)

angles in a triangle sum to 180°

$q + r + 57 = 180$

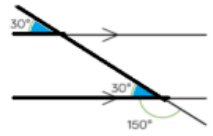
$q + 84 + 57 = 180$

$q + 141 = 180$ (−141)

$q = 39$ (−141)

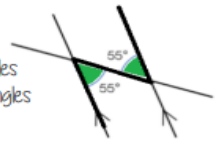
Answer: q = 39 ° r = 84

Alternate/ Corresponding angles

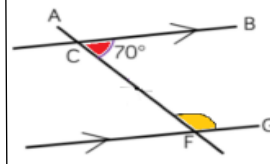


Because alternate angles are equal the highlighted angles are the same size

Because corresponding angles are equal the highlighted angles are the same size



Co-interior angles

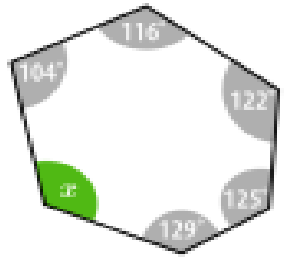


Because co-interior angles have a sum of 180° the highlighted angle is 110°

As angles on a line add up to 180° co-interior angles can also be calculated from applying alternate/ corresponding rules first

7 Angle in Polygons

Find the size of x.



sum of interior angles = 180 × (n−2)

6 sides, so n = 6

$= 180 \times (6-2)$

$= 180 \times 4$

$= 720$

$x + 104 + 116 + 122 + 125 + 129 = 720$

$x + 596 = 720$ (−596)

$x = 124$ (−596)

Answer: 124

20

Birches Head Academy

Year 8 Spanish LP4 Knowledge Organiser

This Learning Programme you will be learning how to talk about what you don in your free time on your phone, what music you like to listen to and what TV shows you like.

Key Vocabulary	
Noun	A word to identify a person, place or thing
Verb	A word to show an action taking place
Adjective	A word that describes a noun
Infinitive verb	A verb that tells you the action, but not who is doing it
Present tense	Referring to an action happening now, or that happens regularly
Preterite tense	Referring to an action that has been completed in the past
Near future tense	Used to talk about what is 'going to' happen
Conjugate	To change a verbs form to indicate a tense or person
Querer	To want
Reflexive verb	Talk about actions you do to yourself

LP4.1 – ¿Te gustaría ir al cine? – Would you like to go to the cinema?

¿Te gustaría ir al cine?	Would you like to go to the cinema?
¿Te gustaría ir...?	Would you like to go...?
a la bolera	to the bowling alley
a la cafetería	to the café
al centro comercial	to the shopping centre
al museo	to the museum
al parque	to the park
a la pista de hielo	to the ice rink
al polideportivo	to the sports centre
¿Te gustaría venir a mi casa?	Would you like to come to my house?

Reacciones	Reactions
De acuerdo.	All right.
Vale.	OK.
Muy bien.	Very good.
¡Genial!	Great!
Sí, me gustaría mucho.	Yes, I'd like that very much.
¡Ni hablar!	No way!
¡Ni en sueños!	Not a chance!/Not in your wildest dreams!
No tengo ganas.	I don't feel like (it).
¡Qué aburrido!	How boring!

¿Dónde quedamos?	Where do we meet up?
al lado de la bolera	next to the bowling alley
delante de la cafetería	in front of the café
detrás del centro comercial	behind the shopping centre
enfrente del polideportivo	opposite the sports centre
en tu casa	at your house

¿A qué hora?	At what time?
a las...	at...
seis	six o'clock
seis y cuarto	quarter past six
seis y media	half past six
siete menos cuarto	quarter to seven
siete menos diez	ten to seven

LP4.2 – Lo siento, no puedo – I'm sorry, I can't

Lo siento, no puedo	I'm sorry, I can't
¿Quieres salir?	Do you want to go out?
Tengo que...	I have to...
cuidar a mi hermano	look after my brother
hacer los deberes	do my homework
lavarme el pelo	wash my hair
ordenar mi dormitorio	tidy my room
pasear al perro	walk the dog
salir con mis padres	go out with my parents
No quiero.	I don't want to.
No tengo dinero.	I don't have any money.
No puede salir.	He/She can't go out.

LP4.3 – ¿Cómo te preparas? – How do you get ready?

¿Cómo te preparas?	How do you get ready?
¿Cómo te preparas cuando sales de fiesta?	How do you get ready when you go to a party?
Me baño.	I have a bath.
Me ducho.	I have a shower.
Me lavo la cara.	I wash my face.
Me lavo los dientes.	I brush my teeth.
Me visto.	I get dressed.
Me maquillo.	I put on make-up.
Me peino.	I comb my hair.
Me aliso el pelo.	I straighten my hair.
Me pongo gomina.	I put gel on my hair.

