2026-2027	Year 7 - AQA Activate Part 1 (Biology, Chemistry and Physics)					
	Half term 1	Half term 2	Half term 3	Half term 4	Half term 5	Half term 6
Knowledge, Skills and Understanding 	**Half term 1** Big idea 1 Forces Big idea 8 Organisms – movement Big idea 8 Organisms – Cells **Half term 2** Big idea 5 Matter – particle model Big idea 2 Electromagnets		**Half term 3** Big Idea 5 Matter – separating mixtures Big Idea 9 Ecosystems **Half term 4** Big Idea 6 Reactions – acids and alkalis Big Idea 10 Genes		**Half term 5** Big Idea 6 Reactions – metals and non-metals Big idea 3 Energy **Half term 6** Big Idea 7 Earth Big Idea 4 Waves	
	Baseline testing (September) Assessment 2 (week 4 HT2)		Assessment 3 (week 5 (HT3) Assessment 4 (week 4 HT4)		Assessment 5 (week 5 HT5) **End of year exam (week 2 HT6)**	
 **Embed your knowledge**	**Mandatory homework tasks:** • Educake - one homework set each week on a Monday and due the following Monday, maximum of 6 per half term **Enrichment homework tasks to further your understanding:** • **Big Idea 8** - Make a model of a cell and bring it into school • **Big Idea 5** – Create a states of matter comic strip and share it with your teacher • **Big Idea 1** - Research the famous story of Galileo dropping objects from the Leaning Tower of Pisa. Then summarise what he discovered. Test it yourself (safely!) by dropping two objects of different weights. What happens? Feedback in class • **Big Idea 2 -** Research a famous scientist who worked with electricity (e.g., Michael Faraday, Nikola Tesla, Thomas Edison). Create a short fact file and hand in to your teacher Knowledge organiser hyperlinks: 5 Matter knowledge organiser.pdf 1 Forces knowledge organiser.pdf 8 Organisms knowledge organiser.pdf 2 Electromagnets knowledge organiser.pdf		**Mandatory Homework tasks:** • Educake – one homework set each week on a Monday and due the following Monday, maximum of 6 per half term **Enrichment homework tasks to further your understanding:** • **Big Idea 6** - Acids and Alkalis - Investigate the type of soil in your garden • **Big Idea 9** – Survey your garden or local park, record what plant and animal species you find • **Big Idea 10** Inheritance - Research the features you share with your family. Knowledge organiser hyperlinks: 6 Reactions knowledge organiser.pdf 10 Genes knowledge organiser.pdf 9 Ecosystems knowledge organiser.pdf		**Mandatory Homework tasks:** • Educake – one homework set each week on a Monday and due the following Monday, maximum of 6 per half term • Individual revision for end of year exams **Enrichment homework tasks to further your understanding:** • **Big Idea 7** - Make a model of the Earth, bring your amazing model into school • **Big Idea 7** - Make a model of the Solar System, show your brilliant model to your teacher • **Big Idea 4 -** Create a piece of art (drawing, collage, or digital) that shows how light or sound waves travel. Knowledge organiser hyperlinks: 3 Energy knowledge organiser.pdf 7 Earth knowledge organiser.pdf 4 Waves knowledge organiser.pdf	

Extend your learning 	**Cell Superhero** *Task:* Design a superhero based on a type of cell (e.g., red blood cell, nerve cell, white blood cell). Include: • Powers based on the cell's function • A costume inspired by its structure • A short comic strip showing it in action **Explain It!** Write a short paragraph explaining the difference between **balanced** and **unbalanced** forces. Use an example to help explain your answer.	**Acid Rain Investigation** *Task:* Research what causes acid rain and how it affects the environment. Write a short report or create a presentation that includes: • Causes (e.g., sulfur dioxide, nitrogen oxides) • Effects on buildings, plants, and animals • Solutions to reduce it **Key Concept Recap** Write a short explanation (2–3 sentences) for each of the following: • What is an electric circuit? • What is the difference between a conductor and an insulator? • What happens in a series circuit if one component is removed?	**Plant Reproduction Comic Strip** *Task:* Create a comic strip showing the journey of a pollen grain from one flower to another. Include: • Pollination • Fertilisation • Seed formation and dispersal **Energy from Food** Research and answer the following: • What is a **calorie** (or kilojoule) and how does it relate to energy? • Why does your body need energy? • Which food groups provide the most energy? 👉 **Challenge:** Find out how many calories are in a banana, a slice of bread, and a chocolate bar. Which one gives the most energy?

