Knowledge Organiser

Year 10

Cycle 3

CORE SUBJECTS

Name:

Tutor Group:

What is a Knowledge Organiser and why are they important?

A knowledge organiser is designed to summarise the key information, concepts, and vocabulary for a specific topic or unit of work in each subject. Its purpose is to help students:

- o Understand what they are expected to learn.
- o Make connections between ideas.
- o Retain and recall essential knowledge more effectively.
- o Support independent study and revision

Your Knowledge Organiser contains the essential knowledge that we expect every student to know. Regular use of the Knowledge Organiser helps you to recap, revise and revisit what you have learnt in lessons. This can be part of your homework in some subjects or as independent revision The aim is to help remember this knowledge in the long term and to help strengthen your memory.

Each cycle there is an assessment in every subject and you will be assessed on the knowledge from your Knowledge Organiser; the more you revisit information the more likely it will be remembered for lessons, assessments and exams.

How we learn anything

We learn by focusing our attention on something. If we are distracted by other things in our environment (eg mobile phones, listening to music) it will affect how much/what we learn.

Information we pay attention to goes into our working memory, but our working memory is not very good and we quickly and easily forget things.

Learning happens when we think about, process or practise doing something so that it is stored in our long-term memory. Even then it can still be forgotten if we do not regularly think about it and go over it. *We remember what we think about*. Using your Knowledge Organiser outside of lessons helps you to remember things in the long-term.
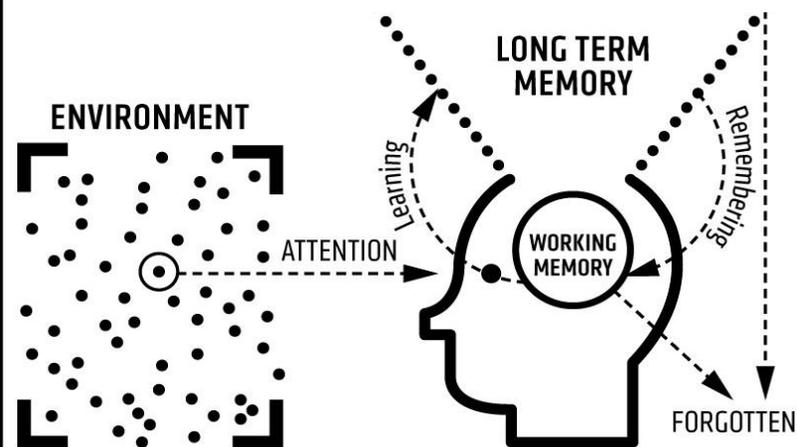
Homework in Year 10-11

The purpose of homework

Homework plays a crucial role in reinforcing what you learn in the classroom, helping you to develop a deeper understanding of the material. It encourages independent learning, time management, and responsibility: skills that are essential for success both in school and in life.

Homework fosters a strong work ethic and a sense of discipline, preparing you for future academic and professional challenges. Homework is not just about completing tasks, it is about building lifelong learning habits. Learning is defined as a change in the long-term memory. You attend 5 hours of lessons per day, which is a lot of new information being taken in. Without additional opportunities to practise remembering, much of that information would be quickly forgotten.

Homework expectations

In Years 10-11 we expect every student to complete around 1 hour of homework a day, 5 days a week. English, Maths and Science will set around 1 per week each and the other GCSE subjects will be around 30 minutes each using the following timetable:

	Monday	Tuesday	Wednesday	Thursday	Friday
Subject 1	Science	Geog/History	Maths	Option Block F	Maths
Subject 2	English	Option Block E	English	Science	Option Block G

Maths and Science homework will be completed on Sparx. All other subjects may be a mixture of Seneca, Knowledge Organiser work and worksheets/tasks. Homework will be recorded on Class Charts to help students and parents keep track of what to do.

Year 10 Core Cycle 3
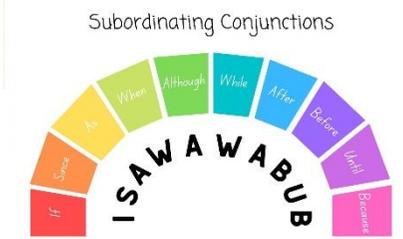
Knowledge Organiser Contents Page

Start with Week 1. Each week, complete the colour block. Write each word out 3 times and each definition once. Check it all with a purple pen. Tick what is correct, fix what is wrong. Then complete the weekly SPaG (spelling, punctuation and grammar) task.

Coombeshead Academy *Inspiring Excellence*   English Learning Area

wk	keyword	definition	example		
Week 1	Context	The wider circumstances in which something exists.	Taking a comment out of context can impact its true meaning.	**Week 1**	**Week 1 SPaG task**
	Viewpoint	A person's opinion or point of view.	From her viewpoint, the movie was enjoyable.		For each of the following sentences, identify the main clause and the subordinate clause.
	Perspective	The background factors which impact a person's viewpoint.	From a teacher's perspective, homework is beneficial.		1. Outside the window, rain began to fall.
	Reasoning	Thinking about something in a logical, sensible way.	What is the reasoning behind your behaviour?		2. He shared his sweets with his friend as it was their birthday. 3. She went to bed after brushing her teeth. 4. Before going home, Ben went to the park. 5. After we went to the cinema, we went out for dinner.
	Non-fiction	Informative writing based on true events.	My favourite type of non-fiction text is sports articles.		Subordinate clauses begin with subordinating conjunctions. Use this to help you!

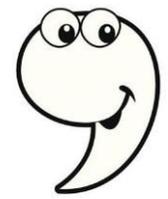|					**Week 2 SPaG task**
Week2	Summary	The main points of something.	Give me a summary of your school day.	**Week2**	Apostrophes are used to show omission (when words are contracted and letters removed e.g. do not becomes don't) or possession (to show when something belongs to someone). Put apostrophes in the correct places in the sentences below.
	Inference	Using evidence to 'figure out' what is being said.	He inferred she'd had a good day from the smile on her face.		
	Statement	A definite or clear expression of something in speech or writing	What statement is your writing making?		1. My dogs new toy is broken already!
	Compare	To note the similarity or dissimilarity between things.	He compared his homework to his friend's, which was far better.		2. I cant wait to go to the park later.

	Implicit	When something is suggested, not directly expressed.	The implicit negativity between the friends made him uncomfortable.			3. Its over there. 4. Dans haircut looks really cool. 5. Im excited to go to my friends house.

Week 3	Analyse	Examine how a writer uses language and structure to create a particular effect.	After analysing the text, I learnt how the narrator feels.		**Week 3**	**Week 3 SPaG Task** A comma splice is when two sentences are incorrectly joined by a comma. The below passage contains 3 comma splices. Identify them and correct the commas into the required punctuation marks. At the weekend I went out with my family, we went to the zoo. We saw monkeys, crocodiles and lots of insects, they were all so interesting to see and learn about. However my favourite animal was the elephant, he was so majestic and intelligent.
	Effect	How the reader thinks/feels as a result of the writer's use of language or structure.	The effect of the simile is a sense of comfort.			
	Methods	The things a writer purposely uses to achieve a particular effect.	The writer uses methods such as metaphors in their story.			
	Explicit	Something stated clearly, leaving no room for confusion or doubt.	She made her feelings explicit by shouting.			
	Opinion	A judgement made about something.	What is your opinion on the latest Netflix series?			

"He's in a comma."

Week 4	Critically	To analyse the merits and faults of a piece of work.	She thought critically about his offer.
	Evaluate	To assess something, such as its effectiveness.	After evaluating the evidence, he deemed it unnecessary.
	Examine	Inspect something thoroughly.	Examination allowed them to figure out what was wrong with the animal.
	Explore	Discuss in detail.	He explored the writer's use of repetition in the text.
	Describe	Give a detailed account of.	The writer describes his characters in full detail.

Week 4 SPaG Task

Correct the spelling errors in the following words.

1. proberly

2. allways

3. beutiful

4. intresting

5. definately

6. permenently

7. diffrent

8. wierd

9. suprise

10. seperate

Week 5			
	Perceptive	Showing insight.	He was very perceptive to his friend's moods.
	Cohesion	Forming a united whole.	The conclusion of the story added to the cohesion of it.
	Coherent	Logical and consistent.	Her argument on why the legal driving age should be made higher was very coherent.
	Structure	The arrangement of ideas within a text.	The structure of the text emphasises the tension within it.
	Influence	To be able to have an effect on something.	His writing to the local council helped influence their decision.

Week 5

Week 5 SPaG Task

Identify the word classes of the highlighted words in the sentences below.

1. He **quickly** ran to the bus stop; he didn't want to miss the bus.
2. The wind **rattled** the old shutters.
3. The classroom was missing some **tables** and **chairs**.
4. I played football **yesterday**.
5. I don't like eating sweets; they are too **sugary**.

Verbs	Nouns	Adjectives	Adverbs
A word that describes what a person or thing does, such as: run, hit, rain, be, seem, become, grow	A word that identifies a person, place thing idea or quality, such as: woman, dog, building, London, truth, birth	A word that describes a noun, such as: red, bad, giant, hairy, shy	A word that gives more information about a verb adjective or another adverb, such as: lazily, easily, abroad, very

Week 6			
	Tone	The mood of the text.	The language choices made by the writer created a serious tone.
	Semantic field	A group of words related by their meanings.	The words "blood", "battle" and "bullets" form a semantic field of war.
	List	Connected items written consecutively.	The writer used a list to give the impression that they had a long day.
	Alliteration	Words beginning with the same letter or letter sound close together in a text.	Alliteration of the 'b' sound creates a powerful, aggressive sound.
	Repetition	Purposely repeating a word or phrase for effect.	Repetition of the word 'unfair' made her point clear.

Week 6

Week 6 SPaG Task

Add in the correct homophone into these sentences – there, their or they're.

1. _____ was no one else at the bus stop this morning.
2. _____ new shoes are really cool.
3. _____ going to visit their grandparent's this weekend.
4. _____ was no one at _____ house when I knocked earlier.
5. _____ going to regret not coming out with us; we had so much fun.

weak   week

Week 7	Extended metaphor	A metaphor that is introduced then further developed throughout the text.	The extended metaphor of the sea being compared to an angry dog was effective.
	Juxtaposition	Placing two opposing items/images together in a text to highlight the contrast between them.	His actions were in juxtaposition to his thoughts.
	Statistics	Numerical data used to prove ideas or points.	Statistics have shown that use of social media can cause mood swings in young children.
	Facts	Something that can be proven to be true.	His knowledge of political facts helped him to convince his audience.
	Anecdote	A short interesting story about a real person or incident.	She shared a relatable anecdote about growing up with siblings.

Week 7

Week 7 SPaG Task

Add a subordinate clause to the beginning, middle or end of these main clauses to create complex sentences.

1. The rain fell

2. He walked home

3. The night darkened

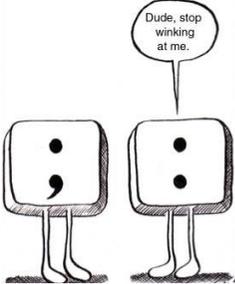4. She won the race

5. We waited for the bus

Week 8	Analogy	A comparison between one thing and another, for the purpose of explanation.	A popular analogy is 'like finding a needle in a haystack' to describe something difficult.
	Hyperbole	Exaggerates statements not meant to be taken literally.	Her use of hyperbole added a comedic tone but was very convincing.
	Hypothetical	An idea presented as a possibility, not real life.	His hypothetical scenario made the audience wish it were reality.
	Oxymoron	Using contradictory terms in conjunction.	A popular oxymoron is the word 'bittersweet'.

Week 8

Week 8 SPaG Task

Accurately punctuate the following text.

| , comma | ; semicolon | : colon | . full stop | ! exclamation mark | ? question mark |
| , apostrophe | ' ' quotes | " " double quotes | - hyphen | — dash | |

A few miles south of Soledad the Salinas River drops in close to the hillside bank and runs deep and green The water is warm too for it has slipped twinkling over the yellow sands in the sunlight before reaching the narrow pool On one side of the river the golden foothill slopes curve up to the strong and rocky Gabilan mountains but on the valley side the water is lined with trees willows fresh and green with every spring carrying in their lower leaf junctures the debris of the winter's flooding and sycamores with mottled white recumbent limbs and branches that arch over the pool

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	Quotes from an expert	Using expert statements to prove a point.	To quote an expert, Dr Johnson at the University of Exeter said, "this is the clearest data to prove climate change is real".		
Week 9	Register	The level of formality required, depending on context.	Ensure your register matches the type of text you are writing.	Week 9	**Week 9 SPaG Task** Identify the adverbial phrases in the following sentences. 1. I ate my breakfast in the morning. 2. I played netball with my friends. 3. When we played football, we lost the ball behind the shed. 4. Everywhere we looked there were signs of Spring. 5. We stayed at home due to the rain.
	Formal	Using more sophisticated, grammatically correct language.	You must use formal language in any non-fiction writing.		
	Informal	Using more casual, everyday language.	Informal language is widely used when conversing with friends.		
	Article	A piece of formal writing included in a newspaper or magazine.	The newspaper article detailed the events of a crime that occurred last night.		
	Speech	A formal address delivered to an audience.	Her speech detailed her opinions on a new school uniform.		
Week 10	Letter	A formal written communication.	He wrote a letter to the local MP to express his views on local issues.	Week 10	**Week 10 SPaG Task** Semi-colons can be used in place of a full stop to join two main clauses that are closely linked. Put a semi-colon in the correct place in the following: 1. Dad is looking old his hair is getting thinner. 2. I was late for school today there was traffic. 3. I can't wait for break I am so hungry. 4. I need to go shopping I have run out of food. 5. Someone needs to help me I am carrying too much.
	Essay	A formal piece of writing in which the author gives and evidences their argument on a topic.	Her essay about Macbeth's ambition was excellently written.		
	Leaflet	A printed sheet of paper containing information.	The guides were handing out leaflets at the door of the museum.		
	Blog	A regularly updated webpage, usually run by an individual about their own experiences or ideas.	Her latest blog post detailed her thoughts on the recent general election.		
	Literary non-fiction	Non-fiction writing which gives a story-telling elements to real events.	'Touching the Void' is an example of literary non-fiction.		

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Find some examples of 19th, 20th, and 21st century **non-fiction** texts online.

Try to find texts that are **linked by a theme**. Popular ones include: parenting, travel, education, prisons/law, animals, relationships, etc…

Practise your **SPaG**! by doing the following:
- Practise your **spellings**.

- Think of **synonyms** for words you use a lot.

- List all types of **punctuation** and know when to use them (EG: semi-colon; brackets; speech marks; colon; dash; etc…)

- Vary your **sentence types** (simple, compound, complex, and minor!)

- Use **connectives** to link paragraphs.

- Use TiP ToP to **paragraph** correctly!

Research:
AQA GCSE English Language Paper 2 past papers and mark schemes.