Birches Head Academy

Year 8 Spanish LP4 Knowledge Organiser

LP4.4 - ¿Qué vas a llevar? – What are you going to wear?

¿Qué vas a llevar?	What are you going to wear?
¿Qué llevas normalmente los fines de semana?	What do you normally wear at weekends?
Normalmente los fines de semana llevo…	At weekends I normally wear…
una camisa	a shirt
una camiseta	a T-shirt
un jersey	a jumper
una sudadera	a sweatshirt
una falda	a skirt
un vestido	a dress
una gorra	a cap
unos pantalones	some trousers
unos vaqueros	some jeans
unas botas	some boots
unos zapatos	some shoes
unas zapatillas de deporte	some trainers
¿Vas a salir esta noche?	Are you going to go out tonight?
Voy a ir al/a la…	I am going to go to the…
Voy a llevar…	I'm going to wear…

Los colores	Colours		
amarillo/a	yellow	naranja	orange
azul	blue	negro/a	black
blanco/a	white	rojo/a	red
gris	grey	rosa	pink
marrón	brown	verde	green
morado/a	purple	de muchos colores	multi-coloured

LP4.5 – Hoy Partido – Match today!

Gramática

Different types of verbs work like this in the 'I' form in the present, preterite and near future.
Train yourself to spot verbs in different tenses:

	infinitive	present	preterite	near future
regular verbs	llevar comer vivir	llevo como vivo	llevé comí viví	voy a llevar voy a comer voy a vivir
stem-changing verbs	jugar	juego	jugué	voy a jugar
irregular verbs	hacer ir ver ser	hago voy veo soy (es → it is)	hice fui vi fui (fue → it was)	voy a hacer voy a ir voy a ver voy a ser (va a ser → it is going to be)

LP4.6 – El baile de disfraces – fancy dress

SKILLS

Changing adjective endings

Adjectives are always listed in the masculine singular form in a dictionary. If you look up 'gorgeous', you find **precioso**.

But you may need to change the adjective ending. For example, if you want to say 'a gorgeous skirt', you need to say **una falda preciosa**, as **falda** is feminine. With other nouns, you might need a plural ending.

LP4.7 – Repaso – revision

Use the other boxes within the knowledge organiser to revise your vocabulary

Birches Head Academy

Year 8 Music LP4 Knowledge Organiser

This Learning Programme you will be learning about **Protest Songs**

Key Vocabulary	
Protest	A statement or action expressing disapproval of or objection to something:
Lyric	The words of a song.
Theme	The main idea or message of the song
Chord	Two or more notes played together
Apartheid	A system of racial segregation in South Africa (1948–1994
Lynching	The illegal killing—often by hanging—of Black people in the USA
Miscarriage of Justice	When someone is wrongly convicted or treated unfairly by the legal system
Racism	Discrimination or prejudice against people based on race.
Rhythm	A pattern of notes of different lengths
Tempo	The speed of a piece of music. How fast or slow

1

What is a Protest song ?
A song written to show disagreement with injustice or unfair treatment, aiming to raise awareness and encourage change. Protest songs are a form of peaceful protest. Musicians like Bob Dylan, Billie Holiday and even Green Day have all written famous protest songs to raise awareness of different causes or fight unjust social/political agendas .

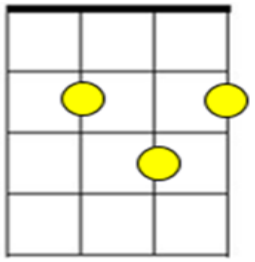
2

Why do we have protest songs ?
Protest songs are a way of setting the feeling of the protest to music. They can also be used as a way of condensing an idea into a memorable form. Some protest songs really echo the feeling of the issue in the style of the music. For example, some songs are very peaceful, others loud and energetic, some have a sad sound, and some are quite catchy.

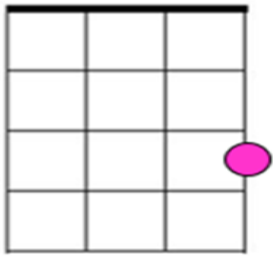
Nelson Mandela
Nelson Mandela was a South African anti-apartheid leader who became the country's first Black president in 1994, guiding the transition from apartheid to multiracial democracy. He is widely celebrated for his lifelong fight for equality, his 27 years in prison, and his commitment to reconciliation after his release

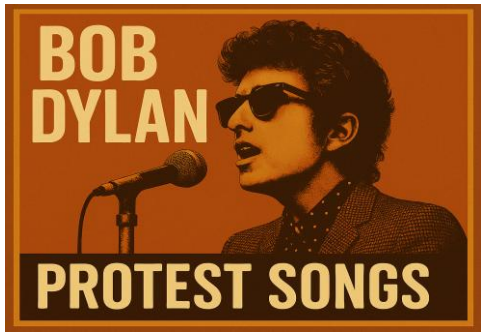
3

Bob Dylan is an American singer-songwriter who began his career writing songs and, controversially, transitioned to rock music later on in his career.
He came to prominence in the 1960s when he released songs such as *Blowin' in the Wind* and *The Times They Are a-Changin*. These songs were sung by the and anti-war movements of the 1960s.



