Year 7	Autumn 1 & Autumn 2			Spring 1 & Spring 2			Summer 1 & Summer 2		
	Biology	**Chemistry**	**Physics**	**Biology**	**Chemistry**	**Physics**	**Biology**	**Chemistry**	**Physics**
Curriculum Content	**Cells and systems**	**Particle model**	**Energy**	**Reproduction**	**The periodic table**	**Forces**	**Ecosystem and adaptations**	**Elements, atoms & separating techniques**	**Light, sound and the EM spectrum**
Prior knowledge (from previous year/ key stage).	Living things and habitats Year 6	Materials Yr 1 & 2 States of matter Yr4	KS2 Geography: Energy and Sustainability	Plants Yr 1-3 Animals Yr 1-5 Living things & habitats Yr 2,5	Properties and changes of materials Yr 5	Materials, Yr 2 Forces & Magnets Yr 3 Forces Yr 5	Living things and habitats Yr 2, 4 & 6 Plants Year 3 Animals Year 4	Materials Year 1 & 2 States of matter Yr4 Yr 7 Particle Model	Light Yr 3 & Yr 6 Sound Yr 4
Key skills	**Students will:** Biology: • Learn about **cells and use a microscope** to observe cells to build observation & practical skills. • Understand **how cells work** together to form tissues, organs, and organ systems • Explore **how our bodies function** and stay healthy, linking science to real life. Chemistry: • Understand how **solids, liquids, and gases** behave by looking at **particle model.** • Explain changes like **melting or boiling** verbally and through particle model diagrams • Learn how gases spread out (**diffusion**) and why things like air pressure happen. Physics: • Learn different forms of **energy** and how energy is **stored or transferred.** • Learn **energy changes** in everyday contexts—such as kettles boiling, bulbs, or vehicles moving. • Understand **conservation of energy** • Explore **how to reduce energy waste** and why energy efficiency matters at home and in the wider world. •			**Students will:** Biology: • Understand how **humans and animals reproduce**, including changes during puberty, the menstrual cycle, and fertilisation. • Learn how **babies develop** during pregnancy • Study how **plants reproduce**, including pollination, seed formation, and dispersal. Chemistry: • Understand **periodic table**. • Learn the difference between **elements, compounds, and mixtures**. • Developing practical and **enquiry skills** • Building scientific thinking by **spotting trends, making comparisons,** and using scientific language confidently. Physics: • Understand **forces** and exploring everyday forces like gravity, friction, air resistance, and magnetism through real-life examples. • Learn how to **measure forces** using equipment like newton meters • Using scientific thinking to explain **effects of balanced and unbalanced forces**			**Students will:** Biology: • Understand how **living things interact** in food chains, food webs, and ecosystems. • Learn how **plants and animals adapt** to survive in different habitats. • Explore **how environmental change** e.g. climate change/pollution **affect organisms.** Chemistry: • Understand that **substances are made of atoms**. • Learning how to **separate mixtures** using methods such as filtration, evaporation, distillation, and chromatography. • Developing **practical skills** by carrying out separation techniques safely and accurately. Physics: • Understand how **light and sound travel** • Learn about **reflection, refraction, dispersion, pitch, and amplitude**. • Explain **how we see and hear** • Explore the **electromagnetic spectrum** • Link science with **real-world applications**, such as glasses, sunglasses, fibre optics, X-ray, ultrasound, and communication technology.		
Assessment	- Mid unit test to identify progress and gaps - End of topic tests - End of year test -			- Mid unit test to identify progress and gaps - End of topic tests - End of year test			- Mid unit test to identify progress and gaps - End of topic tests - End of year test		
How can you help?	**Encourage your child to:** **Complete Sparx Science homework and independent learning**			**Encourage your child to:** **Complete Sparx Science homework and independent learning**			**Encourage your child to:** **Complete Sparx Science homework and independent learning**		