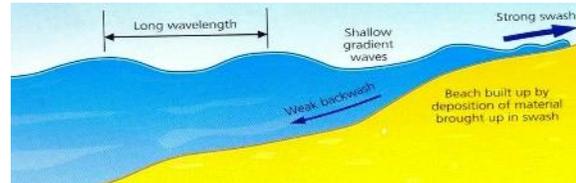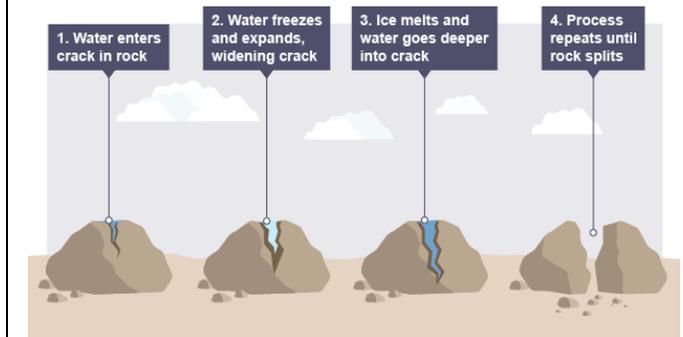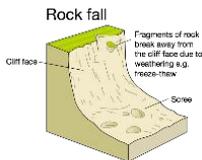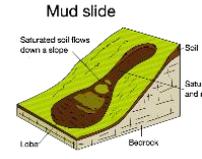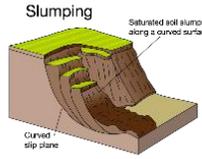| Week 1 – Tuesday 24th March 2026		
Lesson 1 – UK Landscapes	**Lesson 2 – Waves**	**Lesson 3 – Weathering**
Key Terms: **Relief:** The physical features of a landscape. This includes the height above sea level, steepness of slopes and shapes of different features. **Upland:** An area of high or hilly land. **Lowland:** An area where the land is at, near, or below the level of the sea.	**Key Terms:** **Waves:** Created by wind blowing over the surface of the sea. **Fetch:** The distance the wave has travelled. **Swash:** Movement of water up the beach. **Backwash:** Movement of water down the beach.	**Key Terms:** **Weathering:** The breakdown of rocks where they are (in situ). **Physical/Mechanical:** Breakdown of rock without changing its chemical composition. **Chemical:** Chemicals (acids) react with the rocks (limestone). e.g. as carbonation **Biological:** Breakdown of rock by plants and animals e.g. roots pushing rocks apart.
Content: Relief of the UK can be divided into uplands and lowlands. Each have their own characteristics. **North and West** have highland areas +600m: These are made of igneous and metamorphic rock: e.g. **Dartmoor** and **Pennines, Grampians** **Southeast** are **lowlands** areas - 200m: Flat or rolling hills. Made from sedimentary rock.	**Content:** **Constructive Wave:** This wave has a swash that is stronger than the backwash. This therefore builds up the coast. **Destructive Wave:** This wave has a backwash that is stronger than the swash. This therefore erodes the coast. 	**Content:** There are 3 types of weathering – Physical/mechanical, chemical and biological. **Freeze-thaw weathering:** This physical type of weathering occurs when rocks are **porous** (contain holes) or **permeable** (allow water to pass through).
Questions: 1. What does relief mean? 2. What does upland and lowland mean? 3. Where are upland areas in the UK? 4. Where are lowland areas in the UK?	5. What is swash? 6. What is backwash? 7. What are constructive waves? 8. What are destructive waves?	**Questions:** 1. What is weathering? 2. What are the 3 different types of weathering? 3. What is freeze-thaw weathering? 4. Draw a diagram of freeze thaw weathering

Week 2 – Tuesday 31st March 2026		
Lesson 4 – Mass Movement	**Lesson 5 – Erosion**	**Specification terminology**
Key Terms: **Mass movement:** When a large movement of soil and rock debris that moves **down slopes** in response to the pull of **gravity** in a vertical direction. **Saturated:** The ground is full of water and can no longer absorb anymore.	**Key Terms:** **Erosion:** The break down and transport of rocks – smooth, round and sorted.	1. **Relief** 2. **Upland** 3. **Lowland**
Content: **Rockfall:** Fragments of rock beak away from the cliff face, often due to freeze-thaw weathering. **Landslide:** Blocks of rock slide down. **Slumping/ Rotational Slip:** Slump of saturated soil and weak rock along a curved surface. **Mudflow:** Saturated soil and weak rock flows down a slope. 	**Content:** **Hydraulic Power:** Water enters cracks in the cliff, **air compresses**, causing the crack to expand. **Abrasion:** Rocks hurled at the base of a cliff like a sandpapering action that cause it to become smoother. **Attrition:** Rocks that bash together to become **smaller and smoother**. **Solution:** A chemical reaction that **dissolves rocks**. 	4. **Waves** 5. **Fetch** 6. **Swash** 7. **Backwash** 8. **Weathering** 9. **Mass movement** 10. **Erosion**
Questions: 1. What is mass movement? 2. What is rockfall? 3. What is a landslide? 4. What is slumping?	5. What is erosion? 6. What is hydraulic action? 7. What is abrasion? 8. What is attrition?	9. Use lessons 1-5 to write out the definition for each key term above.

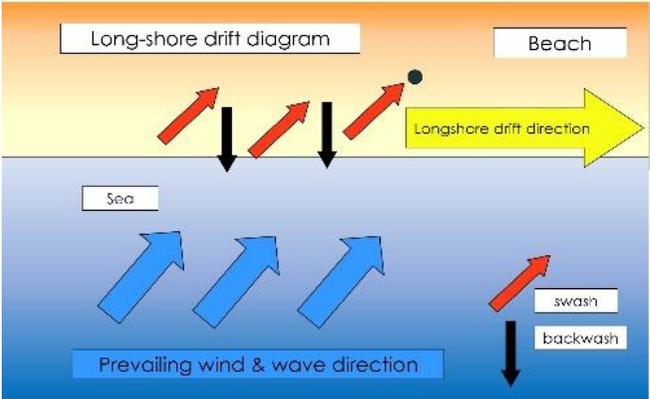# Year 10 Cycle 3 Geography Knowledge Organiser – UK Physical Landscapes (Coasts & Rivers)

Week 3 – Tuesday 21st April 2026		
Lesson 6 – Headland and Bay	**Lesson 7 – Cliffs and Wave cut platforms**	**Lesson 8 – Cave, Arch, Stack & Stump (CASS)**
Key Terms: **Discordant Coastline:** A type of coastline where different kinds of rocks run at right angles to the sea. Some rocks are hard, like granite, and some are soft, like clay. **Headland:** A rocky coastal highpoint of land made of rock that is resistant to erosion. **Bay:** An area of less resistant rock where the land has been eroded by the sea.	**Key Terms:** **Cliff:** A steep high rock face formed by weathering and erosion. **Wave cut platform:** A rocky, level shelf at or around sea level representing the base of old, retreated cliffs.	**Key Terms:** **Wave refraction:** When waves bend as the approach the shore. If part of the wave reaches shallow water first (like near a headland), it slows down. But the rest of the wave in deeper water keeps moving faster. This makes the wave bend.
Content: **Formation of a headland and bay:** 1. Alternating bands of hard and soft rock eroding at different rates. 2. The more resistant (hard) rock such as limestone is eroded slowly creating headlands. 3. The weaker (soft) rock such as clay erodes more easily and quicker creating bays. Bays are sheltered areas and so deposition takes place to form beaches. 	**Content:** **Formation of Cliffs and Wave Cut Platforms:** 1. The sea erodes the cliff through **processes** such **as hydraulic action and abrasion.** 2. This forms a **wave-cut notch** between high and low water. 3. Over time the **cliff is undercut** and eventually **collapses** due to the force of gravity. 4. The process is repeated with the cliff **retreating over time.** 5. At the base of the cliff a **wave-cut platform** is formed. This is an area of **flat rock that extends into the sea** and is exposed at **low tide.** 	**Content:** **Formation of Cave, Arch, Stack and Stump:** 1. **Wave refraction** causes the waves to **erode** a headland from **both sides**. 2. **Hydraulic action** and **abrasion** erode a **crack/ fault** in the cliff. 3. This process continues to create a **cave**. 4. The waves continue to erode from both sides forming an **arch**. 5. The arch is **unsupported and weathered** from the top so the roof of the **arch collapses**, due to gravity. 6. This leaves a **stack,** and this is weathered and eroded and forms a **stump**.
Questions: 1. What is a discordant coastline? 2. What is a headland? 3. What is a bay? 4. How are a headland and bay formed?	5. What is a cliff? 6. What is a wave cut platform? 7. How is a wave cut platform formed? 8. Draw a diagram of a wave cut platform	9. What is wave refraction? 10. What types of erosion create a CASS? 11. What creates an arch? 12. Why does an arch collapse?
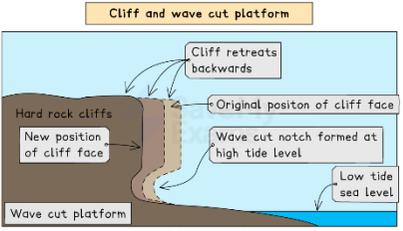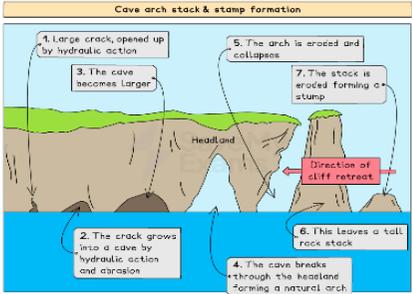
Year 10 Cycle 3 Geography Knowledge Organiser – UK Physical Landscapes (Coasts & Rivers)

Week 4 – Tuesday 28th April 2026		
Lesson 9 – Longshore drift	**Lesson 10 – Deposition, beaches and sand dunes**	**Specification terminology**
Key Terms: **Transportation:** The movement of eroded material. **Prevailing wind:** The direction wind comes from most of the time.	**Key Terms:** **Deposition:** When material being transported by the sea is dropped due to the sea losing energy. **Beach:** A narrow strip of land separating a body of water from inland areas. **Sand dune:** Coastal sand hill above the high tide mark, shaped by wind action and covered with grasses and shrubs.	1. **Discordant coastline** 2. **Headland** 3. **Bay** 4. **Cliff**
Content: **Longshore drift** is the movement of sediment along the coastline by waves **approaching** the beach at an **angle**, due to **prevailing winds** and moving **back down** the beach at a **right angle** due to **gravity.** 	**Content:** **Deposition** happens when there is a **low/little energy** environment, **sheltered** bays, waves are not very powerful (**constructive**), large supply of sediment or **sea defences**. **Sandy beach:** Gentle sloping, wide & flat, made by constructive waves, sometimes has dunes. **Pebble beach:** Steep sloping, narrow, made by destructive waves. **Sand dune formation:** **Embryo dune** forms when material is **deposited** around an **obstacle**. **Vegetation** starts to grow, and **roots binds the sand together**. Dunes grow and more vegetation grows.	5. **Wave cut platform** 6. **Wave refraction** 7. **Prevailing wind** 8. **Deposition** 9. **Beach** 10. **Sand dune**
Questions: 1. What is transportation? 2. What is the prevailing wind? 3. Explain the process of longshore drift 4. Draw a diagram of longshore drift	5. What is deposition? 6. What are the two different types of beaches? 7. What is a sand dune? 8. How is a sand dune formed?	9. Use lessons 6-10 to write out the definition for each key term above.

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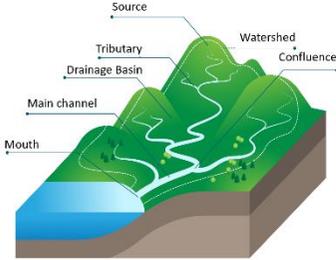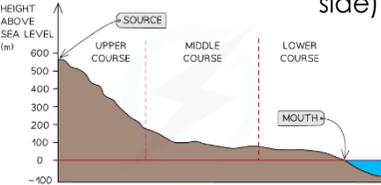
Week 5 – Tuesday 5th May 2026		
Lesson 11 – Spits and bars	**Lesson 12 – Coastal management**	**Lesson 13 – Holderness Coastline**
Key Terms: **Spit:** Depositional landform formed when a finger of sediment extends from the shore out to sea, often at a river mouth.	**Key Terms:** **Hard Engineering:** The use of concrete and artificial structures to defend land against natural erosion. **Soft Engineering:** Managing erosion by working with natural processes to help restore beaches.	**Key Terms:** **Holderness:** North East coast, Yorkshire. 61 km stretch of coastline, from Flamborough Head (headland in the north; hard resistant chalk) to Spurn Point (spit) in the south.
Content: **Formation of a spit:** 1. **Prevailing wind** comes from an angle (SW). 2. The **waves** approach at an **angle.** 3. This causes **longshore drift.** 4. There is a **change in the angle** of the coast/ or river mouth. 5. The **spit grows** into the river mouth. 6. The curved end is caused by **wave refraction.** 7. A **saltmarsh** forms behind as the water has no energy. 8. The **spit will not reach** the other side as there is a river. A **bar** is a **spit** that grows across a bay and **connects two headlands**. It creates a **lagoon.**	**Content:** • **Curved Sea Wall** (£5,000-10,000 per m) Effective at stopping the sea (+). Can look unnatural (-). • **Groynes** (£150,000 each) Create a wider beach, which can be popular with tourists (+). Starve beaches further along the coast (-). • **Rock Armour/Riprap** (£200,000 per 100m) Relatively cheap and easy to maintain (+). Often do not fit in with the local geology (-). • **Gabions** (£50,000 per 100m) Can improve drainage of cliffs (+). Cages last 5-10 years (-). • **Beach Nourishment and re-profiling** (£500,000 per 100m) Blend in with existing beach (+). Needs constant maintenance (-). • **Sand Dune Regeneration** (£200-£2,000 per 100m) Maintains a natural coastal environment (+). Time consuming to plant and fence areas off (-). • **Managed Retreat** (Highly variable) ADV: Allows some land to flood (+). Expensive to pay compensation (-).	**Content:** Fastest eroding coastline in Europe. Softer rock is boulder clay; harder rock is loose unconsolidated clay. On average, **1.8m** of coastline **lost to erosion annually**. Longshore drift moves sediment from north to south. **Mappleton:** Large rock groyne resulting in a wider beach which reduces the rate of erosion and protects the village (cost £2 million in 1991). **Bridlington:** A 4.7km sea wall plus groynes. **Eastern side of Spurn Head spit**: Protected with groynes and rock armour/riprap. Groynes create **downdrift starvation** as longshore drift is interrupted and beaches to the south become narrower and erode more rapidly – **Skipsea:** Houses have collapsed onto the beach. **Easington:** The Gas terminal (accounts for 25% of British gas) is 25m from the cliff and sea defences have been very expensive.
Questions: 1. What is a spit? 2. How is a spit formed? 3. Why won't a spit reach the other side? 4. What is a bar?	5. What is hard engineering? 6. What is the advantage of groynes? 7. What is soft engineering? 8. What is the disadvantage of managed retreat?	9. Where is Holderness? 10. Why is Holderness eroding so quickly? 11. What have they done at Mappleton? 12. What is the problem at Skipsea?