Ukelele Chords for *Mandela* (Bring Him Back Home) By Hugh Masekela





Birches Head Academy

Year 8 Music LP4 Knowledge Organiser

4

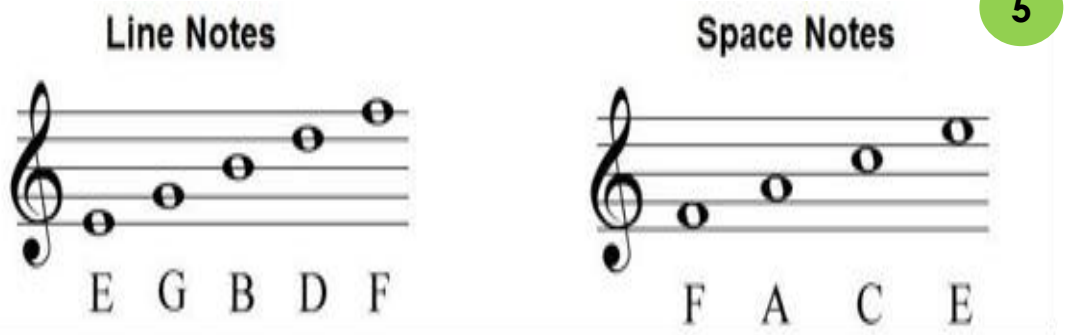
Here are some things that people protest about:

- Animal rights
- Environmental rights
- Women's rigts
- Civil rights
- Black Lives Matter

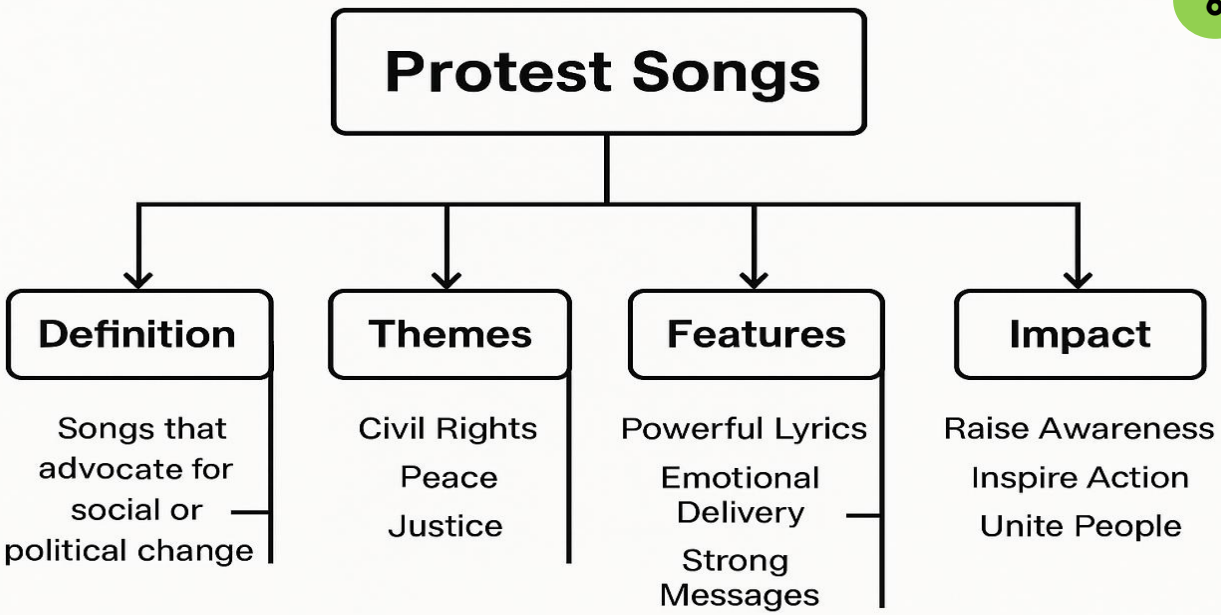
And lots of other things too...