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Year 8	Autumn 1 & Autumn 2			Spring 1 & Spring 2			Summer 1 & Summer 2		
	Biology	**Chemistry**	**Physics**	**Biology**	**Chemistry**	**Physics**	**Biology**	**Chemistry**	**Physics**
Curriculum Content	**Nutrition & Diet**	**Fundamentals of reactions**	**Electricity**	**Biological Processes**	**Metals and Materials**	**Space**	**Health & Lifestyle**	**The Earth**	**Hidden forces**
Prior knowledge (from previous year/ key stage).	KS2 Animals Yr2-4, 6	KS2 Properties and changes of materials Yr5	KS2 Electricity Yr4, 6	KS2 plants *No prior knowledge of respiration*	KS2 Raw and synthetic materials	KS1 Seasonal changes Yr 1	KS2 Animals Yr2-4, 6	KS2 Rocks Yr3 Earth and Space Yr5	Materials, Yr 2 Forces & magnets Yr 3 Forces Yr 5
Key skills	**Students will:** Biology: • Learn about **human nutrition and metabolism** • Assess & critical analyse dietary needs and promote healthy eating habits • Awareness of public health and **disease prevention** Chemistry: • Understand different **chemical reaction, equations, and energy changes** • Be able to predict reaction outcomes, **balance equations, and apply conservation law** • Apply skills in practical investigation, data analysis, and applying concepts to real-world processes Physics: • Understand **electric circuits, current, voltage, resistance, and power** • Solve real-world problems and calculate cost of using electricity • Understand **static electricity** • Skills in building circuits, using measuring instruments, and interpreting data safely			**Students will:** Biology: • Acquire knowledge of key processes like **photosynthesis, respiration, and metabolism** • Understand **energy transfer, enzyme action, and cellular functions** • Understand how **leaves** are adapted • Learn the difference between **aerobic and anaerobic digestion** Chemistry: • Understand the properties, structure, and reactivity of **metals and alloys** • Gain knowledge of material types (metals, **polymers, ceramics, composites**) and their applications • Learn about **corrosion** and evaluating environmental impact of material use and extraction Physics: • Gain understanding of the **solar system**, stars, galaxies, and the universe's structure • Gain knowledge of planetary motion, **gravity**, light years, and space exploration technologies • Learn how gravity affects weight			**Students will:** Biology: • Gain knowledge of factors affecting physical and mental health, including diet, exercise, and substance use • Understand **disease prevention**, immune responses, and the impact of lifestyle choices • Learn how lifestyle affects long-term well-being Chemistry: • Gain knowledge of **Earth's** structure, **rock types**, and the rock cycle • Understand the natural processes like erosion, plate tectonics, and the carbon cycle • Understand environmental issues, human impact, and the importance of sustainability Physics: • Acquire knowledge of force types, **pressure** in fluids, and turning effects (moments) • Understand how forces interact, balance, and affect motion and stability • Be able to apply skills/knowledge to concepts in real-life situations like engineering, safety, and everyday mechanics		
Assessment	- Mid unit test to identify progress and gaps - End of topic tests - End of year test			- Mid unit test to identify progress and gaps - End of topic tests - End of year test			- Mid unit test to identify progress and gaps - End of topic tests - End of year test		
How can you help?	**Encourage your child to:** **Complete Sparx Science homework and independent learning** **Read for pleasure (First news; The Scientists; borrow Science book from Science library in room S2)**			**Encourage your child to:** **Complete Sparx Science homework and independent learning** **Read for pleasure (First news; The Scientists; borrow Science book from Science library in room S2)**			**Encourage your child to:** **Complete Sparx Science homework and independent learning** **Read for pleasure (First news; The Scientists; borrow Science book from Science library in room S2)**		