2026-2027	Year 8 – AQA Activate Part 2 (Biology, Chemistry and Physics)					
	Half term 1	Half term 2	Half term 3	Half term 4	Half term 5	Half term 6
Knowledge, Skills and Understanding 	**Half term 1** Big Idea 1 Forces Big Idea 5 Matter **Half term 2** Big Idea 8 Organisms – Breathing Big Idea 2 Electromagnets Big Idea 6 Reactions		**Half term 3** Big Idea 8 Organisms – digestion **Half term 4** Big Idea 3 Energy Big Idea 9 Ecosystems - respiration		**Half term 5** Big Idea 9 Ecosystems - photosynthesis Big Idea 4 Waves Big Idea 7 Earth **Half term 6** Big Idea 10 Genes	
	Assessment 1 (week 6 HT1) Assessment 3 (week 6 HT2)		Assessment 3 (Week 5 HT3) Assessment 4 (Week 4 HT4)		Assessment 5 (Week 4 HT5) **End of year exam (Week 1 HT6)**	

 **Embed your knowledge**	**Mandatory homework tasks:** Educake - one homework set each week on a Monday and due the following Monday, maximum of 6 per half term **Enrichment homework tasks to further your understanding:** **Big Idea 1** - Research and describe 3 real-life applications of Hooke's Law. Examples: • Car suspension systems • Trampolines • Archery bows **Big Idea 5** - Create a 3D model of an atom using craft materials (e.g., beads, paper, pipe cleaners). Choose a simple element like hydrogen, helium, or carbon. **Big Idea 8** - Make a simple model of the lungs using everyday materials (e.g., plastic bottles, balloons, straws). **Big Idea 6** - Create a card game or quiz where players match: • The name of a reaction (e.g., combustion, photosynthesis) • The type of reaction (exothermic or endothermic) • A real-life example or use • You could make physical cards or a digital version using PowerPoint or Google Slides. Hyperlink to knowledge organiser: 5 Matter y8 knowledge organiser.pdf 1 Forces y8 knowledge organiser.pdf 8 Organisms y8 knowledge organiser.pdf 2 Electromagnets y8 knowledge organiser.pdf 6 Reactions y8 knowledge organiser.pdf	**Mandatory homework tasks:** Educake - one homework set each week on a Monday and due the following Monday, maximum of 6 per half term **Enrichment homework tasks to further your understanding:** **Big Idea 8** - Create a comic strip or character profile for 3 "Nutrient Superheroes" (e.g., Captain Carbohydrate, Protein Power, Vitamin V). **Big Idea 2** - Make a simple compass using a needle, a magnet, and a bowl of water (with adult supervision). Then: • Describe how you made it • Explain how it works • Test it by turning in different directions **Big Idea 9** - Write a comic strip or short story where a glucose molecule goes on a journey through the body and gets broken down during respiration. **Big Idea 9** – grow some seeds at home, place in different environmental conditions and report back to your class on how their growth was affected e.g. water vs no water, light vs dark **Big Idea 3** - Create a colourful poster showing different types of energy (e.g., kinetic, thermal, chemical, sound, light) and how they can be transferred or transformed. Hyperlink to knowledge organiser: 8 Organisms y8 knowledge organiser.pdf 9 Ecosystems y8 knowledge organiser.pdf 3 Energy y8 knowledge organiser.pdf	**Mandatory homework tasks:** Educake - one homework set each week on a Monday and due the following Monday, maximum of 6 per half term Independent revision for end of year exams **Enrichment homework tasks to further your understanding:** **Big Idea 4** – make a wave model **Big Idea 7** - research how climate change is affecting your local area or the UK e.g. flooding/extreme weather, wildlife or plant changes, energy use/pollution. **Big Idea 10** – Build a DNA model and share it with your class Hyperlink to knowledge organiser: 7 Earth y8 knowledge organiser.pdf 4 Waves y8 knowledge organiser.pdf 10 Genes y8 knowledge organiser.pdf

Extend your learning 	**Periodic Table Treasure Hunt** *Task:* Pick 5 elements from the periodic table and research: • Their symbol and atomic number • Where they're found in everyday life • One interesting fact about each **Design a Friction-Fighting Invention** Invent a product that either **reduces** or **increases** friction for a specific purpose (e.g., sports shoes, ice skates, car tyres). Draw and label your design, and explain: • What it does • How it uses friction • Why it's useful	**Journey of a Cheese Sandwich** *Task:* Create a storyboard or comic strip showing the journey of a cheese sandwich through the digestive system. Include: • Mouth, oesophagus, stomach, small and large intestines • Enzymes involved (e.g., amylase, protease, lipase) • Nutrient absorption **Baking bread** Investigate how the amount of yeast added to bread affects its structure	**Science in the News** *Task:* Find a recent science-related news story. Summarise it and explain how it links to something you've learned in class. **Light Maze Challenge** *Task:* Design a maze that a beam of light must travel through using mirrors. Draw the path and explain how reflection helps it reach the end.

2026-2027	Year 9 – Combined Science (AQA Trilogy) (Biology, Chemistry and Physics)					
	Half term 1	Half term 2	Half term 3	Half term 4	Half term 5	Half term 6
Knowledge, Skills and Understanding 	C1 Atomic structure B1 Cell structure P1 Conservation and dissipation of energy C2 The Periodic Table		B2 Cell division B3 Organisation and the digestive system C3 Structure and bonding		B15 Adaptations, interdependence and competition B16 Organising an ecosystem B17 Biodiversity and ecosystems B4 Organising animals and plants P4 Electric circuits	
	Assessment 1 week 5 HT1 Assessment 2 week 6 HT2		Assessment 3 Week 3 HT3 Assessment 4 Week 4 HT4		Assessment 5 week 6 HT5 **End of year exam 1 (Weeks 2-3 HT6)** **End of year exam 2 (Weeks 2-3 HT6)**	
 **Embed your knowledge**	**Mandatory homework tasks:** • Educake - one homework set each week on a Monday and due the following Monday, maximum of 6 per half term • Independent revision for assessments Knowledge organisers: available on teams https://www.bbc.co.uk/bitesize/subjects/zrkw2hv		**Mandatory homework tasks:** • Educake - one homework set each week on a Monday and due the following Monday, maximum of 6 per half term • Independent revision for assessments Knowledge organisers: available on teams https://www.bbc.co.uk/bitesize/subjects/zrkw2hv		**Mandatory homework tasks:** • Educake - one homework set each week on a Monday and due the following Monday, maximum of 6 per half term • Independent revision for end of year exams Knowledge organisers: available on teams https://www.bbc.co.uk/bitesize/subjects/zrkw2hv	