- Anti-War protests
- The rights of refugees and immigrants
- Disabled rights
- Religious rights
- LGBTQ+ rights

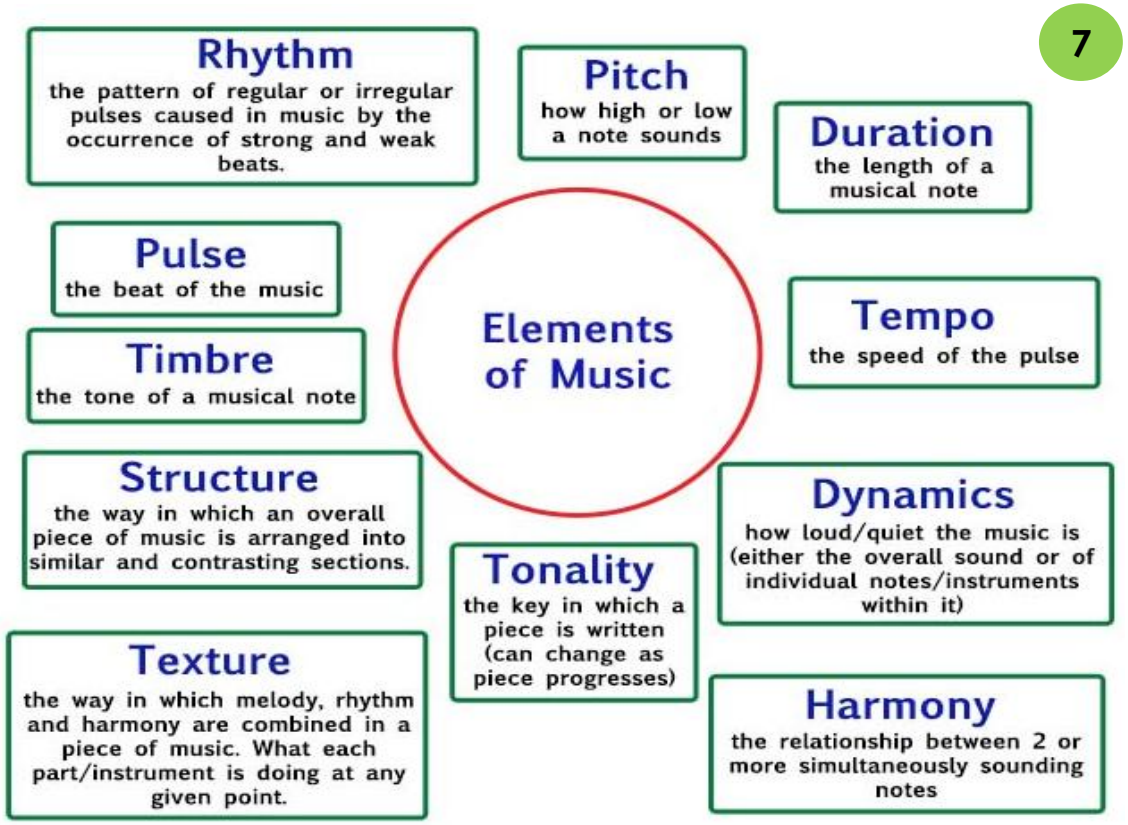
5



6



7



Birches Head Academy

Year 8 PE LP4 Knowledge Organiser – Athletics

This Learning Programme you will be developing your athletic abilities by learning how to perform at maximum levels and how accurately replicate techniques and skills in a range of different events.

Key Vocabulary	
Flexibility	Flexibility is the ability to move muscles and joints through a full normal range of motion.
Endurance	Endurance in sports refers to the ability to sustain prolonged physical activity without getting exhausted.
Skill	A skill is the combined ability and knowledge which allow you to complete a task to a high standard.
Suppleness	Suppleness means being able to bend and move parts of the body easily.
Coordination	Coordination is moving two or more body parts simultaneously.
Agility	Agility is changing direction at speed
Speed	Speed is to move quickly across the ground or move limbs rapidly to grab or throw.
Reaction Time	Reaction time is the length of time taken for a person to respond to a given stimulus.
Power	Power is the ability to exert maximum force as quickly as possible.
Strength	Strength is the ability to produce as much force as possible in a single movement.
Stamina	Stamina in sport is the ability to exercise for a prolonged period.
Flexibility	Flexibility is the ability to move muscles and joints through a full normal range of motion.

1. Students will know how to investigate what they will be learning this learning programme and how they will be assessed. This will include, components of fitness and athletics events.

2. Students will examine how the body responds and adapts to long distance endurance events. Thet will also know how to effectively demonstrate correct technique for 1500m, 800m and 400m events. Finally, students will examine how the body responds and adapts to short distance speed events.