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Year 9	Autumn 1	Autumn 2	Spring 1 & Spring 2			Summer 1 & Summer 2		
	Biology	**KS3 Revision and end of KS3 test**	**Biology**	**Chemistry**	**Physics**	**Biology**	**Chemistry**	**Physics**
Curriculum Content	**Genetics and Evolution**	**KS3 content revision & Working scientifically**	**B1: Cell Biology**	**C1: Elements, atoms and periodic table**	**P1: Energy**	**B2: Organisation**	**C2: Bonding**	**P3: Density**
Prior knowledge (from previous year/ key stage).	KS3 Evolution and inheritance Yr 6	KS3 Year 7 and Year 8	KS3 content Yr 7 Autumn Yr7 Spring	KS3 content Yr 7 Autumn Yr7 Spring	KS3 content Yr 7 Autumn	KS3 content Yr 8 Spring	KS3 content Yr 8 Spring	KS3 content Yr 7 Autumn
Key skills	**Students will:** Biology: • Understand **inheritance, DNA structure, and genetic variation** • Gain knowledge of **natural selection, adaptation**, and **evolutionary processes** • Gather awareness of genetic data interpretation, **biodiversity**, and the evidence supporting evolution KS3 content revision and working scientifically: • Consolidate key concepts across biology, chemistry, and physics • Develop investigative skills: planning, predicting, observing, and evaluating • Understand how scientific evidence is collected, analysed, and used to draw conclusions and inform decisions		**Students will:** Biology: • Learn about cell structures, their functions, and the differences between **prokaryotic and eukaryotic cells** • Understand processes such as **cell division**, **microscopy**, and the **movement of substances** (diffusion, osmosis, active transport). • Develop **practical skills** in using microscopes Chemistry: • Learn about **atoms, elements, compounds, and mixtures** • Understand **atomic models**, subatomic particles, and how the periodic table is organised Physics: • Learn about different **energy stores**, transfers, and the principle of energy conservation • Do calculations involving **work done, power, and efficiency** • Gain knowledge of **renewable and non-renewable** energy sources			**Students will:** Biology: • Learn about the structure and function of major **organ systems** • Understand the role of **enzymes, blood vessels**, and transport systems in maintaining health • Gain knowledge of how lifestyle, diet, and disease affect the body Chemistry: • Learn about **ionic, covalent, and metallic bonding** and how atoms join to form compounds • Understand how bonding and structure influence the properties of substances • Gain knowledge of the structure and uses of materials such as **polymers, giant covalent structures, and nanoparticles** Physics: • Learn about the arrangement and behaviour of particles in **solids, liquids, and gases** • Understand **changes of state, internal energy, and specific heat capacity** • Gain knowledge **of density and pressure** in gases		
Assessment	- Mid unit test to identify progress and gaps - End of topic tests - End of KS3 test - End of year test		- Mid unit test to identify progress and gaps - End of topic tests - End of KS3 test - End of year test			- Mid unit test to identify progress and gaps - End of topic tests - End of KS3 test - End of year test		
How can you help?	**Encourage your child to:** **Complete Sparx Science homework and independent learning** **Read for pleasure (First news; The Scientists; borrow Science book from Science library in room S2)** **Visit BBC bitesize KS3 Science AQA curriculum and to use Science teams' channel for revision**		**Encourage your child to:** **Complete Sparx Science homework and independent learning** **Read for pleasure (First news; The Scientists; borrow Science book from Science library in room S2)** **Visit BBC bitesize KS3 Science AQA curriculum and to use Science teams' channel for revision**			**Encourage your child to:** **Complete Sparx Science homework and independent learning** **Read for pleasure (First news; The Scientists; borrow Science book from Science library in room S2)** **Visit BBC bitesize KS3 Science AQA curriculum and to use Science teams' channel for revision**		