Extend your learning 	**Atomic Structure Quiz Creation** *Task:* Create a 10-question quiz on atomic structure for your classmates. Include: • Multiple choice • True/false • Short answer Provide an answer key and explanations. **Cell Recap** Answer the following in your own words: 1. What are the main parts of an animal cell and their functions? 2. What are the main parts of a plant cell that are not found in animal cells? 3. What is the function of the nucleus, mitochondria, and cell membrane? **Real-Life Motion** Choose a moving object (e.g., car, cyclist, train, animal). Research or estimate: How far it travels in a certain time Its average speed Whether its motion is constant or changing 👉 Challenge: Create a short report or poster showing your findings.	**Bonding Comparison Table** Create a table comparing **ionic**, **covalent**, and **metallic** bonding. Include: • Types of elements involved • How electrons are used • Structure formed • Melting/boiling points • Electrical conductivity • Example substances 👉 **Challenge:** Add a column explaining *why* each property occurs based on the bonding. **Local Ecosystem Study** *Task:* Visit a local park or garden and record the types of organisms you see. Create a food web and describe the roles of producers, consumers, and decomposers.	**Real-Life Reactions** Find **three examples** of chemical reactions that happen in everyday life (e.g., cooking, rusting, fireworks). For each one: • Describe what's happening • Suggest which factors might affect the rate of the reaction • Explain whether a fast or slow reaction is more useful in that situation **Mini Investigation – Tug of War** **Question:** What happens when two forces are equal or unequal? **Instructions:** 1. Use a rope or string and have two people pull from each end. 2. Try pulling with equal force, then with one side pulling harder. 3. Observe and record what happens. 👉 **Challenge:** Explain your observations using the idea of **resultant force**. Work safely and with supervision to avoid any

2026-2027	Year 10 – Combined Science (AQA Trilogy) (Biology, Chemistry and Physics)					
	Half term 1	Half term 2	Half term 3	Half term 4	Half term 5	Half term 6
Knowledge, Skills and Understanding 	**Biology** B4 Organising animals and plants B5 Communicable disease B6 Preventing and treating disease **Chemistry** C7 Energy changes C4 Chemical calculations C5 Chemical changes **Physics** P2 Energy transfer by heating P3 Energy resources P4 Electric circuits P5 Electricity in the home		**Biology** B7 Non-communicable diseases B8 Photosynthesis B9 Respiration B10 The human nervous system **Chemistry** C6 Electrolysis C8 Rates and equilibrium **Physics** P6 Molecules and matter P7 Radioactivity P10 Forces and motion		**Biology** B11 Hormonal communication Revision **Chemistry** C9 Crude oil and fuels C13 The Earth's Atmosphere Revision **Physics** P10 Forces and motion Revision	
	Biology assessment 1 week 7 HT1 Chemistry assessment 1 Week 6 HT2 Physics assessment 1 Week 4 HT2		Biology assessment 2 week 5 HT3 Chemistry assessment 2 week 4 HT4 Physics assessment 2 week 3 HT 4		Biology assessment 3 Week 5 HT5 Chemistry assessment 3 Week 7 HT5 Physics assessment 3 Week 6 HT5 **End of year mock exams – paper 1 for biology, chemistry and physics 3x1hr15min exams**	
 **Embed your knowledge**	**Mandatory homework tasks:** • Educake - one homework set each week on a Monday and due the following Monday, maximum of 6 per half term • Independent revision for assessments Knowledge organiser: Shared on teams by class teachers. Websites https://www.primrosekitten.com/pages/gcse-science https://www.bbc.co.uk/bitesize/subjects/zrkw2hv		**Mandatory homework tasks:** • Educake - one homework set each week on a Monday and due the following Monday, maximum of 6 per half term • Independent revision for assessments Knowledge organiser: Shared on teams by class teachers. **Science in the News** *Task:* Find a recent science-related news article. Summarise it and explain how it links to GCSE content. Include: • The science behind the story • Why it matters • Any ethical or environmental issues		**Mandatory homework tasks:** • Educake - one homework set each week on a Monday and due the following Monday, maximum of 6 per half term • Independent revision for assessments Knowledge organiser: Shared on teams by class teachers. **Teach It to a Year 7** *Task:* Choose a tricky GCSE topic and explain it in a way a Year 7 student could understand. Use simple language, analogies, and diagrams. You could present it as: • A comic strip • A short video • A one-page guide	