3. Students will know how to compare and contrast techniques and tactics used by elite relay teams. Students will know how to effectively demonstrate correct starting technique in the 100m and 200m events. Finally, they will examine the difference between standing shot and glide shot.

Birches Head Academy

Year 8 PE LP3 Knowledge Organiser – Athletics

4	Students will know how to explain the correct safety techniques for shot put and effectively demonstrate correct glide technique. Finally, students will examine the difference between standing and run-up javelin throws.
5	Students will explain the correct safety techniques for javelin event and effectively demonstrate correct run-up technique for javelin. Finally, students will evaluate how the body responds to endurance and speed based athletic events.
6	Students will be able to review their own performance in three athletics events and suggest valid recommendations to improve performance in two athletic events. Finally, students will examine the importance of the power chain and posture in a discus throw.
7	Students will explain the correct safety techniques and equipment for discus events and effectively demonstrate correct posture in a discus throw. Finally, students will accurately replicate techniques for three field and track events.

Birches Head Academy

Year 8 RE LP4 Knowledge Organiser

You will learn what prejudice and discrimination are, look at examples of these in the world today and begin to discuss religious teachings in response to these, as well as how we can work together to achieve social justice.

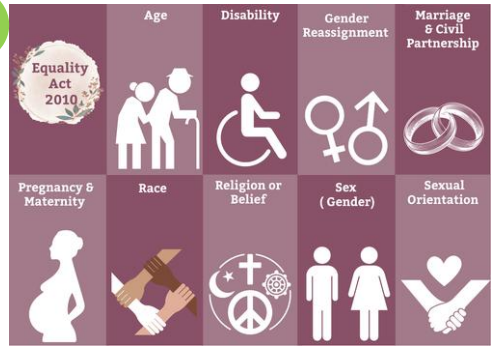
Key Vocabulary	
Prejudice	Judging somebody before you know them, usually negatively (it is a belief).
Discrimination	Treating people differently (usually negatively) due to prejudices you may hold (this is an action).
Stereotype	A widely held but fixed and oversimplified image or idea about a person, e.g. person wearing a tracksuit, hood up, shoulder bag on can be seen to be a "roadman" or "chav".
Racism	Discrimination on the basis of race/ethnicity.
Equality	The state of being equal, especially in status, rights and opportunities.
Hate crime	A crime, usually violent, that is motivated by prejudice on the basis of ethnicity, race, religion or similar grounds.
Social injustice	Having a lack of fairness in society.

2

Various elements of equal rights have been incorporated into legislation since the 1970's, such as the Sex Discrimination Act (1975) and the Equal Pay Act (1970).
Since then, the government has acknowledged that there are several more characteristics that should be protected and now all of these protected characteristics and how they are protected are written into the Equality Act (2010).
Human Rights have been codified since 1998, in line with the European Convention on Human Rights, in the **Human Rights Act**. All humans should have these rights, such as the right to life, the right to vote, the right to free speech, the right to practice religion, from birth.
Hate crimes focused on race and religion have been against the law since the Crime and Disorder Act (1998). The Criminal Justice Act (2003) included hate crimes related to gender identity, sexual orientation and disability.

3

Inequal rights around the world
Rights are often overlooked by people in power and can be ignored at the expense of others – usually minority groups in society.
One example of this inequality is the persecution of Jewish people during WWII – they were targeted because of their religion – a human right that all people should be able to practice a religion of their choice.
Another example of inequal rights is women not having the right to vote – something only achieved in the UK in 1928.



4

The Right to Education
Ensuring girls access to quality education helps to respect and enforce their rights. Educated girls acquire life skills and competencies so they can be active and committed citizens, defend their rights, choose a job, be financially independent and take better care of themselves. Unfortunately, not all areas of the world respect this right.
Malala Yousafzai is an example of one person who has fought for girls to have a right to education. She stood up for her right to education but was shot by the Taliban. Amazingly, she survived the attack and went on to study at degree level and even won a Nobel Peace Prize!

Birches Head Academy

Year 8 RE LP4 Knowledge Organiser

5

The murder of Sophie Lancaster

The victim, Sophie Lancaster and her boyfriend were attacked by a group of teenage boys while walking through Stubbylee Park on 11 August 2007. As a result of the severe head injuries Lancaster sustained in the attack, she went into a coma from which she never regained consciousness and died of her injuries thirteen days later. Her boyfriend, Robert, managed to survive the attach as Sophie had tried her best to protect his head during the attack. This is an example of a **hate crime**, as the young couple were targeted due to their physical appearance.