Week 6 – Tuesday 12ᵗʰ May 2026		
Lesson 14 – Drainage basin, cross & long profiles	**Lesson 15 – River processes**	**Specification terminology**
Key Terms: **Drainage basin:** The area drained by one river **River profile:** Shows changes in the height (altitude) of the course of a river from its source to its mouth.	**Key Terms:** **Erosion:** Wearing away and removal of material by a force. **Transportation:** The movement of material through the force of water. **Deposition:** When a river does not have enough energy to carry its material and it drops it. **Bedload:** Large material that is deposited by a river.	1. **Spit** 2. **Hard engineering** 3. **Soft engineering**
Content: **Source:** The beginning of a river. **Main channel:** This is where the river flows. **Tributary:** A small stream that joins the main channel. **Confluence:** The point at which a tributary joins the main channel. **Mouth:** This is the end of the river where it meets the sea or lake. **Upper course:** Shallow channel, steep valley sides and vertical (up and down) erosion. **Middle course:** Deeper channel, gentle valley sides and lateral (side to side) erosion. **Lower course:** Deep channel, flat floodplains and deposition dominant.	**Content:** **Erosional processes:** • **Hydraulic Action:** Force of the water removes material from the bed and banks of the river. • **Abrasion:** Material carried in the river scrape the banks. • **Attrition:** Material being carried hits each other. • **Solution:** Material is dissolved by the slightly acidic water. **Transportation processes:** • **Traction:** Large rocks are rolled along the river bed. • **Saltation:** Material bounces along the river bed. • **Suspension:** Material carried within the water flow. • **Solution:** Material is dissolved in the water.	4. **Drainage Basin** 5. **River profile** 6. **Erosion** 7. **Transportation** 8. **Deposition** 9. **Bedload**
Questions: 1. What is the source and mouth? 2. What is a tributary and confluence? 3. How many courses does a river have? 4. Describe the different courses of a river	5. Describe the 4 types of erosion 6. Describe the 4 types of transportation 7. What is deposition? 8. What is bedload?	9. Use lessons 11-15 to write out the definition for each key term above.

Year 10 Cycle 3 Geography Knowledge Organiser – UK Physical Landscapes (Coasts & Rivers)

Week 7 – Tuesday 19th May 2026		
Lesson 16 – V Shape valley & interlocking spur	**Lesson 17 – Waterfalls and gorges**	**Lesson 18 – Meanders**

Lesson 16 – V Shape valley & interlocking spur

Key Terms:
Vertical erosion: The wearing away and deepening of the river bed.

Weathering: The breaking down or dissolving of rock and minerals in situ (in place).

Mass movement: Downslope movement of materials, such as rock, soil, or mud due to gravity.

Content:
Vertical erosion is **dominant** in the upper course. This cuts down into the river bed and deepens the channel. Weathering and mass movement lead to material from the **valley sides collapsing**, leaving a steep *V-shaped valley.*

When a river is not powerful enough to cut though hard rock so **flows around it**, forming *interlocking spurs.*

Questions:
1. What is vertical erosion?
2. How are V-shaped valleys formed?
3. Draw a diagram of a V-shaped valley
4. How are interlocking spurs formed?

Lesson 17 – Waterfalls and gorges

Key Terms:
Waterfall: When a river falls over a vertical drop.

Gorge: Narrow valley with steep sides created when a waterfall retreats backwards up the river channel.

Content:
1. **Hard rock** is on top of soft rock
2. Erosion such as **hydraulic action and abrasion** erodes the soft rock, this creates a plunge pool
3. The hard rock is **undercut**
4. Hard rock is the unsupported and becomes unstable then **collapses**
5. This process causes a **waterfall**
6. The process repeats which causes the waterfall to **retreat** upstream causing a **gorge** of recession

5. How are waterfalls formed?
6. Draw a diagram of a waterfall
7. What are the two types of erosion that create waterfalls?
8. What is a gorge?

Lesson 18 – Meanders

Key Terms:
Meander: A wide bend or horseshoe like loop in a river.

Lateral erosion: Sideways erosion by a river causing a widening of a channel.

Content:
Meander Formation:
1. In the middle course the river has **lateral erosion** which widens the river channel.
2. This forms large bends and then horseshoe-like loops called **meanders.**
3. The **fastest flow (thalweg)** is on the **outside** of the meander bend. The force of the water erodes and undercuts the river bank, forming a **river cliff**.
4. The main types of erosion are **hydraulic action** and **abrasion**.
5. On the **inside** of the bend, where the river flow is slower, material is **deposited**. A **river beach/slip off slope** forms here.

9. What is a meander?
10. What is lateral erosion?
11. What two types of erosion happen on a meander?
12. Explain the formation of a meander

Week 8 – Tuesday 2nd June 2026		
Lesson 19 – Oxbow lakes	**Lesson 20 – Levees and floodplains**	**Specification terminology**
Key Terms: **Oxbow Lake:** An arc-shaped lake on a floodplain formed by a cut-off meander. **Deposition:** When a river drops the material, it was carrying due to a decrease in velocity (speed) of the water.	**Key Terms:** **Levee:** Natural embankments along the sides of a river. **Floodplain:** Flat expanses of land on either side of a river. **Discharge:** The volume of water which flows through a certain point in a given time. Usually measured in cubic meters per second.	1. **Vertical erosion** 2. **Waterfall** 3. **Gorge**
Content: 1. Meanders become more **sinuous** (wiggly) due to **lateral erosion.** 2. The meander becomes tight, known as a **swan's neck meander.** 3. During times of high discharge, the river erodes across the **meander neck** through **hydraulic action** and **abrasion.** 4. The river will now use the **new channel.** 5. The old meander channel is left as an **oxbow lake** due to sediment being deposited at either end. 	**Content:** **Levee Formation:** 1. When a **river floods**, sediment spreads out across the floodplain. **Friction** with the land **causes deposition**. 2. When a flood occurs, the **river loses energy**. The **largest** material is **deposited first** on the sides of the riverbanks and **smaller material** (finer silt and mud) **further away**. 3. After many floods, the **sediment builds up** to increase the height of the riverbanks, so **the levées become higher** than the surrounding floodplain. A **floodplain forms** when meanders **migrate** across the floodplain. When the reach the edge of the floodplain they **erode the valley side** (bluff) making floodplains wide.	4. **Meander** 5. **Lateral erosion** 6. **Oxbow lake** 7. **Levee** 8. **Floodplain** 9. **Discharge**
Questions: 1. What is an oxbow lake? 2. What is deposition? 3. Explain the formation of an oxbow lake 4. Draw a diagram of an oxbow lake	5. What is a levee? 6. Explain the formation of a Levee 7. What is a floodplain? 8. Explain how a floodplain is created	9. Use lessons 16-20 to write out the definition for each key term above.

Week 9 – Tuesday 9th June 2026		
Lesson 21 – Estuaries	**Lesson 22 – Flood hydrographs**	**Lesson 23 – Factors affecting flood risk**
Key Terms: **Estuary:** An area where a freshwater river or stream meets the ocean.	**Key Terms:** **Flood hydrograph:** A graph that shows how a drainage basin responds to a period of rainfall. **River discharge:** The volume of water which flows through a certain point in a given time. Usually measured in cubic meters per second.	**Key Terms:** **Flood risk:** The predicted frequency of floods in an area. **Surface runoff:** The flow of water across the surface when the land is unable to absorb it. **Impermeable:** A surface that does not allow water to pass through it, therefore stays on the top.
Content: **Estuary formation:** 1. During a **rising tide** the river is unable to be discharged into the sea. 2. The rivers **velocity falls** and sediment is **deposited.** 3. At low tide these fine deposits form **extensive mud flats.** These develop into **saltmarshes** and are important **habitats** for species. They provide protection for boats too.	**Content:** **Features of a flood hydrograph:** • **Base flow:** Normal level of the river. • **Peak rainfall:** Highest rainfall level. • **Rising limb:** Increase in river discharge. • **Peak discharge:** Highest level of river discharge. • **Lag time:** Time difference between peak rainfall and peak discharge. **Falling limb:** River discharge falling to normal level. 	**Content:** **Physical factors that affect flood hydrographs:** • **Relief:** Steep slopes encourage a rapid transfer of water towards river channels. • **Precipitation:** Torrential rainstorms or prolonged rainfall can lead to sudden flash floods as rivers cannot contain the volume of water. • **Geology:** Impermeable rocks encourage water to flow overland and into rivers. **Human factors that affect flood hydrographs:** • **Urbanisation:** Building on floodplains creates impermeable surfaces, such as tarmac and increases surface runoff. • **Deforestation:** Less interception from trees means more water hits the ground and surface runoff increases. • **Agriculture:** Soil left unused and exposed can lead to an increase in surface runoff. Rain can also flow quickly along the ploughed furrows (narrow trenches).
Questions: 1. What is an estuary? 2. Explain the formation of an estuary 3. What habitat forms in an estuary? 4. An estuary also provides protection for what?	5. What is a flood hydrograph? 6. What is the peak rainfall and peak discharge? 7. How is the lag time calculated? 8. Draw a sketch of a flood hydrograph	9. What is surface runoff? 10. What is impermeable? 11. Describe 3 physical factors that affect hydrographs 12. Describe 3 human factors that affect hydrographs

Week 10 – Tuesday 16th June 2026		
Lesson 24 – Flood protection	**Lesson 25 – Somerset Levels protection**	**Specification terminology**
Key Terms: **Hard Engineering:** Involves the building of entirely artificial structures using various materials such as rock, concrete and steel to reduce, disrupt or stop the impact of river processes. **Soft Engineering:** Involves the use of the natural environment surrounding a river, using schemes that work with the river's natural processes	**Key Terms:** **Somerset Levels:** An area of coastal plain and wetland in central Somerset around 650km2. It is flat land lying close to sea level. It has 2 main rivers flowing through: River Tone and River Parret.	1. **Estuary** 2. **Flood hydrograph** 3. **River discharge**
Content: **Hard engineering strategies:** • **Dams & reservoirs:** Controls the amount of water (+). Very expensive (-). • **Embankments:** Increase the amount of water in the channel (+). They can collapse (-). • **Flood relief channel:** Removes flood water from urban areas (+). Expensive & moves flood further downstream (-). • **Channel straightening:** Water moves quickly out of the area (+). Moves flood risk down river (-). **Soft engineering strategies:** • **Flood warnings:** People are prepared (+). Don't stop flooding (-). • **Floodplain zoning:** Lower land value is flooded (+). Some floodplains already built on (-). • **Afforestation:** Cheap and natural (+). Takes a long time to be effective (-). • **River restoration:** Increases habitat (+). Expensive and may lost land (-).	**Content:** **Immediate river management plan:** • 8 temporary pumps • People evacuated • Artificial levees built **Long-term river management plan:** • £20 million • Dredge the river so it holds more water • Install new pumping stations (21 in total) • Raise roads and railways • Tidal barrage at Bridgewater on the River Parret. 	4. **Flood risk** 5. **Surface runoff** 6. **Impermeable** 7. **Hard engineering** 8. **Soft engineering** 9. **Somerset Levels**
Questions: 1. What are positives of the hard strategies? 2. What are negatives of the hard strategies? 3. What are positives of the soft strategies? 4. What are negatives of the soft strategies?	9. What are the Somerset Levels? 10. State 3 actions of the immediate river management plan 11. How much did the long-term plan cost? 12. State 3 actions of the long-term river management plan	9. Use lessons 21-25 to write out the definition for each key term above.

Buckland Abbey (Monastery) Knowledge Organiser

1	Who founded Buckland Abbey in 1273?	Amicia, Countess of Devon
2	What order of monks were at Buckland Abbey?	Cistercian
3	What was a 'lay brother'?	A monk who mostly did manual labour rather than mostly religious duties
4	Which end of a church is most holy?	East End – it faces Jerusalem
5	In what shape were churches built in medieval times?	A cross (Cruciform)
6	Name 5 buildings that existed in the monastic era.	The abbey, the Great Barn, an infirmary, dormitories, Cloisters, north and south transepts
7	What is the Rule of St Benedict?	Collection of religious texts read by the Choir monks
8	What would have been produced on site as a Monastery?	Beer, bread, agricultural produce, wool.
9	What feature dominated the abbey building?	The crossing tower
10	Name 2 reasons the monks picked such an isolated place in Dartmoor to build an abbey.	To avoid distractions (better for religious reflection). Good water supply. Building materials.
11	Why might an artist's modern day reconstruction of what Buckland looked like as a monastery not be accurate?	Lack of sources and lots of changes made over the years (particularly by Richard Grenville).
12	How might an artist overcome the problem of not knowing what Buckland used to look like?	There are some remains of the original monastery. Comparison to other monasteries like Fountains Abbey.
13	What are the architectural features of the monastic buildings?	Buttresses, slit windows, bar tracery (stonework that supports glass in a stained glass windows), arched windows, made of stone.
14	What is a bar tracery?	Stonework that supports glass in a stained glass window

Key Terms

Abbot	a man who is the head of an abbey of monks
Abbey	the building or buildings occupied by a community of monks or nuns, also known as a monastery
Dormitories	the building in which the monks sleep
Chapter House	the building where monks hold meetings and where a chapter of the Rule of St Benedict would be read to them every morning
Buttress	a structure of stone or brick built against a wall to strengthen or support it.

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Buckland Abbey (Tudor Home) Knowledge Organiser

1	Which King dissolved the monasteries by 1539?	Henry VIII
2	Who bought Buckland from Henry VIII?	Richard Grenville the Elder
3	Why did Henry Break from Rome? (To leave the Catholic church and create the Church of England)	To get a divorce from Catherine of Aragon and to gain the wealth of England's monasteries.
4	In what decade does Richard Grenville (the grandson) make alterations?	1570s
5	What kind of changes did Richard Grenville the Grandson make?	Removed North and South transepts; demolished cloisters and dormitories; Created a second floor in the Nave; Changed the Chancel into a service wing for servants + kitchen.
6	Why did Grenville make the changes?	Changed the building to take away its Catholic roots. Complex and solid build of the abbey meant to was too difficult and costly to change much.
7	What did MOST Tudor gentlemen do when buying an old monastery?	Demolish it and build a new home from scratch.
8	What other general features of Buckland show that it was a Tudor manor?	Rectangle/square windows (a design popular in the Tudor era. These did not exist in the monastic era.
9	How can we prove that the Grenville family had the fireplaces built in Drake's Chamber?	They have the family device or logo on them.
10	Who did Grenville sell Buckland to in 1580?	Sir Francis Drake
11	When the Drakes took over Buckland, did they invest heavily in it between 1590-1740?	No because their main property became Nutwell Lodge in Exeter from 1699 onwards and Buckland became a second home, visited irregularly.