Extend your learning 	**Outbreak Investigation** *Task:* Research a historical or recent disease outbreak (e.g., Ebola, COVID-19). Create a case study including cause, transmission, prevention, and treatment. **Real-Life Applications** Research and describe **two real-life uses** of electrolysis. For each one: • What is being electrolysed? • What are the products? • Why is electrolysis important in this process? **Examples to consider:** • Electrolysis of brine (salt water) • Extraction of aluminium from bauxite • Electroplating metals **Design a Thermally Efficient Home** Draw and label a diagram of a house that uses **thermal insulation** to reduce energy loss. Include: • Double glazing • Loft insulation • Wall insulation • Draught excluders 👉 **Challenge:** Explain how each feature reduces energy transfer.	**Photosynthesis in Action** *Task:* Investigate how light intensity affects the rate of photosynthesis using online simulations or practical data. Plot a graph and explain the trend. **Radiation Penetration Simulation** Use an online simulation (e.g., PhET Interactive Simulations) to explore: • How alpha, beta, and gamma radiation behave • What materials block each type • How distance affects radiation detection 👉 Record your findings in a table and explain which type is most dangerous outside vs. inside the body. **Real-Life Applications** Research and describe **two real-world uses** of energy changes in reactions. For each one: • Is the reaction exothermic or endothermic? • What is the reaction used for? • Why is the energy change important? **Examples to consider:** • Self-heating cans • Instant cold packs • Combustion in engines • Photosynthesis and respiration	**Reflexes in Real Life** *Task:* Design a simple experiment to test reaction times. Collect data from family or classmates and analyse the results. **Timeline of the Atmosphere** Create a **timeline** showing how the Earth's atmosphere has changed over billions of years. Include: • Formation of the early atmosphere (volcanic activity) • Appearance of simple life and oxygen production • Development of the ozone layer • Modern atmosphere composition 👉 **Challenge:** Add estimated time periods and key events. **Key Concept Recap** Answer the following: 1. What is the difference between **AC** and **DC** electricity? 2. What is the **UK mains voltage** and frequency? 3. What is the purpose of the **earth wire** in a plug? **Environmental Impact** Research and describe **two environmental issues** related to crude oil. For each one: • What causes the issue? • What are the effects on people and ecosystems? • What can be done to reduce the impact? **Examples to consider:** • Oil spills • Air pollution from burning fuels • Climate change

2026-2027	Year 10 – Separate Sciences (AQA) (Biology, Chemistry and Physics)					
	Half term 1	Half term 2	Half term 3	Half term 4	Half term 5	Half term 6
Knowledge, Skills and Understanding 	**Biology** B4 Organising animals and plants B5 Communicable disease B6 Preventing and treating disease **Chemistry** C7 Energy changes C4 Chemical calculations C5 Chemical changes **Physics** P2 Energy transfer by heating P3 Energy resources P4 Electric circuits P5 Electricity in the home		**Biology** B7 Non-communicable diseases B8 Photosynthesis B9 Respiration B10 The human nervous system **Chemistry** C6 Electrolysis C8 Rates and equilibrium **Physics** P6 Molecules and matter P7 Radioactivity P10 Forces and motion		**Biology** B11 Hormonal communication Revision **Chemistry** C9 Crude oil and fuels C13 The Earth's Atmosphere C14 The Earth's Resources Revision **Physics** P10 Forces and motion P11 Pressure and surfaces P12 Wave properties Revision	
	Biology assessment 1 week 7 HT1 Chemistry assessment 1 Week 6 HT2 Physics assessment 1 Week 4 HT2		Biology assessment 2 week 5 HT3 Chemistry assessment 2 week 5 HT4 Physics assessment 2 week 3 HT 4		Biology assessment 3 Week 5 HT5 Chemistry assessment 3 Week 7 HT5 Physics assessment 3 Week 6 HT5 **End of year mock exams – paper 1 for biology, chemistry and physics 3x1hr15min exams**	
 **Embed your knowledge**	**Mandatory homework tasks:** • Educake - one homework set per subject each week on a Monday and due the following Monday, maximum of 6 per half term • Independent revision for assessments Knowledge organiser: Shared on teams by class teachers. Websites https://www.primrosekitten.com/pages/gcse-science https://www.bbc.co.uk/bitesize/subjects/zrkw2hv		**Mandatory homework tasks:** • Educake - one homework set per subject each week on a Monday and due the following Monday, maximum of 6 per half term • Independent revision for assessments Knowledge organiser: Shared on teams by class teachers. **Science in the News** *Task:* Find a recent science-related news article. Summarise it and explain how it links to GCSE content. Include: • The science behind the story • Why it matters • Any ethical or environmental issues		**Mandatory homework tasks:** • Educake - one homework set per subject each week on a Monday and due the following Monday, maximum of 6 per half term • Independent revision for assessments Knowledge organiser: Shared on teams by class teachers. **Teach It to a Year 7** *Task:* Choose a tricky GCSE topic and explain it in a way a Year 7 student could understand. Use simple language, analogies, and diagrams. You could present it as: • A comic strip • A short video • A one-page guide	