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Year 10	Autumn 1 & Autumn 2			Spring 1 & Spring 2			Summer 1 & Summer 2		
	Biology	**Chemistry**	**Physics**	**Biology**	**Chemistry**	**Physics**	**Biology**	**Chemistry**	**Physics**
Curriculum Content	**B3: Infection & Response**	**C4: Chemical Changes**	**P2: Electricity**	**B4: Bioenergetics**	**C5: Energy changes** **C3: quantitative chemistry**	**P4: Atomic structure**	**B6: Ecosystems**	**C6: Rates of Reaction** **C8: Chemical Analysis**	**P5: Forces** **P6: Waves**
Prior knowledge (from previous year/ key stage).	KS3 content Yr 8 Autumn Yr 8 Summer	KS3 content Yr 8 Autumn	KS3 content Yr 8 Autumn	KS3 content Yr 8 Spring	KS3 content New content: Moles	KS3 content Yr 7 Summer	KS3 content Yr 7 Summer	KS3 content Yr 8 autumn	KS3 content Yr 7 Spring Yr 8 Summer
Assessment objectives (specific skills and knowledge students are expected to demonstrate)	GCSE Science is assessed through a mix of knowledge, application, and scientific thinking. **AO1: Demonstrate knowledge and understanding of scientific ideas, techniques, and procedures (about 40%)** • Explaining and remembering key scientific facts, terms, and concepts • Some marks come from direct recall, but most require understanding how things work **AO2: Application of Knowledge and understanding to solve problems in familiar and unfamiliar contexts (about 40%)** • Using science knowledge to solve problems or explain real-world situations • Involves applying learning to new or unfamiliar scenarios **AO3: Analysis, Interpretation and Evaluation of information, evidence and ideas (about 20%)** • Looking at data, spotting patterns, and explaining what results mean • Evaluating experiments and understanding how scientific ideas are tested **Practical Skills (15% of total marks)** • Based on required practical experiments completed in school for AQA GCSE Science (Combined/Triple) • Exam questions expect pupils to develop hypotheses, plan and carry out investigations, record and analyse data, state ways to improve an investigation. and draw conclusions. • Any sensible method can earn marks if it achieves the outcome • Can be assessed through AO1, AO2, or AO3-style questions • Students can receive marks for any suitable method or plan to achieve an outcome **Maths in Science - Maths skills are built into the science exams:** • Biology: 10% allocated to maths skills • Chemistry: 20% allocated to maths skills • Physics: 30% allocated to maths skills • Combined Science: 20% (split across Biology, Chemistry, and Physics in a 1:2:3 ratio) allocated to maths skills • Questions include calculations, using graphs, units, percentages, and formulas **Extended Response Questions-** 6-mark question which asks students to write a longer, structured answer that show clear and logical thinking to explain a scientific idea, process, or calculation clearly and logically. These questions test students' ability to develop and organise their thinking, not just recall facts. Foundation Tier: At least 10% of marks will come from extended response questions Higher Tier: At least 15% of marks will come from extended response questions • Could involve explanations or multi-step calculations • No marks for grammar or spelling alone, but answers must make sense and follow a clear line of reasoning • Level-specific expectations • Students should show they can develop a coherent, relevant argument or solve complex problems step by step								

Answers are marked in levels (not per point), based on:

- Scientific content (accuracy and relevance)
- Structure (clear and logical flow)
- Application and explanation (how well ideas are developed)

Marking Levels for 6-Mark Questions

Level	Marks Awarded	What it Means
Level 3	5–6 marks	Answer is well-developed, mostly accurate and relevant, ideas are explained clearly and logically and covers key scientific points in full.
Level 2	3–4 marks	Answer has some structure and partial understanding or explanation. Some scientific content is incorrect or incomplete, but key ideas are attempted.
Level 1	1–2 marks	Answer is basic or limited, with little structure, and shows minimal understanding. May include a few correct facts but lacks explanation.
Level 0	0 marks	No relevant content or completely incorrect.