Key Terms

Break From Rome	When Henry VIII broke away from the Catholic Faith and replaced the Pope as the Head of the Church in England. This occurred in 1533-4 and he dissolved the Catholic monasteries in England by 1539.
Tudor Era	A period in History with Tudor monarchs (like Henry VIII and Elizabeth I)
Catholic	A Christian who follows the Catholic faith and who follows the words of the Pope
Protestant	A Christian who does not follow the words of the Pope. They are 'protesting' against Catholicism.
Dissolution	The process of closing (dissolving) the monasteries in England. It happened from 1536. Buckland was

Buckland Abbey (Agricultural Revolution) Knowledge Organiser

1	Name two ways that the Agricultural Revolution made farming more productive	Enclosure meant more food could be grown. New machinery like the Seed Drill. Selective breeding to improve the quality of sheep, cows, pigs.
2	Which agricultural reformer visited Buckland in the late 18th century (late 1700s)?	William Marshall
3	How was the Great Barn amended?	3 new doors added, allowing carts to be driven the whole length of the barn.
4	Who owned Buckland when changes were made during this era?	Lord Francis Augustus Heathfield
5	Which extra buildings were built during this time?	The Ox Sheds and The Linhay
6	What animal was used to plough the fields?	Oxen
7	A diary was kept by Marshall, telling us about daily life. How many days per week did agricultural labourers work?	6
8	Did just men work at Buckland?	No – oxen and children too.
9	Name different tradesmen named in Marshall's diary	Mason, wheelwright, blacksmith, miller, cooper, harness-maker and a Mole Catcher.
10	Name types of crops grown at Buckland	Wheat, barley, oats, turnips, potatoes, cabbages, peas, dairy produce, honey and cider.
11	What did the owner of Buckland do with the wealth generated by improved farming?	Built the impressive wooden Georgian staircase.
12	Did the Drake's live Permanently at Buckland Abbey?	No, they were based at Nutwell Lodge near Exeter
13	What did the area which is now the Education Centre used to be	The Milking yard for dairy cows.

Key Terms

Agricultural Revolution	a period of technological improvement and increased crop productivity that occurred during the 18th and early 19th centuries in England and Europe
Linhay	A type of farm building found in Devon and Somerset. It has two storeys – the hay loft at the top and bottom storey is for keeping cattle in during winter. The hay at the top acted as insulation for the cows to keep warm
An estate (noun)	an extensive area of land in the country, usually with a large house, owned by one person or family
Georgian period	The **Georgian era** is a period in British history from 1714 to c. 1830–37, named after the kings George I, George II, George III and George IV.

Buckland Abbey (National Trust) Knowledge Organiser

1	Which resident of Buckland does the National Trust celebrate the most?	Sir Francis Drake
2	Name ways in which Drake is commemorated	There is a sundial to commemorate 400th anniversary of his death. A Drake statue in the Lifetimes gallery. Drake's Drum on display. Paintings and artefacts. Stag horns in kitchen.
3	What have the Ox Sheds been converted into?	Shops, galleries, toilets, video presentation room..
4	Name some changes the National Trust has made to make it attractive for tourists	Access made easier (e.g. for wheelchair users); Information signs ; Restaurants, toilets to ensure people are relaxed; opportunity to spend money (e.g. Gift Shop)
5	What has been done to attract children to Buckland?	The upstairs of the main house is modelled as a ship with entertainment for children, like being able to dress up. Ice cream!
6	What is the Linhay now used for?	To display agricultural machinery such as different types of ploughs
7	What is the Great Barn used for now?	It has a Victorian Cider Press (simply because it is interesting to tourists) and sometimes art exhibitions
8	What is the Guest House now used for?	The building tourists walk into to pay for entry/present their membership card of the National Trust. Another part of the Guest House is the gift shop. The Restaurant/Café.
9	What is the significance of Education Room?	Provides a base for visiting schools – shows the National Trust care about education

Key Terms

National Trust	**UK conservation charity, protecting historic places and green spaces**
English Heritage	Another charity, founded by the government to preserve historic sites.

Buckland Abbey (Compared with Fountains Abbey) Knowledge Organiser

1	What was Fountains Abbey built from?	Sandstone
2	Was the abbey bigger or smaller than Buckland?	Bigger
3	How many people worked at Fountains when the abbey was at the height of its wealth?	200
4	What ornamentation was there on Fountains Abbey?	The Green Man (like a gargoyle) and carving of the Abbot's face.
5	How were choir monks and laybrothers kept separate in terms of the abbey buildings at Fountains?	Stairs and dormitories were separate
6	Name additional buildings at Fountains Abbey other than the abbey	Dormitories, Refectory, library, Chapter House, Kitchen
7	Name three ways Fountains abbey is DIFFERENT to Buckland Abbey	Had a library and separate place for lay brothers The burial ground at Fountains Abbey is much more understood – as there are gravestones which mark the burials of 19 Abbots The cloisters are on the south side of the monastery (like nearly all monasteries) whereas Buckland was on the North (due to draining issues).
8	Fountains Abbey was dissolved in 1539 like Buckland was. In the 1600s ,Stephen Proctor decided to make a Tudor Home on the site. Did he convert the abbey or use the stone from the Abbey ruins to build a new house?	Used the stone from the ruins to build a new house.
9	When was Fountains Abbey at its wealthiest?	1200s
10	Why did Fountains Abbey face financial troubles in the 1300s?	It experienced sheep disease. The Black Death killed many of its inhabitants. Famine in Scotland meant Scots came from the north to steal from Fountains Abbey

Key Terms

Fountains Abbey	The ruins of an Abbey in North Yorkshire

Crime and punishment Knowledge Organiser. 1 Medieval period, c.500-c.1500.

Causes and Nature of Crime	Policing and Law enforcement	Punishment and attitudes	Key considerations
Causes of crime during this period: **POVERTY** • Regular outbreaks of famine and disease caused pressure (e.g. Black Death of the 1340s) • Government policies of taxation (e.g. Poll Tax 1370s) made people poorer • Regular warfare had an impact as well – destroyed communites and because of increased taxation needed to fight the wars **ROYAL and CHURCH control** • Led to protests in the period **AGRICULTURAL community** • Access to farming materials may have been the cause of the high violent crime rate **Saxon period, c.500-1066** • Crimes against the person, e.g. assault / murder • Crimes against property, e.g. theft • Crimes against authority, e.g. treason • Moral crimes (links to Church / religion), e.g. drunkenness, adultery, etc. **Normans, 1066 - c.1200, continuity and change.** • William generally retained Edward the Confessor's laws Reason for continuity: stressed continuity and that William was Edward's legitimate successor **Later Medieval, c.1200 – c.1500, continuity and change.** • **Challenges to authority becamse common e.g. Peasants' Revolt 1381 – this was a change as people had been less likely to protest earler in this period** • Heresy Laws introduced from 1382 to deal with challenges to Church beliefs Reason for change: increasing challenges to the Church in England (Lollards) and over Europe • Increased focus on treason • Theft was the main crime (73.5% or all crimes) followed by Murder (18.2% of all crimes)	**Policing – community based:** **Saxon period, c.500– 1066.** • Feedal system helped to keep control • Hue and cry – witnesses / whole village expected to chase suspect; fines if failed to do so: no organised police force • Tithings – all males over 12 in a group of 10 – responsible for each other's behaviour • Hundremen- in charge of the hundred (10 tithings)- more serious crime **Normans, 1066 - c.1200, continuity** • No change after Norman Conquest (1066) Reason for continuity: system cheap and reasonably effective. **Later Medieval, c.1200 – c.1500, continuity and change** • 1285, Parish Constable introduced Reason for change: to organise hue and cry and link with county Sheriff for more important crimes / crimes outside village boundaries • Watchman introduced - night-time patrols Reason for change: more organised efforts at policing • Tithings fade out by the 1400s Reason for change: looser feudal ties of peasants after Black Death (1348/50) • 1326, Justices of the Peace first appointed to look after the law in their local area	**Saxon period, c.1000 – 1066.** • *Based on deterrence and retribution* • *Public and corporal (physical)* • Fines • Corporal punishment - stocks, pillory, whipping, maiming • Capital punishment – hanging • Retribution – severity of punishment matched crime (treason – death; repeat offences maiming, etc.) • Deterrent – painful / humiliating public punishment in front of community (linked to cost and lack of policing) • NOT prison **Normans, 1066 - c.1200, continuity and change.** • Increase in crimes punishable by death or mutilation • Reason for change: Norman harshness and need for deterrent as a small minority • Retribution and deterrent overwhelmingly main purposes **Later Medieval, c.1200 – c.1500, continuity and change.** • 1305, introduction of 'hung, drawn and quartered' punishment for treason Reason for change: retribution / deterrent - hideous punishment to stress enormity of crime	**Saxon period, c.500 – 1066.** **Society:** • Agricultural: vast majority lived in small villages. • Society was rural and community based • Massive importance of community in policing, trials and public punishment. • Growth of towns during Middle Ages (c.1200 onwards) reduced effectiveness of community. • Importance of Church / religion in all areas of life (and death) **Institutions – government** • Saxons – slow growth of royal power. • Normans, 1066 - . increased harshness of laws and punishments, e.g. brutality (Harrying of the North); Forest Laws; Murdrum Law; castles, etc. Particularly linked to deterrence as Normans a tiny minority of c.7000 among 2m Saxons. • Later Middle Ages: Norman / Saxon divisions faded; development of government institutions seen in courts / coroners, etc. **Institutions – Church / religion** • Christian religion massively influential in all areas of life and crime, etc. • **Society:** profound belief in God; massive wealth and influence of Church; tension between Church and government • **Crimes:** Religious influence on moral crimes e.g. drunkenness, adultery, failure to attend church; Heresy – crimes against Church beliefs especially after 1382. • **Policing:** Sanctuary linked to concept of mercy. Certain holy places left the criminal immune from arrest: had 40 days to decide whether to stand trial or go into exile. **Individuals** • William the Conqueror 1066 – Norman laws, harshness, personal love of hunting. **Attitudes** • Importance of religion **Science and technology** • Domination by religion

Crime and punishment Knowledge Organiser. 2 Early Modern period, c.1500-c.1700.

Causes and Nature of Crime	Policing and Law enforcement	Punishment and attitudes	Key considerations
For the most part, crimes stayed the same • Theft was still a common crime at 75% of all crime and many convicted of violent crimes (15% of all convictions) **Key causes of crime** Rise in population from 2.9m(1500) to 4.5m (1600) – led poverty and thus to vagrancy Inflation (rising prices) – led to poverty and thus vagrancy Bad harvests – rise in the price of food Monasteries closed by Henry VII from 1530s onwards – monasteries had looked after the poor Religious changes – during the 1500s there were a number of changes in religion. For example, Mary I was Catholic (1553-8) and her sister Elizabeth I was Protestant (1558-1603). This led to heresy as the main religion in the country changed under each ruler and people found themselves following the 'wrong' religion. **New crimes** • **Heresy:** even more important in the context of the religious Reformation. Used by Henry VIII, e.g. Anne Askew. Particularly used by Mary (1553-1558) – 283 Protestants burned Not significant after c.1560. • **Treason:** linked to sense to threat to the state from religious and other opponents. Used by Elizabeth (1558-1603) against Catholic priests and Catholic plotters. Elizabeth used Spies and Used by James I (1603-1625) against 1605 Gunpowder Plotters. • **Vagrancy – vagrants were beggars who roamed the country tying to find food and work.** Linked to social and religious developments. Social problems – rich / poor divide; rising population, unemployment, homeless in search of work, • 1495 Vagabonds and Beggars Act; 1547 Vagrancy Act; 1597 Act for Relief of the Poor; 1602 Poor Law Act **Rise of smuggling / poaching begins in the late 1600s, 1671 Game Act. See next sheet.**	**Generally as before:** • Community-based, unpaid. • Villages – hue and cry. • Town Constables and Town Watch. **Developments:** **Justices of the Peace (JP)- role grows** • JP (aka magistrates) - role grows in looking after local policing. Oversees local parish constables. • 1601 has to monitor and control beggers and vagrants (after 1601 Poor Law) • Workload of JP grew considerably **Charleys** • Voluntary watchman no longer effective in London, so 1663 Charles II introduced Charleys- paid watchmen. • Low pay and object of ridicule, **but the first law offices that were paid by public money** • Community based policing still strong, but effectiveness of community-based methods starts to decline, esp. in the growing number of larger towns. People anonymous / lesser sense of close community. • Professional 'thief-takers' e.g. Jonathan Wild.	**Generally as before:** • Fines • Corporal punishment - stocks, pillory, whipping, maiming • Capital punishment – hanging (in public) • Bridewell / House of Correction (including hard labour) for vagabonds. • Purpose: Linked to concepts of deterrence, retribution, removal and, to an extent, reform / rehabilitation (chance to create new life). Also helped England to populate and secure colonies. • NOT prison **Heresy punichsment e.g under Queen Mary (1553-8)** • Nearly 300 protestants burnt at the stake • 130 executions of Cathcolics under Queen Elizabeth (1558-1603) **Purpose of punishment:** • Retribution – severity of punishment matched crime (treason – hanged, drawn and quartered; repeat offences maiming, etc.). • Deterrent – painful / humiliating public punishment (linked to cost and lack of policing). • Removal – return to parish, Houses of Correction, transportation • Reform / rehabilitation – to an extent in Houses of Correction and transportation	**Society:** • Still mainly agricultural with tight local communities. • Growth of towns continued. • Growing division between rich and poor. • Religious change, division and instability of Reformation had an effect over whole period. • Political instability and division due to the Civil Wars (1642-1651/60) had impact. **Institutions – government** • Led the implementation of religious change under Henry VIII, Edward VI, Elizabeth and James I. Strongly opposed by Queen Mary. • Close links between the government and the established Church of England. Gunpowder Plot an attack on both. • Use of treason laws to deal with opponents. **Institutions – Church / religion** • Change and instability in Reformation causing Catholic / Protestant division had effect over whole period. • Use of heresy laws (to c.1558) to deal with opponents. • Links to attitudes to vagrants. • Gunpowder Plot links religion to attack on government. **Attitudes** • Still dominated by harsh concepts such as retribution and deterrent and humiliating public punishment. . • Increasing social tension caused by growth in gap between rich and poor. o Hostility of vagabonds. **Science and technology** • Increasing influence of science (e.g. Royal Society, 1662)