Extend your learning 	**Outbreak Investigation** *Task:* Research a historical or recent disease outbreak (e.g., Ebola, COVID-19). Create a case study including cause, transmission, prevention, and treatment. **Real-Life Applications** Research and describe **two real-life uses** of electrolysis. For each one: • What is being electrolysed? • What are the products? • Why is electrolysis important in this process? **Examples to consider:** • Electrolysis of brine (salt water) • Extraction of aluminium from bauxite • Electroplating metals **Design a Thermally Efficient Home** Draw and label a diagram of a house that uses **thermal insulation** to reduce energy loss. Include: • Double glazing • Loft insulation • Wall insulation • Draught excluders 👉 **Challenge:** Explain how each feature reduces energy transfer.	**Photosynthesis in Action** *Task:* Investigate how light intensity affects the rate of photosynthesis using online simulations or practical data. Plot a graph and explain the trend. **Radiation Penetration Simulation** Use an online simulation (e.g., PhET Interactive Simulations) to explore: • How alpha, beta, and gamma radiation behave • What materials block each type • How distance affects radiation detection 👉 Record your findings in a table and explain which type is most dangerous outside vs. inside the body. **Real-Life Applications** Research and describe **two real-world uses** of energy changes in reactions. For each one: • Is the reaction exothermic or endothermic? • What is the reaction used for? • Why is the energy change important? **Examples to consider:** • Self-heating cans • Instant cold packs • Combustion in engines • Photosynthesis and respiration	**Reflexes in Real Life** *Task:* Design a simple experiment to test reaction times. Collect data from family or classmates and analyse the results. **Timeline of the Atmosphere** Create a **timeline** showing how the Earth's atmosphere has changed over billions of years. Include: • Formation of the early atmosphere (volcanic activity) • Appearance of simple life and oxygen production • Development of the ozone layer • Modern atmosphere composition 👉 **Challenge:** Add estimated time periods and key events. **Key Concept Recap** Answer the following: 4. What is the difference between **AC** and **DC** electricity? 5. What is the **UK mains voltage** and frequency? 6. What is the purpose of the **earth wire** in a plug? **Environmental Impact** Research and describe **two environmental issues** related to crude oil. For each one: • What causes the issue? • What are the effects on people and ecosystems? • What can be done to reduce the impact? **Examples to consider:** • Oil spills • Air pollution from burning fuels • Climate change

2026-2027	Year 11 Combined Science (AQA Trilogy) (Biology, Chemistry, Physics)					
	Half term 1	Half term 2	Half term 3	Half term 4	Half term 5	Half term 6
Knowledge, Skills and Understanding 	**Biology** B11 Hormonal communication B12 Reproduction **Chemistry** C1 Atomic structure - revisit C2 The Periodic Table - revisit C3 Structure and bonding - revisit C8 Rates and equilibrium C12 Chemical analysis **Physics** P3 Energy resources P13 Wave properties P15 Electromagnetism		**Biology** B14 Variation and evolution B15 Genetics and evolution **Chemistry** C12 Chemical analysis Revision **Physics** Revision		Revision and preparation for external exams	
	Paper 1 PPE (October/November) **Biology paper 1 (1hr15)** **Chemistry Paper 1 (1hr15)** **Physics Paper 1 (1hr15)**		Paper 2 PPE (February) **Biology paper 2 (1hr15)** **Chemistry Paper 2 (1hr15)** **Physics Paper 2 (1hr15)**		External exams **Biology paper 1 (1hr15)** **Chemistry Paper 1 (1hr15)** **Physics Paper 1 (1hr15)**	**External exams** **Biology paper 2 (1hr15)** **Chemistry Paper 2 (1hr15)** **Physics Paper 2 (1hr15)**
 **Embed your knowledge**	Mandatory Homework tasks • revision • Educake every Monday Knowledge organiser: AQA Inheritance, Variation and Evolution Knowledge Organiser.pdf Websites https://www.primrosekitten.com/pages/gcse-science		Mandatory Homework tasks: • revision • Educake every Monday Knowledge organiser: AQA Inheritance, Variation and Evolution Knowledge Organiser.pdf		Mandatory Homework tasks: • revision • Educake every Monday **Teach It to a Year 7** *Task:* Choose a tricky GCSE topic and explain it in a way a Year 7 student could understand. Use simple language, analogies, and diagrams. You could present it as: • A comic strip • A short video • A one-page guide	