Some **charities** work to end social injustice. One such charity is Christian Aid who aim to stop poverty and injustice worldwide. They work to promote human rights and help people to understand what they are, ensure that people are not discriminated against for any reason and help people to make the most of their opportunities, such as by helping them to secure a fair price for crops/products that they may sell. Another charity working to protect human rights is Amnesty International. They work to promote awareness and secure rights for people in all areas of the world, particularly those who live in areas known to disregard human rights and treat civilians poorly.

christian aid

AMNESTY INTERNATIONAL

7

Morality is our idea of right and wrong. When we talk about morality, there are two types – absolute morality and relative morality.

Absolute morality is unchanging – we stick to the idea in every situation. People who stick to this type of morality always keep the **same** attitude to something, even when it seems wrong or foolish. For example, the law says it is wrong to steal, so if a person steals food to feed themselves and they are starving, it would still be believed to be a wrong action.

Relative morality is changeable morality. The decision is based upon the situation, in other words, 'it depends…' New information may mean that a normally wrong action may be accepted as per the situation. So, in the case of the thief who is starving, a person who follows relative morality may seek to help him, rather than punish him severely.

6

28

Birches Head Academy

Year 8 Science LP4 Knowledge Organiser

This Learning Programme you will be learning about chemical reactions between metals and non-metals in addition to understanding circuits.

Key Vocabulary	
Molecule	A molecule is where two or more atoms are chemically bonded together.
Oxidation	A reaction in which substances combines with oxygen resulting in the formation of an oxide.
Salt	A chemical compound formed from the reaction of an acid with a base.
Displacement	A type of chemical reaction where one element replaces another within a compound.
Current	The flow of electrical charge (Amps).
Potential difference	The difference in electrical potential between two points also known as voltage.
Resistance	Resistance is measured in Ohms and represents a measure of opposition to the flow of electric current.

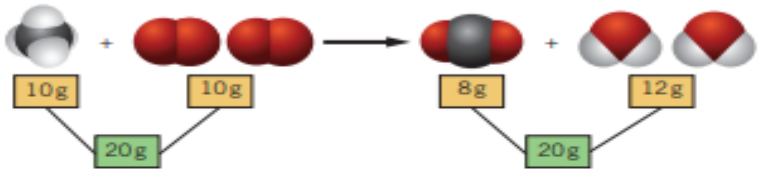
1 Chemical reactions

- Word equations can represent a **chemical reaction:**

- The **reactants** are on the left side of the arrow and the **products** are on the right side of the arrow
- We use an arrow instead of an equals sign as it represents that the reactants are changing into a new substance
- In a reaction, the amount of each type of atom stays the same, however they are rearranged to form a new product

3 Conservation of mass

- In a reaction the mass will be **conserved**, this means that the total mass of the reactants will be equal to the total mass of the products
- If it appears that some of the mass has been lost, this means that a gas has been produced and escaped, accounting for the lost mass



Balanced symbol equations show the amounts of all of the individual atoms in a reaction

- The symbols used are from the Periodic Table
- They also show:
  - Formulae of reactants and products
  - How the atoms are rearranged
  - Relative amounts of reactants and products

$$2H_2 + O_2 \rightarrow 2H_2O$$

2 Metal reactions

When a metal reacts with an acid it will produce a salt and hydrogen gas, the fizzing that you see is the hydrogen gas being given off

metal + acid → salt + hydrogen

magnesium + hydrochloric acid → magnesium chloride + hydrogen

When a metal reacts with oxygen a metal **oxide** is formed, this process is known as **oxidation**

metal + oxygen → metal oxide

aluminum + oxygen → aluminum oxide

- When a metal reacts with water it forms a metal **hydroxide** and hydrogen gas.
- The alkali (group 1) metals react most vigorously, giving off a brightly coloured flame

metal + water → metal hydroxide + hydrogen

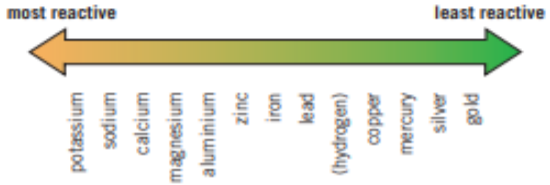
sodium + water → sodium hydroxide + hydrogen

When a more reactive metal reacts with a compound containing a less reactive metal, it can take it's place, this is known as a **displacement** reaction

- If the metal on it's own is higher in the **reactivity series** than the metal in the compound a reaction will take place
- If the metal on it's own is lower in the reactivity series than the metal in the compound, a reaction will not take place

4 The reactivity series

- The **reactivity series** describes how reactive different metals are compared to one another
- The higher the metal is in the reactivity series the more reactive it will be this means that it will react much more vigorously