Causes and Nature of Crime	Policing and Law enforcement	Punishment and attitudes	Key considerations
Causes of crime: • Huge population increase 16m 1800 to 42m in 1900 • High taxation because of increased warfare in this period • Increase in customs and exise duties (led to smuggling) e.g. 70% of the cost of Tea was taxation • Societal and economic changes during the Industrial Revolution (see next page) led to a growth in social and political protest between 1790-1850 e.g. Peterloo Massacre 1819, Chartist Movement 1829-48 **Generally crime was as before:** • Treason – still most serious crime. **New crimes:** **Smuggling:** • Generally luxury goods, e.g. tea, wine, spirits, silk which government important duties made very expensive. Import duties main source of government income. • Thousands of smugglers and some violent organised gangs (Hawkhurst Gang). • Seen as 'social crime' with cross-class participation. • Hard for government to combat due to ineffective customs force, long coast-line, support / alibis for smugglers. • Decreased after William Pitt (1780s) and Robert Peel, etc. reduced import duties. **Highway robbery:** • Rise in late 17th/C18th: most common in this period: linked to increased wealth and solitary travel, ineffective banking, availability of horses and guns, poverty; demobilised soldiers. • Image: dashing gentlemen who robbed rich (e.g. Dick Turpin): but poor main victims. • Fall in early C19th: stagecoaches often with armed guards; increase in travel; growth of towns; controls on inns; mounted patrols around London; effective banking. **Crimes associated with urbanisation** • As Britain became more urban there was a growth of crimes such as pickpocketing	**Initially as before:** • Community-based, unpaid. • Villages – hue and cry. • Town Constables and Town Watch. Some towns paid these people but many were unpaid and ineffective. **Developments:** • Continued decline in the effectiveness of community-based methods due to growth of towns and cities. • Bow Street Runners, 1748 – early 1800s. Henry and John Fielding's small London-based Bow Street police force. Sought to deter by increased likelihood of detection. Collected and shared evidence. After 1785 Runners paid by government. Similar methods used by other forces in the London / Middlesex area. • Attitudes towards a professional police force: many people saw police as expensive and a dangerous government intrusion in people's freedoms. • 1829, creation of Metropolitan Police, see below.	**Initially as before:** • Fines; corporal punishment - stocks, pillory, whipping, maiming; capital punishment – hanging (see Bloody Code, below); Transportation to America until c.1776, later Australia; Houses of Correction, etc. - NOT prison initially. **Developments:** **Transportation to America, c.1620-1776:** • See reasons for transportation, above. • Old punishment but increasingly an alternative to death. • After American Independence, 1776, new location needed. **Transportation to Australia, 1787-1868:** • Transportation old punishment but increasingly used as alternative to death. 160,000 transported (1/6 women). • Purpose: Initially a strong deterrent due to separation from homeland, use of hulks, long / dangerous voyage and hard / primitive conditions in Australia. Also a more humane alternative to death; removal of criminals; population of new colonies; elements of rehabilitation through new chance. • Sentences usually 7/14 years: convicts earned 'ticket of leave'. • Decline – see below. **Prisons:** • Historically prison used pre-trial / pre- execution, for debtors and vagabonds (Houses of Correction). • Rise in use in C.18th as less harsh alternative to death in era of Bloody Code. • Early conditions: crowded mixed cells – violence / abuse and 'schools for crime'; corrupt gaolers; rich paid for better food / conditions. • **Developments to 1820s:** John Howard's 1770s investigations and writings (*State of Prisons, 1777*) regarding conditions, corruption; emphasis on rehabilitation. Elizabeth Fry: Quaker; work with women and children prisoners; emphasis on Christian teaching, humane treatment and conditions, useful work, etc. Both Howard and Fry believed that prisoners were reformable. • For impact of reformers and developments after c.1820- see below. **Purpose of punishment:** • Retribution: severity of punishment partly matched crime. Although 225 capital crimes under Bloody Code, most sentences were commuted unless major crime. • Deterrent: harsh / painful / humiliating public punishment but Bloody Code arguably ineffective. Transportation / early prison conditions very unpleasant. • Removal: transportation; increasing use of prisons • Reform / rehabilitation: to an extent in transportation and, to an increasing extend in prisons through influence of Howard and Fry.	**Society:** • Initially mainly agricultural. Increasingly urban as Industrial Revolution began to have an impact. • England generally politically and religiously stable but division between rich landowning elite and poor. • Ruling class fear of threat of crime. Strong efforts by to protect their lives and property, e.g. Bloody Code. • After 1789 increasing political fears due to threat of repeat of the French Revolution (1789 -) in England. • After end of French / Napoleonic Wars (1792-1815) economic depression and fears of political revolution intensify into early 1820s. **Institutions – government** • Government generally low income (mainly customs duties) and ineffective: main focus – fighting wars. • Government explicitly linked to landowning ruling classes: only c.7% of men have the vote. • Government / parliament passed laws to protect their property, e.g. Bloody Code generally, poaching. • Government low involvement (e.g. absence of prisons, policing, etc.). Government involvement much greater from 1820s onwards, see below. **Institutions – Church / religion** • Decline in importance though Church still influential. • Strong Christian motivation of reformers such as Howard and Fry. **Individuals** • Prisons – John Howard and Elizabeth Fry – but real influence felt after c.1820 (e.g. Gaols Act, 1823). • Policing – John / Henry Fielding and Bow Street Runners but small-scale. **Attitudes** • Class divisions strong. Ruling classes passed laws to protect their property. Mass of population saw many laws as 'social crimes' and ignored them. • Still dominated by harsh concepts such as retribution and deterrent and humiliating public punishment. • Some evidence of tenderness, e.g. under Bloody Code victims, witnesses, juries, etc. wouldn't push case and death sentences increasingly commuted to prison / transportation, etc. • Evidence of reform / rehabilitation ideas through Christian-influenced reformers, e.g. Howard and Fry. • Low involvement by government or public: Prisons uncontrolled and conditions terrible. Few effective police forces except around London (Bow Street Runners). **Science and technology** • Some evidence of influence of science and technology, e.g. in transport, banking, trade, etc.

Causes and Nature of Crime	Policing and Law enforcement	Punishment and attitudes	Key considerations

Crimes generally.
• As above.
Changes:
 	
Political challenge to the ruling classes, e.g. Peterloo Massacre 1819, Chartist Movement 1829-48 and the Tolpuddle Martyrs, 1834:
• Linked to social / economic and political divisions between rich and poor. ; poverty and unemployment after French / Napoleonic Wars (1792-1815); desire of rich to safeguard their property.
• Political: ruling elite fear of repeat of French Revolution (1789-) in Britain; ruling classes desire to exclude workers from political involvement. Desire of working classes to have a political voice when only 8% of men had vote.
• Events: Rebecca Riots 1839-42 – farmers angry about rent increases and road tolls disguised themselves as women and attacked the tollgates and workhouses
	Policing developments after c.1820:
	• Metropolitan Police Act, 1829.
	Robert Peel, Home Secretary, persuaded parliament it was necessary: rising crime, controls on police powers, fear of radical protestors.
	• Characteristics / equipment
	Initially a small force wearing non-military blue uniform.
	Limited equipment including whistle and truncheon.
	Decentralised – each town / county had own force – this stressed it wasn't central government control.
	Initially some public opinion hostile.
	• Developments:
	1842 – first detectives.
	1856 – towns / counties had to have police force.
	1869 first National Crime Records.
	1878 CID detectives created.
	Use of fingerprinting and telegraph communication.
		Transportation to Australia, from c.1840s-1868:
		• **Decline:** hostility in Australia due to links to crime and demeaning nature; cost: c.£500,000 a year; improved conditions / 1851 Gold Rush made Australia desirable location.
		
		Prisons – developments after c.1820.
		• Influence of Howard / Fry (see above) on government especially Robert Peel (Home Secretary in 1820s) leading to Gaols Act, 1823.
		• **Gaols Act, 1823.** Work of Robert Peel influenced by Howard and Fry. Improved prison conditions; paid warders; separated types of criminal; Christian instruction; visits by Prison Inspectors. (But only applied to 130 biggest prisons and sometimes ignored.)
		• **Pentonville Prison, 1842: Separate System, c.1842-1860s/70s.**
		  • Separate System prison – model for 90 others built 1842-77.
		  • Purpose:
		  Reasons for change:
		  Generally: belief that criminals reformable but also desire to deter; e.g. to put reform ideas into effect but in a tough way, e.g. teaching, useful work and sanitary conditions with solitary confinement.
		  Deterrent – loss of liberty; solitary confinement, etc.
		  Reform / rehabilitation through Christian teaching and opportunity for reflection; useful work – learning skills; healthy / sanitary conditions; separation from negative influences.
		  Influenced by reformers (Howard / Fry) regarding conditions, Christian teaching and useful work but Fry criticised the total separation.
		  • Conditions:
		  Each prisoner had own cell including hammock, toilet and basin, often loom. Kept separate from other prisoners at all times – masks worn in exercise yard / chapel. Some prisoners went mad due to separation.
		• **Silent System, c.1860s-1902/1922.**
		  • Conditions:
		  Total silence at all times; 'Hard board, hard labour, hard fare'. Strict conditions, dull / monotonous food and useless monotonous work, e.g. crank and treadmill.
		  • Purpose:
		  Reasons for change:
		  Cost of Separate System; fears of crime – influence of press, garrotting scares in 1860s; growth of beliefs in separate - less evolved –criminal class which could not be reformed / rehabilitated only deterred from crime; influence of Sir Edmund du Cane, Assistant Director of Prisons in late 19thC.
		  Deterrent – loss of liberty; harsh conditions, meaningless work.
			Society:
			• Full impact of industrialisation creating a mainly urban / industrial society – factories, mines, etc. Great increase in wealth over this period.
			• Initially deep social division between rich and poor: always evident but less divisive towards 1900.
			• Improvement of working class experience over the period, especially after 1850s (Mid-Victorian economic boom):
			  ○ Increased wages – better living conditions.
			  ○ Better working conditions.
			  ○ Improved education, especially after 1870.
			  ○ Increased political rights- many urban workers gained right to vote, 1867 / 1884.
			Institutions – government
			• Initially sought to protect <u>ruling class</u> interests (e.g. Tolpuddle Martyrs).
			• Increasing role in society based on:
			  ○ Increased government revenue (government has more money to spend) due to increased national wealth and more taxation, e.g. income tax.
			  ○ Development of moral conscience – govt want to help improve conditions / experience, e.g. prison conditions, working-class education.
			  ○ Political necessity: after 1867 working classes were c.50% of voters – their demands had to be responded to.
			• Evidence of increasing role:
			  ○ Prisons: Gaols Act, 1823 and subsequent laws, etc.
			  ○ Metropolitan Police Act, 1829 and subsequent laws, etc.
			  ○ Laws regarding limiting death penalty.
			Institutions – Church / religion
			• Humanitarian / moral influence of Christianity influences, for example, prison conditions and death penalty limits.
			Individuals
			• Continuing influence of Christian-inspired reformers such as Howard and Fry.
			• Massive influence of <u>Robert Peel</u>:
			  ○ Home Secretary and Prime Minister during period 1822-1846. Very effective at persuading government / parliament of need for reform.
			  ○ Influenced by Christian reformers.
			  ○ Impact on prisons (Gaols Act) and policing, etc.
			Attitudes – see also above.
			• Influence of Christianity on reformers, etc. (on prisons, death penalty).
			• Initial belief that criminals reformable / could be rehabilitated but later (1860s-) belief in unreformable less evolved criminal class.
			• Acceptance of greater role for government; government greater wealth to afford to be involved (e.g. in prison building, creation of police force).
			• Increasing belief that government must be involved to improve conditions of the working classes.
			• Concept of 'social crimes' continued regarding poaching and smuggling.
			Science and technology
			• Industrialisation creating national wealth. Impact on transport, etc.

Crime and punishment Knowledge Organiser : 4. Twentieth century to the present, c.1900 – present.