Extend your learning 	**Dangers of EM Radiation** *Task:* Research the potential dangers of ultraviolet, X-rays, and gamma rays. Create a safety guide explaining: • What the risks are • How exposure can be reduced • Real-life examples of protection (e.g., lead aprons, sunscreen) **Plant vs Human Reproduction** Create a comparison table showing the differences between **plant** and **human** reproduction. Include: • Type of gametes • Site of fertilisation • Method of pollination or mating • Type of offspring produced (genetically identical or varied) 👉 **Challenge:** Add diagrams of a flower and the human reproductive system with labels. **Life Cycle of a Product** Pick a household item (e.g. **plastic bottle**, **aluminium can**, or **paper bag**) and research: • Where the raw materials come from • How it's made • How it's used • How it's disposed of or recycled **Create a poster or digital presentation** showing the life cycle and its environmental impact.	**Natural Selection Case Study** *Task:* Research a real-world example of natural selection (e.g., peppered moths, antibiotic resistance in bacteria, Darwin's finches). Create a case study that includes: • The environmental pressure • The variation in the population • The outcome over generations **Gas Test Scenarios** For each scenario, identify the gas and explain how you would test for it: 1. A metal reacts with acid and produces a colourless gas that makes a squeaky pop. 2. A gas is collected from a reaction and relights a glowing splint. 3. A gas turns damp red litmus paper blue and smells strongly. 4. A gas turns limewater cloudy. 5. A greenish-yellow gas bleaches damp litmus paper. **Create a Spectrum Poster** Design a colourful **poster or infographic** showing: • The full electromagnetic spectrum • Wavelength and frequency trends • One use and one danger for each wave • A diagram showing how the waves differ in energy	***Genetic Engineering Research*** *Task:* Research how genetic engineering is used in medicine or agriculture (e.g., insulin production, GM crops). Create a fact sheet explaining: • The process • Benefits and risks • Public opinion and regulation **Required Practical Skills** Describe how you would carry out the following required practical: Investigating the effect of pH on the rate of enzyme activity. Include: • Equipment needed • Variables (independent, dependent, control) • How you would measure the results • How to ensure reliability	

2026-2027	Year 11 Separate Sciences (AQA) (Biology, Chemistry and Physics)					
	Half term 1	**Half term 2**	**Half term 3**	**Half term 4**	**Half term 5**	**Half term 6**
Knowledge, Skills and Understanding 	**GCSE Biology** B11 Hormonal communication B12 Homeostasis in action B13 Reproduction **GCSE Chemistry** C8 Rates and equilibrium C10 Organic reactions C11 Polymers C12 Chemical analysis **GCSE Physics** P3 Energy resources P8 Forces and balance P11 Forces and pressure P12 Wave properties P13 Electromagnetic waves P14 Light		**GCSE Biology** B14 Variation and evolution B15 Genetics and evolution **GCSE Chemistry** C14 The Earth's resources C15 Using our resources **GCSE Physics** P14 Light P15 Electromagnetism P16 Space		Revision and preparation for external exams	
	**Paper 1 Mock Exams (October/November)** Biology Paper 1 (1hr45) Chemistry Paper 1 (1hr45) Physics Paper 1 (1hr45)		**Paper 2 Mock exams (February/March)** Biology paper 2 (1hr45) Chemistry Paper 2 (1hr45) Physics Paper 2 (1hr45)		**External exams:** **Biology paper 1 (1hr45)** **Chemistry Paper 1 (1hr45)** **Physics Paper 1(1hr45)**	**External exams:** **Biology paper 2 (1hr45)** **Chemistry Paper 2 (1hr45)** **Physics Paper 2 (1hr45)**

 **Embed your knowledge**	Mandatory Homework tasks • revision • Educake - one homework set per subject each week on a Monday and due the following Monday, maximum of 6 per half term Knowledge organisers – provided on teams by class teachers **Websites** https://www.primrosekitten.com/pages/gcse-science BBC Bitesize	Mandatory Homework tasks • revision • Educake - one homework set per subject each week on a Monday and due the following Monday, maximum of 6 per half term Knowledge organisers – provided on teams by class teachers **Teach It to a Year 7** *Task:* Choose a tricky GCSE topic and explain it in a way a Year 7 student could understand. Use simple language, analogies, and diagrams. You could present it as: • A comic strip • A short video • A one-page guide	Mandatory Homework tasks • revision • Educake - one homework set per subject each week on a Monday and due the following Monday, maximum of 6 per half term Knowledge organisers – provided on teams by class teachers **Concept Map Challenge** *Task:* Create a concept map linking key ideas from a topic (e.g., atomic structure, energy transfers, or cell biology). Include: • Keywords • Definitions • Diagrams • Links between ideas	

Extend your learning 	**Dangers of EM Radiation** *Task:* Research the potential dangers of ultraviolet, X-rays, and gamma rays. Create a safety guide explaining: • What the risks are • How exposure can be reduced • Real-life examples of protection (e.g., lead aprons, sunscreen) **Explain It!** Write a paragraph answering: "Why is hormonal communication important for maintaining homeostasis?" Use scientific terms like **target organ**, **negative feedback**, **endocrine gland**, and **regulation**. **Polymer Examples** Choose **three polymers** and for each one: • Name the **monomer** it is made from • Describe its **properties** (e.g. flexible, strong, waterproof) • Give **one use** in everyday life **Examples to consider:** • Poly(ethene) • Poly(propene) • Nylon • Polyester • DNA (as a natural polymer)	**Natural Selection Case Study** *Task:* Research a real-world example of natural selection (e.g., peppered moths, antibiotic resistance in bacteria, Darwin's finches). Create a case study that includes: • The environmental pressure • The variation in the population • The outcome over generations **Flame Test Research** Research the **flame test colours** for the following metal ions: • Lithium (Li^+) • Sodium (Na^+) • Potassium (K^+) • Calcium (Ca^{2+}) • Copper (Cu^{2+}) ☞ **Challenge:** Create a colour-coded chart or poster showing each metal ion and its flame colour. **Redshift and Distance** Create a table or graph showing how **redshift increases with distance** from Earth. You can: • Use real data from galaxy observations (optional) • Or create a simple model showing that the further away a galaxy is, the greater its redshift ☞ **Challenge:** Explain how this supports the **Big Bang theory**.	***Genetic Engineering Research*** *Task:* Research how genetic engineering is used in medicine or agriculture (e.g., insulin production, GM crops). Create a fact sheet explaining: • The process • Benefits and risks • Public opinion and regulation **Required Practical Skills** Describe how you would carry out the following required practical: Investigating the effect of pH on the rate of enzyme activity. Include: • Equipment needed • Variables (independent, dependent, control) • How you would measure the results • How to ensure reliability	