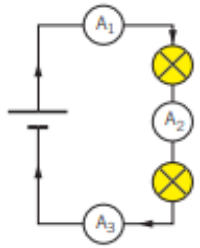


Birches Head Academy

Year 8 Science LP4 Knowledge Organiser

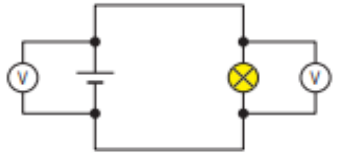
5 Current

- **Current** is the amount of **charge** flowing per second
- The charges that flow in a circuit are **electrons**, they are negatively charged
- **Electrons** leave the negative end of the **cell** and travel around the circuit to the positive end of the cell
- Current has the unit of Amps (A) and is measured with an **ammeter** (which is placed in series or in the main circuit)



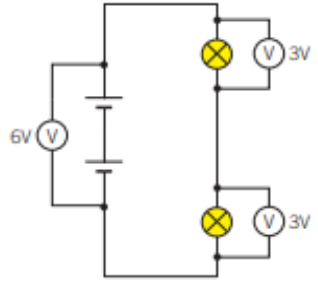
Potential difference

- **Potential difference** is the amount of energy transferred by the cell or **battery** to the charges
- The value of potential difference tells us about the force applied to each charge and then the energy transferred by each charge to the component which it passes through
- Potential difference has the unit of volts (V) and is measured with a **voltmeter** (which is placed in parallel to the circuit)



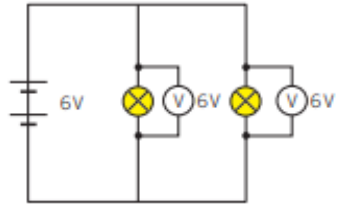
6 Series circuits

- **Series** circuits only have one loop
- If one component breaks, the whole circuit stops working
- Current is the same everywhere in a series circuit
- The total potential difference from the battery is shared between the components in a series circuit
- Adding more bulbs decreases the brightness of the bulbs



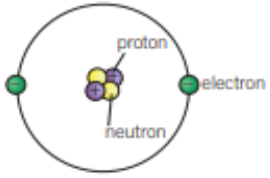
Parallel circuits

- **Parallel** circuits have more than one loop
- If one component breaks, the rest of the circuit will still work
- Current is shared between the different loops in the circuit
- The potential difference is the same everywhere in the circuit
- Adding more bulbs does not affect the brightness of the bulbs



7 The atom

- The **atom** consists of a central nucleus with electrons orbiting around the outside in shells
- **Electrons** have a negative charged
- **Protons** are inside the nucleus and have a positive charge
- **Neutrons** are inside the nucleus and have a neutral charge



Static electricity

- Static electricity is the caused by the rubbing together of two **insulators**
- This causes electrons to be transferred, leaving one object with a positive charge, and one object with a negative charge

- Like charges will **repel**, opposite charges will **attract**

7 Resistance

- **Resistance** is a measure of how easy or how hard it is for charges to pass through a component in a circuit
- Resistance has the unit of ohms (Ω)
- Resistance is calculate by measuring potential difference and current and using the following equation:

$$\text{resistance } (\Omega) = \frac{\text{potential difference (V)}}{\text{current (A)}}$$

- Materials with a high resistance are said to be **insulators**
- Materials with a low resistance are said to be **conductors**

Y8 LP4 Technology Knowledge Organiser – Product Design - Bauhaus & Memphis: Cardboard prototypes

30

This Learning Programme you will be learning about Bauhaus & Memphis and applying your knowledge to create a final piece.