Causes and Nature of Crime	Policing and Law enforcement	Punishment and attitudes	Key considerations
Causes: • Development of a more multicultural society following mass immigration to the UK post World War II (1945 onwards) – led to more race related crime • Rise in mass-car ownership / use; number of accidents • Development of computers – led to new ways to commit fraud • Less respect for authority from the 1950s onwards- led to football hooliganism and violent crime **Race** • Race Relations Act, 1968 made it illegal to refuse work / housing, etc. on racial grounds; Criminal Justice Act, 2005 stated that racial hatred made another crime worse; Racial and Religious Hatred Act added crime of spreading hatred. • Context: mass non-white immigration post-WWII, e.g. West Indians, Pakistanis, etc. Mass European, etc. immigration since 2000; asylum seekers from Afghanistan, Middle East, etc. • Reasons for change: context, above; hope for tolerant multi-cultural society; more liberal social attitudes. **Driving offences – speeding / drunk driving:** • In past considered a 'social crime' and ignored / laughed at. • Post-1967 limits on alcohol in blood plus government campaigns against drunk driving; old speeding laws much more vigorously enforced. • 1983 seatbelts compulsory, 2003 mobile phone use in cars banned **Hooliganism and violent crime** • Happened before 20th Century but not serious (1885 Preston-Aston match – riot) • Peaked in 1970s/1980s - organised gangs e.g. British and Itlaian fans fought at Heysel Stadium Belgium 1985 • Died down because Special Police Force set up dedicated to dealing with hooliganism, fans segregated during and before matches, grounds have seating, CCTV **Drugs:** • In past legal but relatively little used; made illegal 1971 Misuse of Drugs Act. • Reasons for change: increased use in 1960s; harder / more dangerous drugs such as LSD, etc. • Modern debate about freedom to take drugs which don't harm others. **Modern versions of old crimes:** • Terrorism: existed in past (e.g. Gunpowder Plot, 1605). In modern times linked to IRA (Irish Republican Army) in 1970s and 80s and to Al-Qaeda, 'Islamic State' in 2000s / 2010s. • **People-trafficking:** in past 'white slave trade' lured girls into prostitution. 21stC gangs can control immigrant girls in same way. • **Cybercrime: use of internet, etc. technology in crime:** **Fraud** – pretending to be another to get bank details / money, etc. Existed in past, now on-line. **Copyright theft** – stealing rights of artist / writer. In past included photocopying, etc. now downloads, etc. **Extortion** – using threats / blackmail to make victim pay. Now often refers to online images / data. **Terrorism** • Increased threat (though earlier examples include 1605 Gunpowder Plot). • Initial threat in the 20th Century – IRA, 1960s onwards e.g. 1996 bombing of Arndale Centre on Manchester, 200 people injured. Good Friday Agreement (political agreement about N Ireland's future) led to descrease in IRA terrorism. • More recently terrorism linked to Islamist extremism e.g. 7/7 attack -Al Qaeda	**Developments in policing:** **Organisation:** • Now a small number of large police forces. **Role of women:** • First WPCs in 1920s **Training:** • 1947, Police Training College. **Equipment / transport:** • Police bicycles, 1909 • Police cars, 1920s/30s • Two-way radio, 1930s • 999 introduced **Technological support:** • Fingerprint Branch, 1901. • National Fingerprint System. • Blood types discovered, 1901. • Progress in forensic science • First police computers, 1960s • Breathalysers, speed cameras • Police National Computer, 1980 with 25 million records • First DNA conviction, 1988 • Automatic fingerprint Identification, 1995 • National DNA database • CCTV / mass surveillance video • Biometric screening **Specialist units:** • Fraud Squad • Specialist drugs units • Dog handling units • Special Branch **Crime Prevention:** • 1980s- Neighbourhood Watch • Similarities - old community-based policing • Differences – not compulsory; not a national system; only a help to professional police	**PRISON developments:** **From the Silent System to more humane prisons:** • 1902 Hard labour (crank / treadmill) ended. • 1922 End of Silent System; abolition of solitary confinement; visits allowed; end of convict crop / arrow uniforms, etc. (Alexander Patterson.) • 1933 Open Prisons, e.g. New Hall, Wakefield. Rehabilitation - to prepare prisoners for normal life after prison. • 1967 Parole – good behaviour led to reduced sentence. • Category A – D prisons – D being 'open prison' and used for non violent offenders • Reasons for change: return of reform / rehabilitation ideas especially through influence, 1922-47, of Prisons Commissioner Alexander Patterson; sympathetic liberal ideas that there was not a 'criminal type' but that difficult individual experiences (at home / community) could negatively affect individuals. **Alternatives to prison:** • 1907 Probation Officers • 1967 Suspended Sentences abd Parole introduced • 1972 Community Service Orders • 1990s / 2000s Electronic tagging; drug and alcohol treatment programmes; ASBOs; restorative justice. • Reasons: cost of prison; belief that prison could have a negative impact on inmates which might make a life of crime more likely; also see above. **Treatment of young offenders:** • C19th young offenders kept in normal prisons. • 1902 first Borstal • Borstals – 1902- 1982, reform schools for juvenile offenders), • 1982 Youth Custody Centres replaced Borstals • Reasons for changes: focus on rehabilitation; avoid negative impact of prison; view that many young offenders victims of negative domestic and social influences; young needed help not punishment; care for drug abusers, etc. **DEATH PENALTY developments:** • In 1900 death penalty available for 4 crimes. • 1908 / 1933 hanging of under 16s/18s ended. • Miscarriages of justice / controversial executions: 1950 Timothy Evans; 1953 Derek Bentley; 1956 Ruth Ellis. • 1957 Homicide Act restrictions • 1965 Murder Act + 1969 Amendment ends use of death penalty; 1998 final abolition. • *Reasons for change:* influence of government – changes to the law; changing public opinion linked to Miscarriages of justice / controversial executions Purpose of punishment: • Reform / rehabilitation increasingly seen by government / liberal public opinion as most important purpose. Deterrent still important especially to press and much of public.	**Society:** • Mass immigration from 1940s onwards. • Toleration especially during / after WWII; 1960s; early 21stC. **Institutions – government:** • Changes to laws including on crimes; prisons, alternatives to prison, young offenders; death penalty; etc. **Institutions – Church / religion:** • Continued moral / humanitarian influence of Church, e.g. opposition to death penalty. • Decline in influence of Christian religion seen in changes to 'moral' crimes such as homosexuality and abortion. **Individuals** **Attitudes:** • Influence of liberal / humanitarian beliefs on definition of crimes, use of prisons / treatment of prisoners and on punishment. • Particular influence of tolerant / liberal / humanitarian influences in 1960s linked to eliminating traditional (often Christian religion-based) prejudices and restrictions on behaviour. Also evident in early 21stC regarding race, religion, sexuality, etc. • Changing attitudes towards race (racial toleration) leading to changes in 'crimes'. • Desire to combat intolerance: racism and religious hate crimes; homophobia. • Concepts of 'social crimes' Continuity: small-scale smuggling and poaching. Change: attitudes to drunk driving, speeding. **Science and technology:** • Links to old crimes being committed in new ways, especially online but also terrorism • Developments in police equipment, databases, forensic science, etc. • Developments in alternatives to prison, e.g. electronic tagging, etc.

Normans Knowledge Organiser

Norman Conquest (Anglo-Saxon England) Knowledge Organiser

List three features that made England strong in 1065	It was divided into shires which made it easier to administer. The currency was well-respected and this encouraged trade and taxation. Burhs were fortified towns - good for defence.
Name the types of people in Anglo-Saxon England	King; Earls; Thegns; Ceorls; Thralls
What was the Wergild?	If someone was killed, the person responsible would have to pay the person's worth eg. a Ceorl was worth 160 shillings, a thrall was worth nothing.
What was life like for women in Anglo-Saxon England?	In some ways good (e.g. a woman's wergild was the same as a man's). But for thralls it was not good (e.g. Gangs of men would buy women thralls, rape them and sell them on.)
What were the main influences on Anglo-Saxon religion?	Roman Catholic Church and Celtic traditions from Ireland (which meant different forms of worship and art).
In what ways did the English not follow the Church's rules?	Some villages didn't have a church – they worshipped around a stone cross. There was a belief in local English Saints. Too much eating, drinking and sex.
List 3 ways St Dunstan reformed the English Church?	Ended corruption among Church leaders; Improving education of monks, nuns and priests; rebuilding churches, abbeys and monasteries.
What famous jewel could show the Anglo-Saxon to be a 'golden' era?	The Alfred Jewel
What was the purpose of the burhs?	They were protected towns that people could go to during Viking raids
Who was the corrupt Archbishop of Canterbury in England?	Stigand

Key Terms

Earl	King's chief advisers. There were 6 in 1065. Harold Godwinson was the most powerful
Thegn	These were wealthy landowners. There were around 5,000. They ran local courts and collected taxes.
Ceorls	Most people in England were Ceorls. Most lived on Thegns' land and farmed
Thrall	Slaves. 10% of the population were Thralls
Witan	Group of Earls and Bishops that were advisers and decided who should king when one died.

Norman Conquest (How/Why William became King) Knowledge Organiser

Why were the Normans effective warriors?	They had private armies supplied with armour and weapons; used horses (cavalry).
How did William take control of Normandy in 1047?	He persuaded the King of the Franks to help him crush a rebellion, he was brutal towards the rebels and married Matilda of Flanders (Flanders was a powerful neighbouring country)
Who was King of England at the start of 1066?	Edward the Confessor
Name the claimants to the throne in 1066	Harold Godwinson; Harald Hardrada; William of Normandy; Edgar Aetheling
In what ways was William prepared to win the Battle of Hastings?	Had cavalry, the Saxons did not Assembled a fleet of over 700 ships Took over two months to assemble his invasion fleet William's knights had spent years training to fight from horseback
In what ways was William a good leader during the Battle of Hastings?	William used the trick of fake retreats (feints) William fought the Battle of Hastings from horseback, Harold was on foot Towards the end of the battle William ordered his archers to change the angle they were shooting their arrows at
In what ways was William lucky to win the Battle of Hastings?	Some of Harold's troops left the shield wall at the Battle of Hastings Harold's army had to first defeat the Vikings in the north of England Harold's army had to do two very long marches with battles at the end of each Many of Harold's army at Hastings were from the fyrd (inexperienced soldiers) Harold was killed at a crucial point in the Battle of Hastings
How did the Normans break the English shield wall?	A group of Norman soldiers turned from the battle and ran down the hill. Some English soldiers chased after them.

Key Terms

Stamford Bridge	The battle between the Anglo-Saxons (Godwinson) and the Vikings (Hardrada). The Anglo-Saxons won.
Fyrd	This is the untrained men in Godwinson's army who were called up to fight when needed.
Cavalry	The soldiers on horses.
Normandy	The place in Northern France that William and his army came from.

Norman Conquest (How did William control England) Knowledge Organiser

Why did William take key English nobles (Edwin and Morcar) to Normandy?	As hostages to discourage the English from rebelling.
Which city was destroyed by Edric the Wild?	Hereford
How did William get the city of Exeter to promise to be loyal to him?	He asked the people to swear an oath of loyalty to him. After they refused, William had a hostage's eyes gouged out, then attacked the city for 18 days. Exeter surrendered and in return for their loyalty, William promised to show them mercy. He also built castles like at Totnes.
What kind of reasons did people in England have for resisting the Norman rule?	Anger over loss of land; Damaged pride at being defeated and ruled by a foreigner; anger at having to pay greater taxes.
What was the Harrying of the North?	In 1070, William ordered for an attack on Northern England (the least likely to be loyal to him because of their Viking roots). Crops, animals and food were destroyed. As many as 100,000 died of starvation.
Why did William confiscate treasure from monasteries?	To pay for the cost of putting down rebellions. Also a method of control (that wasn't too brutal). He did this at the same time as reforming the church, for example, English churchmen were largely replaced by Normans.
Why did King Svein (of Denmark) decide to leave England?	There were not enough Danes to take England. After a hard winter, they were tired and hungry. William told them to go, so King Svein left with treasures from Ely and Peterborough.
How did William capture the island of Ely from Hereward the Wake?	Gathered an army. Sent ships and boats to block supplies. Built a causeway (a bridge). Bribed some monks to lead them to the island.

Key Terms

Gytha	Harold Godwinson's mother. She led the rebellion in Exeter
Coronation	The ceremony where the king or queen is crowned.
Harrying	To carry out attacks
Differ	Be different – as in 'how far do these interpretations differ?' (Are they different or similar?)
Rebellion	An act of armed resistance against a government or a leader.

Norman Conquest (Castles) Knowledge Organiser

What was a 'ringwork'?	A castle without a motte. They had earth enclosures
Name some key features of Norman castles	Motte, Bailey, Ramparts (earth banks), Palisade (Wooden fence at the top of the ramparts), Moat, Gatehouse, Tower.
How many castles had William built by 1071?	35
How many castles were there by 1086 (when William died)?	Around 500 – mostly built by Norman lords.
Why did Normans build castles?	To control surrounding land. As a status symbol – to project an image of power. They were also used as an administrative centre for a local area.
What is the traditional interpretation of castles?	They were built for military purposes
What is the revisionist interpretation of castles?	The structures were weak so they were more about status
What is the recent interpretation of castles?	Castles were for controlling the local population. Heavily defended sites containing garrisons of Norman cavalry
Provide a military purpose that castles were built for?	To provide a defended area for Normans in in control of rebellious areas. To provide a base for Normans so if a rebellion broke out in the local area, there were Normans nearby to deal with it.
What were the fortified sites that Anglo-Saxon thegns had built prior to Normans building castles?	Burh-Geats

Key Terms

Interpretation	A view of something in History. In this case a written or pictorial view of the Norman era
Rampart	Earth banks which could be several metres high.
Motte	The hill in the bailey that the tower sat on. Good for defence.
Bailey	An enclosure inside the ramparts.
Burh-geat	Small defended sites used in Anglo-Saxon England

Norman Conquest (Impact of the Normans) Knowledge Organiser

What is Domesday Book?	It's actually 2 volumes that record every piece of land and every item of property in the country.
Why did William order Domesday Book to be made?	William knew how much tax to charge individuals in England. He needed money to pay for defence against invasion. Some historians think it was a way of legally proving the land in England had been taken by the Normans – therefore making William the undisputed ruler.
How many circuits (regions) were there? How many commissioners (people who collected the information for Domesday Book) in each?	7 circuits, 4 commissioners in each.
What percentage of land was owned by English landowners in 1086?	2% (William had given the rest of England to those who fought alongside him or funded William's invasion of England)
How did William prevent his nobles becoming a threat to him?	By spreading their land out. William's cousin, Alan Rufus, owned land in 12 different shires.
What was the Murdrum fine?	If a Norman was murdered, the local community had to pay an enormous fine until the murderer was found.
What was the main language after the Conquest?	Latin for writing. French for the ruling class. English for the lower (English!) class. This highlighted the difference between conquerors and conquered even more.
In what ways did life get better for the English under the Normans?	Most people still worked on the land – farming was unaffected. The number of thralls reduced hugely. Trade expanded in southern towns.
In what way did life get worse for the English under the Normans?	Number of free peasants were reduced. Peasants' rights were restricted eg. stopped from fishing in rivers, banning collecting firewood from forests. Also for the English noble, they had their land taken from them.

Key Terms

Undisputed	Nobody challenges you (as in William was undisputed King of England)
Exploit	To take advantage of (e.g. The Normans exploited the Anglo-Saxons)
Trial by combat	A new law introduced by the Normans – a sword fight between the accused of a crime and the accuser – whoever won was telling the truth
Ruling class	People who are the more powerful in a country. e.g. The Normans were the ruling class.

Lesson 1 – CV'S	Lesson 2 – Volunteering and Work Experience
Places to access support https://www.unifrog.org/	**Places to access support** https://getvolunteering.co.uk/

Content:

A **CV** stands for 'curriculum vitae' (that's Latin) and it is a summary of a job applicants experience and educational background.

What should a CV include?

- Employers need to know what qualifications you have:
- Keep it simple- GCSE's, AS Levels, A Levels
- If you haven't had your results yet, include predicted results
- Don't lie- if you are successful you may have to provide proof
- Include vocational qualifications
- Work experience is very important to add to your CV and includes the following:
- Paid employment
- Volunteering
- Work Experience
- Informal work

Include relevant skills and strengths. Examples of things you could include:

- Member of a school council
- Captain of a sports team
- Grades in music or dance
- Training: first aid, mental health first aid or food hygiene certificate
- Advanced computer skills

To structure your CV, include sections for **Personal Information**, an optional **Personal Statement** summarizing your skills and goals in 2-3 lines, **Key Skills**, **Work Experience**, **Education**, and **References**.
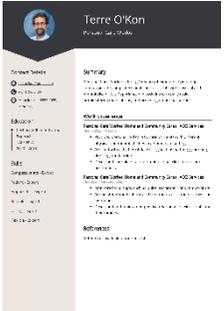
Content:

What is volunteering? Volunteering is where an individual or group provides services for no financial or social gain, to benefit another person, group or organisation. Volunteering can have positive benefits for the volunteer as well as the person or group being served.

Why is it important? By volunteering, you could be the reason someone gets a hot meal at a food bank. It could even be by increasing the confidence of a child in a scouts group, or helping someone buy some new clothes at a charity shop!

Conduct in the workplace

Being in a work environment is different to hanging out with your friends or being at school. Everyone at work has a purpose and a job to get done, and should behave in a way that doesn't negatively affect their own or their colleagues' performance.

Follow these simple rules to go by, to ensure you are a star employee at your work experience placement!

- Remember your manners; say please and thank you, and always be respectful.
- Be smartly/ appropriately dressed and turn up on time!
- Listen. Lots of workplaces will have specific rules that must be followed.
- Ask questions: If there's something in particular you want to know or learn, ask! There's no such thing as a silly question and your work experience employer is there to show and tell you all about their industry.
- Act responsibly and be tidy in your work
- Follow the health and safety rules of the organisation
- If you are going to be late or need to be off because of illness, you must telephone your work experience employer immediately and explain the situation to them.