2026-2027	Year 12 Biology (AQA)					
	Half term 1	**Half term 2**	**Half term 3**	**Half term 4**	**Half term 5**	**Half term 6**
Knowledge, Skills and Understanding 	**Big Topics** 1 Biological Molecules 3 Cell structure **Practical skills** RP1 – Enzymes Testing for biological molecules **Maths skills** Rearranging equations Standard form Tangents Calculating rates Unit conversion IAM	**Big Topics** 2. Nucleic acids 4 Transport across membranes **Practical skills** RP2 – Root tip squash RP3 Osmosis RP4 Cell membranes **Maths skills** Means Graphs %	**Big Topics** 5. Cell recognition and the immune system 7 Mass transport **Practical skills** RP5 Biological drawings RP6 Microbial growth **Maths skills** Means Graphs Pulmonary ventilation rate	**Big Topics** 6 Exchange 7 Mass transport **Practical skills** Dissection of heart, lungs, fish, stem, using a potometer **Maths skills** Ratios Surface area and volume Haemoglobin dissociation curves Cardiac output Rate of transpiration	**Big Topics** 8 DNA, genes and protein synthesis 9. Genetic diversity 10 Biodiversity **Practical skills** RP6 Microbial growth **Maths skills** Spearman's rank correlation coefficient Students t-test Standard deviation P-values Simpsons index of diversity Mean, median, mode Significant figures Estimating results	**Big Topics** Revision 19 Populations in ecosystems **Practical skills** RP12 Quadrats RP6b Size of bacterial population using serial dilution Random sampling Mark-release-recapture **Maths skills** Logarithmic scales Growth curves Normal distribution curve Powers Orders of magnitude Probability Plotting two variables from experimental data
	Baseline testing (Assessment 1) – September Assessment 1 cells week 6 Assessment 2 – November		Assessment 3 Exchange and movement – February Assessment 4 immunity – February		Assessment 5 Chapter 8/9 May End of year exams AS Paper 1 (1hr30) AS Paper 2 (1hr 30)	
 **Embed your knowledge**	Exam questions Reading chapters of the text book Notes Weekly wider reading log Researching/Writing up required practical's		Exam questions Reading chapters of the text book Notes Weekly wider reading log Researching/Writing up required practical's		Exam questions Reading chapters of the text book Notes Weekly wider reading log Researching/Writing up required practical's Revision	

Extend your learning 	**Wider reading** -Bill Bryson – A Short History of Nearly Everything Journals to keep up with current scientific developments, can use knowledge for the paper 3 essay. **Websites** http://www.ibiblio.org/virtualcell/index.htm – An interactive cell biology site http://www.accessexcellence.org/RC/VL/GG – A web site showing illustrations of many processes of biotechnology http://www.uq.oz.au/nanoworld – Visit the world of electron-microscope https://thealevelbiologist.co.uk/ **Design an experiment** - Propose a controlled experiment to test the effect of a variable on enzyme activity. Include hypothesis, method, and expected results. **Practical Skills Recap** For each required practical: • Write the aim, method, and results • Identify variables and controls • Explain how to improve reliability and accuracy Example: Investigating the effect of temperature on enzyme activity.	**Wider Reading** • Ernst Mayr – This is Biology: The Science of the Living World • James Watson – DNA: The Secret of Life • Ed Young – I Contain Multitudes (The microbes within us and a grander view of life) • Meredith Wadman – The Vaccine Race **Websites** http://www.dnai.org/a/index.html Explore the genetic code https://www.primrosekitten.com/ **Statistical Analysis of Biological Data** *Task:* Use chi-squared or t-tests to analyse biological data (e.g., inheritance patterns or enzyme activity). Interpret results. **Biology in the News** Find a recent news article related to biology (e.g. genetics, disease, biotechnology, ecology). • Summarise the article • Identify the biological concepts involved • Explain how it links to your A-Level studies • Give your opinion on the issue **Keyword Flashcards** Make flashcards for key terms and processes: • Osmosis • Active transport • Semi-conservative replication • Antigen • Monomer vs polymer Use apps like **Quizlet** or **Anki**, or make physical cards. Test yourself regularly.	**Wider reading** • Rachel Carson – Silent Spring • Gaia Appello - 101 ways to help the planet – A one year challenge: make one small change a week to help the environment **Watch** A Life on Our Planet **Websites** http://www.nhm.ac.uk – The London Natural History Museum's website with lots of interesting educational material **Biology and Art** *Task:* Create a piece of art (drawing, sculpture, digital) inspired by a biological structure or process. Include a scientific explanation. **Design a Conservation Plan** *Task:* Choose an endangered species and create a conservation strategy considering habitat, human impact, and genetics. **Topic Summary Sheets** Create a one-page summary for each major topic: • Cell structure • Biological molecules • Enzymes • Cell membranes and transport • DNA and protein synthesis • Cell division • Immunity Include key definitions, diagrams, and processes. Use colour coding and bullet points for clarity.