1. Practical – clocks
2. Evaluate techniques
3. Compare practical to design brief
4. Use ACCESS FM efficiently



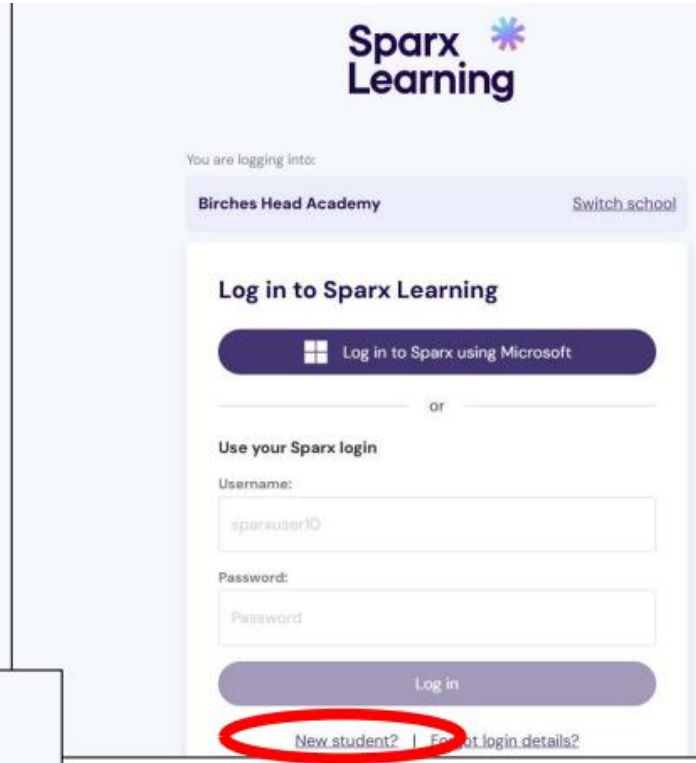

Keyword	Definition
Evaluate	To judge how successful a piece of work is and explain what works well and what could be improved.
ACCESS FM	**A Design & Technology tool used to help analyse or design a product. It stands for: Aesthetics, Cost, Customer, Environment, Safety, Size, Function, Materials.**
Textiles	**Materials made from fibres — such as fabric, thread, felt, or yarn — used for sewing, weaving, or fabric-based projects.**
Design Brief	**A short statement that explains what needs to be designed, who it is for, and what it must do.**
Evaluation	A written summary of how well a product or piece of work meets its purpose, including strengths and improvements.
Iteration	**Making repeated versions of a design, improving it each time based on testing, feedback, or reflection.**

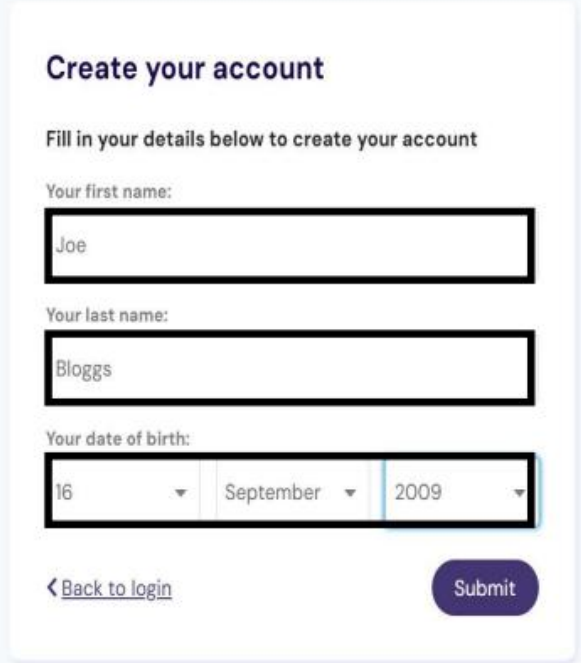
Design Brief:
To create an analogue clock, using the Bauhaus and Memphis style. It is to be aimed at your age group +.
You will be able to explore 2D and 3D design practices and create your design using acrylic plastic.

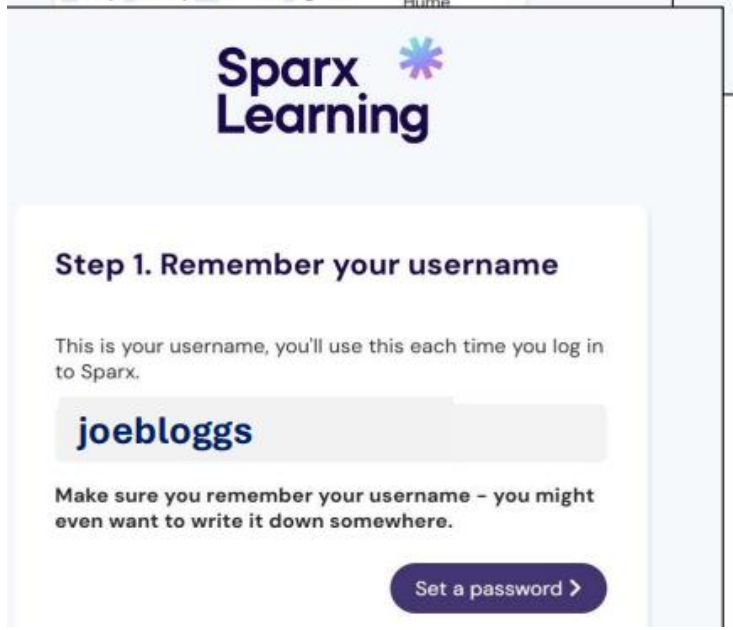


Birches Head Academy

SPARX INSTRUCTIONS







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 facing who you are speaking to?

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?

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?

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

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

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

'Could you provide an example'

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

'The main points raised today were...'