Questions

1. What is a CV, and what does it summarise?
2. What types of qualifications should you include on your CV?
3. Why is it important not to lie on your CV?
4. What kinds of work experience should you include in your CV?
5. What are some examples of skills and strengths you can add to your CV?

Questions

1. What is volunteering, and how can it benefit both the volunteer and others?
2. Why is volunteering important?
3. How is working in a workplace different from being at school or with friends?
4. What are some important rules to follow during work experience?
5. **What should you do if you're going to be late or need time off during your work experience?**

Lesson 3- British Identity	Lesson 4 – Human Rights and International Law
Places to access support https://www.ons.gov.uk/	**Places to access support** https://www.un.org/en/about-us/universal-declaration-of-human-rights
Content: The **UK is identified as one country**, for example in its membership of the UN. In sport, the UK can be seen as one nation, eg when referring to the Olympic team. Whereas in other sports, there are separate teams representing each country that makes up the UK. In 2002 government proposed the introduction of **Citizenship tests** for people wanting to become British citizens. This came into force in 2005. Immigrants seeking British citizenship have to **pass a test on knowledge of the British way of life**. These tests have been widely criticised because of lack of agreement on what is British and the fact that many people born in Britain would probably fail the tests. **Here are three examples of citizenship questions:** In which year did the UK officially join the European Economic Community (EEC)? Who was the longest-reigning monarch in British history? What is the main purpose of the National Health Service (NHS)?	**Content:** **Where do our rights come from?** Rights come from lots of different places. Understanding where they come from can help you to find out what to do if they're being ignored. They mostly come from: **United Nations Convention on the Rights of Children (UNCRC).** This is a set of standards we follow in the UK that lists the rights that every child should have. These include the right to relax and play, to express yourself freely and to have an education. The Unicef website has more information about the UNCRC. **What rights do I have?** We all share lots of the same rights, but we also have some different rights depending on our age and our needs. You might not realise it, but rights are a part of your everyday life. **These are just some of the rights you have:** **Everywhere** – you have the right to your own beliefs or religion and the right to be protected from violence and abuse. **At home** – you have the right to a standard of living, such as money, food and housing that meets your needs. **At school or college** – you have the right to education even if you don't go to school, you're in hospital or youth custody. **At work** – you have the right to breaks, time off for holidays and to be kept safe.
Questions 1. How is the UK represented in the Olympics? 2. When were the Citizenship tests introduced in the UK? 3. What was the purpose of the UK Citizenship tests introduced in 2005? 4. Why have the UK Citizenship tests been criticized? 5. Can you name one example of a question asked in the UK Citizenship test?	**Questions** 1. Where do our rights come from, and why is it important to understand this? 2. What is the United Nations Convention on the Rights of Children (UNCRC)? 3. What rights do you have at home? 4. What rights do you have at school or college? 5. What rights do you have when you're at work?

Lesson 5– UK Politics	Lesson 6– Democracy and Voting
Places to access support https://www.parliament.uk/about/how/elections-and-voting/general/	**Places to access support** https://www.parliament.uk/about/how/elections-and-voting/general/
Content: UK Parliament is separate from government. **UK Parliament is a law-making authority** in the UK, and it also works to check and challenge the work of government through various processes known as scrutiny. **UK Parliament is made up of three parts: the House of Commons, the House of Lords and the Monarch, who has a ceremonial role**. The **House of Commons** is the democratically elected part of Parliament. Its 650 members are voted in, usually every five years, when there is a general election. The **House of Lords** is the appointed part of Parliament. It is independent from and complements the work of the elected House of Commons – they share responsibility for making laws and checking and challenging the work of government. The third part of Parliament is the **Monarch**. As Head of State, the Monarch's role in Parliament is predominantly ceremonial. They are politically neutral, so do not support any political party or get involved in day-to-day politics. The Monarch approves the bills passed by Parliament, enabling them to become law. The Monarch invites the leader of the party that wins the most seats in a general election to form the UK Government, and opens the new parliamentary session each year.	**Content:** In British politics, when we talk about 'the UK Government' we are referring specifically to the **Prime Minister, the Cabinet and their junior ministers and officials**. This is the **team of people responsible for leading and running the UK.** They are drawn from the political party which won the **most seats at the last general election**. After an election, the leader of the winning party is appointed as Prime Minister and chooses other party members to work in government with them for five years, until the next general election. Even though an MP may be a member of the party that forms the government, if they are not members of that chosen team they are not part of the government. The time when people vote is called an election. In a **general election**, like the one coming up later this year, people vote to choose an MP to represent them in Parliament. They vote for the person who they think has good ideas and will make the best decisions for them as individuals and for the country as a whole. Elections are key to democracy. They are people's chance to have a say in how the country is run. In a general election, people (citizens) elect politicians (MPs) to represent them. The MPs then work in Parliament to help run the country and make sure the will of the people is represented.
Questions 1. What is the difference between UK Parliament and the government? 2. What are the three parts that make up UK Parliament? 3. How are members of the House of Commons selected? 4. What is the role of the House of Lords in UK Parliament? 5. What is the Monarch's role in UK Parliament, and how are they involved in law-making?	**Questions** 1. How does UK Parliament differ from the government? 2. What are the three parts that make up the UK Parliament? 3. How are members of the House of Commons chosen? 4. What responsibilities does the House of Lords have in Parliament? **5.** What is the Monarch's role in UK Parliament, and how do they participate in law-making?

Lesson 7– Democracy and Elections
Places to access support
https://www.parliament.uk/about/how/elections-and-voting/general/
Content: A key part of elections being **free and fair** is that they are regular. **In the UK, the maximum time for one Parliament to lead the country is five years.** This was made law by the Dissolution and Calling of Parliament Act 2022. After five years, a general election must be held to give people a chance to have a say in whether their MP and the Government should change. **Each political party publishes a manifesto**. This is a booklet explaining what the party stands for and its policies. It is like a set of promises about what the party will do if it wins the election and forms the next Government. Candidates for a party use the manifesto to try to persuade people to vote for them. In UK elections, seats are allocated based on the first-past-the-post voting system. Here's how it works: **Constituencies:** The UK is divided into geographic areas called constituencies, each represented by one Member of Parliament (MP). **Candidates:** Each constituency has candidates from different political parties (and independent candidates) running for election. **Voting:** Voters in each constituency choose one candidate by marking an "X" next to their name. Voters can only select one candidate. **Winning:** The candidate who gets the most votes in a constituency (a plurality of votes) wins the seat. It's not necessary to get more than half the votes, just the most compared to other candidates. **Total Seats:** The party that wins the most seats in the House of Commons (at least 326 seats) forms the government. If no party wins a majority (a situation called a hung parliament), parties may form coalitions or alliances to govern.

Questions
    1.   How often are general elections held in the UK, and why is this important for fairness?
    2.   What is a manifesto, and how do candidates use it in UK elections?
    3.   How are seats allocated in UK elections?
    4.   What does "first-past-the-post" mean in the context of UK elections?
    5.   What happens if no party wins a majority in a UK general election?

Use this guide to make sure you know **what to do, when to do it and how to do it**:

Maths homework is to complete sparx

I CAN DO MATHS
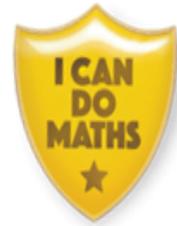
What to do
- Do Sparx **on the days in the homework** timetable
- **Compulsory Homework:** You **must do this** part of your homework every week
- **XP Boost/**Target Homework: Do this to **gain loads of XP** and to improve your maths!

Top Tips
- Do your homework as soon as you can
- Watch the help video
- If you are stuck, speak to your maths teacher before hand-in or pop in to Sparx Support club during breaks

Always:
- Write down the date
- Write down your bookwork code
- Read the question carefully
- Show all your workings
- Highlight/underline your final answer
- Tick if correct/cross if wrong

B28

$$\frac{4x - 1}{2} = 6$$

$$4x - 1 = 12$$

$$4x = 13$$

$$x = 3.25 \ \underline{ans} \ \checkmark$$

March 14
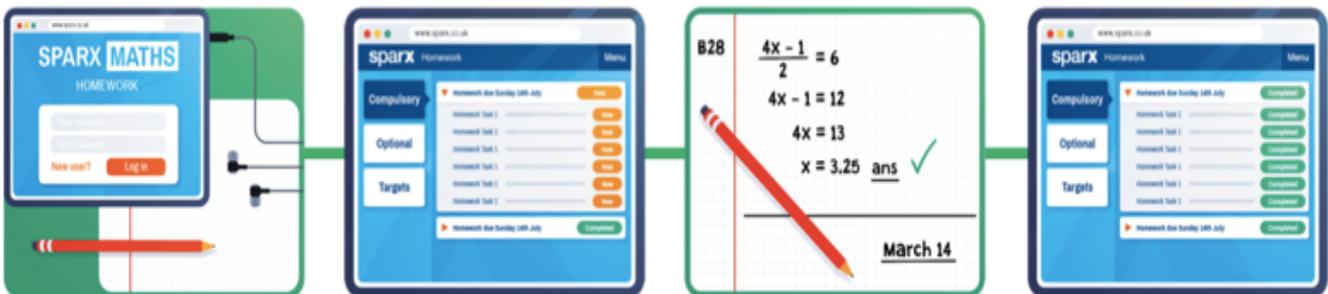
Your Maths Homework is to complete your sparx

Item	Description
Median and quartiles	The **median** is the **middle** value of an ordered list. **Quartiles** split the list into **quarters**. 4, 5, 7, 11, 15, 20, 25, 26, 27 Lower quartile — Median — Upper quartile 6 — 15 — 25.5
Interquartile range	$Interquartile\ range = Upper\ quartile - Lower\ quartile$
Cumulative frequency	The running total of frequencies
Tangent to a curve at a point	The **straight line** that "just touches" the curve at that point.
Speed and velocity	Speed is the distance travelled in a given amount of time. Velocity describes a **speed and** a **direction** of travel.
Velocity	Velocity is the **gradient** of a distance-time graph.
Acceleration	Acceleration is the **gradient** of a velocity-time graph.
Distance travelled	Distance travelled is the **area** under a velocity time graph.
Histogram	A histogram is similar to a bar chart. The number of items in each bar is represented by the **area of the bar**, not the height (as with a bar chart).
Frequency density	The height of a bar in a histogram. Given by $Frequency\ density = Frequency \div Classwidth$
Composite function	A composite function is a function made of more than one function. For example, $fg(x)$ represents a function made of the f and g functions. $x - \boxed{g(x)} \longrightarrow \boxed{f(x)} - fg(x)$
Inverse function	An inverse function is a function that "reverses" another function. For example, $f^{-1}(x)$ reverses $f(x)$
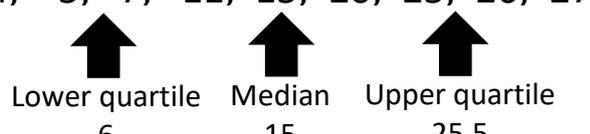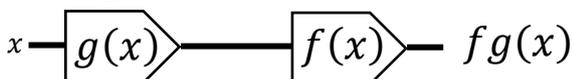
B&V Year 10 – Unit 3 – Extremism

Key Words			
Extremism	Holding extreme political or religious views.	Supremacy	A belief that someone or something is better than everyone else.
Terrorism	The unlawful use of violence and intimidation to bring about political or social change.	Radicalised	A process where someone comes to believe in extreme beliefs.
Fundamentalist	Where people stick very strictly to the rules/beliefs of religion.		

Key Information	
Islam key beliefs	• The **six articles of faith** in Sunni Islam and **five roots of Usul ad-Din** in Shi'a Islam, including key similarities and differences. • The **oneness of God (Tawhid)**, Quran Surah 112 and the nature of God: **omnipotence, beneficence, mercy, fairness and justice** (Adalat in Shi'a Islam), including different ideas about God's relationship with the world: **immanence and transcendence.** • Angels, their nature and role including **Jibril** and **Mik'ail** and **predestination** and **human freedom** (free will) and its relationship to the **Day of Judgement**. • Life after Death (**Akhirah**), **human responsibility** and **accountability, resurrection, heaven and hell.** • Authority: Prophethood (**Risalah**) including the role and importance of **Adam, Ibrahim and Muhammad.** • Authority: The Holy Books – **Qur'an:** revelation and authority, **the Torah, the Psalms, the Gospel** and their authority. The **imamate** in Shi'a Islam: its role and significance.
Extremism	• **Extremism** in its broadest sense is an individual or group of individuals who take an extreme position from that of the norm or take an extreme action. • Commonly, those with extremist perspectives have a particular perspective or belief 'in the sense that they take their opinions or beliefs to the limit and do not allow much room for the existence of any other views of life.'
Malala	• **Malala Yousafzai** is an activist for female education. She was attacked by the **Taliban** (religious extremists). She is quoted as saying: *'The extremists are afraid of books and pens. The power of education frightens them.'*
Radicalisation	• It is important to remember that **radicalisation** does not just happen to Muslims. • A person who becomes involved with any **extremist group** can be said to be radicalised. • The UK government has been worried about the rise in extremism for some years. In 2014, it introduced a new responsibility to schools to teach about what the government has called **British Values**.

Lessons 1 & 2 Biodiversity & the impact of population change	Lessons 3 & 4 Pollution and the destruction of peat bogs	Lessons 5 & 6 Deforestation and maintaining biodiversity
Biodiversity: The range of different living things in an ecosystem or on Earth. The greater the biodiversity the more stable the ecosystem. Human activities that reduce biodiversity: • Deforestation • Pollution • Dumping waste • Development and building • Global warming Consequences of loss of biodiversity: • Loss of undiscovered sources of food and medicine • Useful chemicals • Increased greenhouse gases- climate change An increasing population can impact pollution, food supply, health and disease, water supplies, wildlife/habitat, energy resources	**Land pollution**: Bodily waste, waste water from homes (sewage), toxic chemicals from industrial waste, side effect of farming from pesticides, insecticides and fungicides used to treat crops. **Water pollution**: Farming run off (fertilisers, pesticides, insecticides and fungicides), land fill run off. **Air pollution**: Smoke from combustion leads to particulates and lead to global dimming, acid rain (nitrogen oxides) from the burning of fossil fuels **Peat**: massive carbon store home to many different species of living organisms. Limited decomposition due to high pH and low oxygen conditions. Peat is being <u>destroyed</u>, it is used as a fuel and compost. Using peat in any way leads to a release of the stored carbon, also destroys habitats and leads to a decrease in biodiversity. When peat is dug up, **oxygen** is introduced, decomposers are able to start decay, they release oxygen through respiration of the peat materials. <u>Benefits of peat farming</u>: cheap, natural compost to boost nutrients in soil, easy to use and helps boost yields.	**Deforestation**: Clearing of the land of forest Deforestation is occurring to provide more **space** to produce more food (crops and animal farming), provide **timber** for fuel or material, space for biofuel crops and space for **building and developing**. <u>Consequences of deforestation:</u> • Increased carbon dioxide in the atmosphere, • Reduced biodiversity, • Increased global warming. There are a number of <u>programmes designed to helped maintain and increase biodiversity</u>: • Breeding programmes • Laws and regulations • Nature reserves • Recycling • Reforestation and replanting of hedgerows. Programmes to maintain biodiversity **may not be successful**: • Cost, • Animals may not have natural habitat remaining, • Hunting and poaching still an issue, • Space is needed for building and farming, • Laws can be difficult to enforce, • Lack of education.