2026-2027	Year 13 Biology (AQA)					
	Half term 1	**Half term 2**	**Half term 3**	**Half term 4**	**Half term 5**	**Half term 6**
Knowledge, Skills and Understanding 	**Big Topics** 11 Photosynthesis 14 Response to stimuli 12 Respiration **Practical Skills** RP7 Chromatography and leaf pigments RP8 Chloroplasts and dehydrogenase RP9 Respiration in yeast and the effect of temperature **Maths Skills** • Table and graphs • Translating information between graphical, numerical and algebraic forms	**Big Topics** 13 Energy and ecosystems 15 Nervous coordination and muscles **Practical Skills** RP10 Choice chambers Effect of exercise on heart rate **Maths Skills** • GPP • Efficiency • % Yield • Chi-squared • % change • Translating information between graphical, numerical and algebraic forms	**Big Topics** 16 Homeostasis 17 Inherited change 18 Populations and evolution **Practical Skills** 11 Dilution series of glucose **Maths Skills** • Ratios • % • Calculating probability • Statistical tests – Chi-Squared • Hardy-Weinberg equation • Translating information between graphical, numerical and algebraic forms	**Big Topics** 20 Gene expression 21 Recombinant DNA technology **Practical Skills** RP6b Size of bacterial population using serial dilution In vivo and in vitro cloning Gel electrophoresis **Maths Skills** • Plotting two variables of experimental data • Logarithmic scales • Orders of magnitude • Significant figures • Interpret graphical information • Interpret and understand tabular information	**Big Topics** 21 Recombinant DNA technology **Practical Skills** - Review required practical's **Maths Skills** - Review maths skills - Statistics and interpreting statistical data	
	Baseline testing (assessment 1) Paper 1 Mock (October/November) Paper 3 Mock (October/November)		PPE (March) Paper 2 Mock (February) Paper 3 Mock (February)			**External Exams:** **Paper 1 (Y12 Content) – 2 hours** **Paper 2 (Y13 Content) – 2 hours** **Paper 3 (Y12/13 Content) – 2 hours**

 **Embed your knowledge**	Exam questions Reading chapters of the text book Notes Weekly wider reading log Researching/Writing up required practical's Revision	Exam questions Reading chapters of the text book Notes Weekly wider reading log Researching/Writing up required practical's Revision	Revision Exam questions	

Extend your learning 	**Wider Reading** • Daniel Chamovitz – What a plant knows • Rebecca Skloot – The Immortal Life of Henrietta Lacks • Susan Greenfield – The Human Brain • Journals to keep up with current scientific developments, can use knowledge for the paper 3 essay. **Flashcard Challenge** Make flashcards for: • Key definitions (e.g. transcription, allele, osmoregulation) • Processes (e.g. meiosis, synaptic transmission) • Diagrams (e.g. nephron, chloroplast structure) Use apps like **Anki**, **Quizlet**, or physical cards. Test yourself daily and track progress. **Exam Question Breakdown** Pick a long-answer question (6–8 marks) and: • Highlight command words (e.g. explain, evaluate) • Plan your answer using bullet points • Write a full response and self-mark using a mark scheme You can also swap answers with a peer for feedback.	**Wider reading** Epigenetics Revolution – Nessa Carey The Selfish Genes – Richard Dawkins Genome: the autobiography of a species in 23 chapters - Matt Ridley **Websites** https://www.primrosekitten.com/ **Simulate Population Genetics** *Task:* Use Hardy-Weinberg equations to model allele frequency changes under different conditions (e.g., selection, mutation). **Concept Mapping** Create a **mind map** for each major topic: • Photosynthesis & Respiration • DNA, Genes & Protein Synthesis • Genetic Inheritance & Variation • Homeostasis • Ecosystems & Energy Transfer Use colour coding, diagrams, and links between ideas to show how concepts connect. **Teach It Back** Choose a topic and **teach it to someone else** (friend, family, or even record yourself): • Use diagrams and analogies • Answer their questions • Reflect on what you found hard to explain Teaching is a powerful way to reinforce your understanding.	Research a recent breakthrough in gene editing (e.g., CRISPR-Cas9) and present its potential applications and ethical implications. **Protein Folding and Disease** *Task:* Investigate how misfolded proteins contribute to diseases like Alzheimer's or Parkinson's. Present findings in a mini-poster format. **Practical Skills Review** Revise core practicals by: • Writing out the method and purpose • Identifying variables and controls • Explaining how results are analysed (e.g. using a calibration curve, calculating rate) Example: Investigating the effect of a named variable on enzyme activity.	