Lessons 1 Exothermic and endothermic reactions	Lessons 2 Required practical	Lessons 3 Calculating bond energy, (higher)
In an exothermic reaction Thermal energy ,(heat) leaves , (exits) the reaction. During an exothermic reaction thermal energy is released into the surrounding. This makes the surrounding get hotter and the temperature increases. Exothermic reactions always happen when chemical bonds are formed , (made). We sometimes call this bond making. In an Endothermic reaction Thermal energy ,(heat),is absorbed from the surroundings. During an Endothermic reaction thermal energy is absorbed from the surroundings. This makes the surroundings get colder and the temperature decreases. Endothermic reactions always happen when chemical bonds are broken . We sometimes call this bond breaking. Endothermic reactions absorb heat, these reactions are known as thermal decomposition reactions. Combustion reactions are exothermic . Combustion reactions happen when a fuel burns in Oxygen to make carbon dioxide and water . Endothermic reactions are used in cold packs to treat sports injuries by reducing inflammation and the sensation of pain.	1. Using a measuring cylinder measure 30 cm^3 dilute hydrochloric acid and put it into the polystyrene cup. 2. Stand the cup inside the beaker. This will make it more stable. 3. Use the thermometer to measure the temperature of the acid. 4. Using a measuring cylinder measure 5 cm^3 sodium hydroxide solution. 5. Pour the sodium hydroxide into the polystyrene cup. Fit the lid and gently stir the solution with the thermometer through the hole. 6. Look carefully at the temperature rise on the thermometer. 7. When the reading on the thermometer **stops changing**, record the highest temperature reached in the table. 8. Repeat steps 4–7, add further 5 cm^3 amounts of sodium hydroxide to the cup each time, record your temperature reading in the results table. 9. Repeat until a maximum of 40cm^3 of sodium hydroxide has been added. Be careful when stirring the final 2 readings as temperature change is very sensitive. 10. Wash out all the equipment and repeat the experiment for your second trial.	Activation energy must be met to break bonds of the reactants. Energy is also needed to form bonds of the new products. Different bonds requires different amounts of energy. This energy is called a bond energy and can be found in a table like the one below.
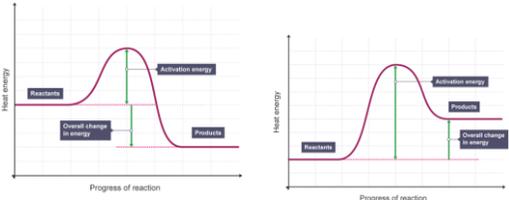
Table (Lessons 3):

Average Bond Energies, kJ/mol	
Bond	Energy
C-H	413
O-H	463
C-C	348
C-O	358
H-H	436
C-N	293
O=O	495
C=C	614

Calculating bond energy changes tells us if a reaction is exothermic or endothermic.
To calculate energy change you will need work out the number of bonds in the reactants and add up the bond energies.
You will then need to work out the number bonds in the products and add up all the bond energies .
Reactant bond energy – Product bond energy = Overall energy change
If the answer is positive the reaction has gained energy and is endothermic.
If the answer is negative the reaction has lost energy and is exothermic.

Lessons 1 Calculating Rates of Reaction	Lesson 2 Collision Theory & Surface Area	Lessons 3 Required Practical Concentration
- The rate of reaction = How quickly a reaction is happening. - How quickly reactants are turned into products $rate = \frac{amount\ of\ reactant\ lost}{time}\ or\ \frac{amount\ of\ product\ formed}{time}$ - We can record experimental data to allow us to calculate the rate of reaction, these include: - Measuring the decreasing mass of a reaction mixture. - Measure the increasing volume of gas given off. - Measuring the decreasing light passing through a solution - If you change the temperature or surface area you will still get the same amount of product (you just get them quicker or slower) - If you change the concentration you will get a different amount of product (and you will get them quicker or slower). - Gradient of the line gives you the rate of reaction. - If the gradient increases then the reaction rate is faster. - If the gradient decreases then the reaction rate is slower. - To record the gradient of a curve you need to take a tangent.	- Reactions don't happen unless the substances are in contact. - Particles are constantly moving. - For a chemical reaction to take place the reactant particles must collide first. - For the collision to be effective the particles must have the right amount of energy. - The minimum amount of energy required for an effective collision is called the activation energy. - The higher the frequency of collision the faster the rate of reaction. Surface Area/Particle Size - The sum of all the areas of each side of a shape - Using smaller particles increases surface area - Increase in surface area allows more _frequent_ collisions at surface	You will investigate the **Effect of Concentration on Rate of Reaction.** **Independent variable**: concentration of hydrochloric acid **Dependent variable**: volume of hydrogen gas produced **Control variable**: amount of magnesium added, temperature of solution Concentration - The number of particles in a given volume. - At high concentrations there are more particles. - More particles in the same space means more frequent collisions. - If we double the concentration we double the frequency of collisions - More frequent collisions = faster rate of reaction. Pressure - Gases only - At high pressure, the particles are closer together. - This means the particles are more likely to collide more frequently. - More frequent collisions = faster rate of reaction.

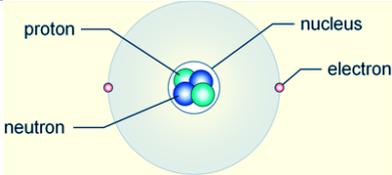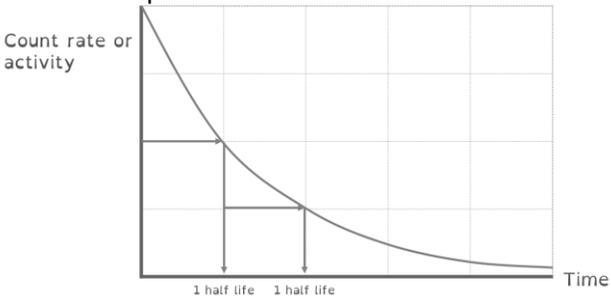| Lesson 4 Required Practical Temperature	Lessons 5 Catalysts	Lessons 6 & 7 Reversible Reactions & Dynamic Equilibrium

You will investigate the **Effect of temperature on Rate of Reaction.**
 	
• **Independent variable**: temperature of sodium thiosulfate
• **Dependent variable**: time taken for cross to disappear.
• **Control variable**: amount of hydrochloric acid, concentration of solution, concentration of hydrochloric acid
 	
Temperature
• Particles turn heat energy into kinetic energy
• When they get hotter they move faster
• When they move faster they collide more *frequently*
• Particles have more energy at higher temperatures
• More collisions with energy higher than the activation energy (more effective collisions)
	• Catalysts speed up the rate of reaction without getting used up (same amount at the start as you have at then end) unlike the reactants.
	• Catalysts are specific to reactions.
	• Catalysts lower the reaction's activation energy (E_a).
	• They do this by providing an alternative pathway
	• This reduces the energy needed to start a reaction
	• Lower activation energy means more collisions with energy higher than the activation energy. (more effective collisions)
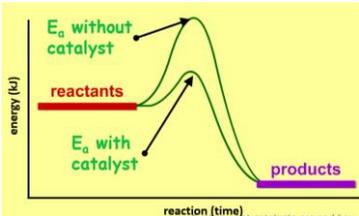	
		• Sometimes reactions can reverse themselves, and the products change back to being reactants again.
		• RE**ACTANTS ⇌ PRODUCTS**
		• A **reversible reaction** is a reaction that occurs in both the forward and reverse direction.
		• It is represented by the symbol ⇌
		• The amount of energy released in one direction must be the <u>same</u> as the energy absorbed in the opposite direction.
		hydrated copper sulphate
		   • The forward reaction requires heat – it is endothermic Blue → White
		   • The backwards reaction gives out heat – it is exothermic White → Blue
		Equilibrium is when the rate of the forward reaction is equal to the rate of the backward reaction. There is no observable change
		
		For equilibrium to occur:
		   • Closed system
		   • Reversible reaction
		During equilibrium:
		   • Concentrations of products and reactants stay the same.
		   • But the concentrations are not necessarily equal

Lesson 8
Le Chatelier's Principle (Higher Tier)

- Describes how the position of equilibria changes to favour the forward or backward reaction
- Equilibrium shifts to reduce change
- When conditions are changed the reaction will do everything it can to counteract the change

Changes:
- If you increase the temperature it will try and reduce it
- If you increase the concentration of the reactants it will try and get rid of some
- If you increase the pressure it will try and reduce it
- If you add a catalyst…
- The position of equilibrium doesn't change (but it will speed up the forward and backward reaction equally)

Lesson 1 Atomic structure	Lesson 2 Isotopes and the nuclear model	Lesson 3 Nuclear radiation

Lesson 1 — Atomic structure

	Proton	Neutron	Electron
Relative mass	1	1	1/2000 (very small)
Relative charge	+1	0	-1
Location	In the nucleus	In the nucleus	Orbits the nucleus in energy levels

- The **diameter of an atom** is approximately: **1x10⁻¹⁰** m and the diameter of the **nucleus is 1/10,000** of this.
- **Electrons orbit** in the nucleus **in energy levels**.
- **Electromagnetic radiation can be absorbed by electrons**, increasing their energy and causing them to move to a higher energy level (further from the nucleus).
- When their energy decreases and they move to a lower energy level, electromagnetic energy is emitted.
- **An ion is an atom that has gained or lost one or more electrons.**
- The process of turning atoms into ions is called ionisation, and occurs when electrons are given enough energy to remove them from their orbit completely.

Lesson 2 — Isotopes and the nuclear model

- The **atomic number** is the number of protons (the number of electrons is equal to this in an atom, but not an ion.)
- The **relative atomic mass** is the total number of protons and neutrons.
- Atoms of the same element can have different numbers of neutrons; these atoms are called **isotopes** of that element.
- The **plum pudding model** suggested that the atom is a ball of positive charge with negative electrons embedded in it.
- **Rutherford's experiment** provides evidence for the nuclear model of the atom.
- **Alpha particles** were fired at gold foil in a vacuum. The paths taken by the alpha particle led to the development of the nuclear model.
- The plum pudding model was rejected as it could not explain these results.
- **Niels Bohr** adapted the nuclear model by suggesting that electrons orbit the nucleus at specific distances. The theoretical calculations of Bohr agreed with experimental observations.
- The experimental work of **James Chadwick** provided the evidence to show the existence of **neutrons** within the nucleus. This was about 20 years after the nucleus became an accepted scientific idea.

Lesson 3 — Nuclear radiation

- Some atomic nuclei are unstable. The nucleus gives out radiation as it changes to become more stable. This is a random process called **radioactive decay**.
- Radiation is dangerous because it is **ionising** – it can turn atoms into ions. The more strongly ionising a form of radiation is the more dangerous it is.

	Alpha Particle α	Beta Particle β	Gamma Ray γ
What is it?	Helium nucleus	An electron	Electromagnetic radiation from the nucleus
Charge	positive	negative	neutral
Range in air	a few cm	a few metres	> 1 km
Absorber materials	stopped by paper	stopped by thin aluminium	thick lead or concrete
Ionisation	strong	weak	very weak
Speed	slow	fast	speed of light

Lesson 4 Nuclear equations	Lesson 5 Half-life	Lessons 6 +7 Irradiation and contamination

Lesson 4 — Nuclear equations

	Alpha	Beta	Gamma	Neutron
Symbol	α	β	γ	n
Change to mass number of nucleus	-4	0	0	-1
Change to atomic number of nucleus	-2	+1	0	0
Short description of change	Two neutrons and two protons, it is the same as a helium nucleus.	A high speed electron ejected from the nucleus as a neutron turns into a proton.	Electromagnetic radiation from the nucleus	A neutron is ejected from the nucleus

- Nuclear equations are used to represent radioactive decay.
- In a nuclear equation, an alpha particle may be represented by the symbol:

$$^{4}_{2}He$$

and a beta particle by the symbol:

$$^{0}_{-1}e$$

- Alpha and beta decay may cause a change in the mass and/or charge of the nucleus.
- The general rule for **alpha decay** is:

$$^{A}_{Z}X \rightarrow ^{A-4}_{Z-2}Y + ^{4}_{2}He$$

- The general rule for **beta decay** is:

$$^{A}_{Z}X \rightarrow ^{A}_{Z+1}Y + ^{0}_{-1}e$$

- The general rule for **gamma decay** is:

$$^{A}_{Z}X \rightarrow ^{A}_{Z}X + ^{0}_{0}\gamma$$

- The general rule **neutron emission** is:

$$^{A}_{Z}X \rightarrow ^{A-1}_{Z}Y + ^{1}_{0}n$$

Lesson 5 — Half-life

- **Activity** is the rate at which a source of unstable nuclei decays. Activity is measured in **becquerel (Bq)**
- **Count-rate** is the number of decays recorded each second by a detector (eg Geiger-Muller tube).
- **Radioactive decay is random** – it is not possible to predict:
    - When a particular nucleus will decay.
    - How long it will be before the next nucleus decays.
- Radioactive decay is spontaneous – there is nothing you can do to change the rate at which an isotope decays.
- Whilst we can't make predictions about individual nuclei we can find the average time it takes for half of the undecayed nuclei to decay.
- The **half-life** of a radioactive isotope is the time it takes for the number of nuclei of the isotope in a sample to halve, or the time it takes for the count rate (or activity) from a sample containing the isotope to fall to half its initial level.

Count rate or activity

Time

1 half life   1 half life

Lessons 6 +7 — Irradiation and contamination

- **Exposure to radiation** (called "**dose**") is measured in **Sieverts (Sv).** The dose is a measure of the risk of harm.
- **Dose adds up** ("cumulative")
- Scientists have studied the effect of radiation on humans.
- Their findings are published and shared with other scientists so they can be checked – this is called **peer review**.
- **Peer review is an important part of scientific research**.
- The hazard from radiation can be reduced by:
    - Spending as **little time** as possible in at-risk areas.
    - Keeping as **far away** as possible – using long-handled tools if possible.
    - Staying behind **lead or concrete** barriers/shields
- An object is **irradiated** if it is exposed to radiation. It does not become radioactive.
- Radioactive **contamination** is the unwanted presence of materials containing radioactive atoms on other materials.