Physics Equations

Students must learn to use 23 Physics equations (21 for Combined Science) - set of equations will be given in the exam — students must choose and use the right one

Key skills

Students will:

Biology:

- Learn about how **pathogens cause disease** and how the body defends itself through the immune system
- Understand the role of **vaccinations, antibiotics**, and lifestyle in preventing and controlling infections
- Gain knowledge of **how diseases spread** and the importance of hygiene and public health measures,

Chemistry

- Learn about **acids, bases, and the pH scale**, including **neutralisation** reactions
- Understand **metal reactivity, displacement reactions, and extraction of metals**
- Gain **knowledge of electrolysis** and its practical applications in industry and everyday life

Physics

- Learn about **electric current, voltage, resistance**, and how they relate in circuits
- Understand how to use and **interpret series and parallel circuits** safely
- Gain knowledge of **practical applications** like household electricity and energy transfer

Students will:

Biology

- Learn about **photosynthesis**
- Understand **aerobic and anaerobic respiration**
- Learn factors affecting these processes and importance for growth and survival

Chemistry

C3: Quantitative Chemistry

- Learn how to calculate **relative formula masses**, **moles**, and chemical amounts
- Understand how **to balance equations** and use them in calculations

C5: Energy Changes

- Learn about **exothermic and endothermic** reactions and energy transfer
- Understand **energy profiles**, bond breaking and forming, and activation energy
- Learn about **fuels, batteries, hydrogen cells**

Physics

- Learn about the **structure of atoms**
- Understand **isotopes, ions**, and how atoms emit radiation
- Understand how atomic models have developed and the basics of **nuclear radiation** and its uses

Students will:

Biology

- Learn about **ecosystems**
- Understand **food chains and biodiversity**
- Gain knowledge of **human impact** on ecosystems

Chemistry

C6: Rates of Reaction

- Learn about rate of **chemical reactions**
- Understand factors that affect reaction rates
- Understand **collision theory** & **reversible reactions**

C8: Chemical Analysis

- Learn how to identify **pure substances**
- Understand methods for **chemical testing**, e.g. flame tests, gas tests, and chromatography

Physics

P5: Forces

- Learn about different **types of forces**
- Understand key concepts like speed, velocity, acceleration, weight, mass, and Newton's laws
- Gain knowledge of how **forces affect motion and safety in real-life contexts**

P6: Waves

- Learn about the properties of **waves**
- Understand **transverse and longitudinal waves**
- Understand **electromagnetic waves** and their uses
-

Assessment	- Mid unit test to identify progress and gaps - End of topic tests - Mocks		
How can you help?	**Encourage your child to:** **Complete Sparx Science homework** **Encourage short regular Revision using youtube revision videos (incognito, free science lessons, primrose kitten)** **Encourage pupils to read through AQA revision guide and create revision mind maps** **Encourage use of websites for revision e.g. BBC bitesize, or save my exams, physics and maths tutor.** **Help with Practice Exam Questions or encourage them to try past paper questions — especially 6-markers** **Encourage them to ask for help when stuck** **Talk about careers in science, medicine, engineering, or tech.** **Talk About Science at Home and link topics to everyday life (e.g. cooking = chemical changes, electricity at home, body systems)** **Help them see that science can open doors to exciting futures**	**Encourage your child to:** **Complete Sparx Science homework** **Encourage short regular Revision using youtube revision videos (incognito, free science lessons, primrose kitten)** **Encourage pupils to read through AQA revision guide and create revision mind maps** **Encourage use of websites for revision e.g. BBC bitesize, or save my exams, physics and maths tutor.** **Help with Practice Exam Questions or encourage them to try past paper questions — especially 6-markers** **Encourage them to ask for help when stuck** **Talk about careers in science, medicine, engineering, or tech.** **Talk About Science at Home and link topics to everyday life (e.g. cooking = chemical changes, electricity at home, body systems)** **Help them see that science can open doors to exciting futures**	**Encourage your child to:** **Complete Sparx Science homework** **Encourage short regular Revision using youtube revision videos (incognito, free science lessons, primrose kitten)** **Encourage pupils to read through AQA revision guide and create revision mind maps** **Encourage use of websites for revision e.g. BBC bitesize, or save my exams, physics and maths tutor.** **Help with Practice Exam Questions or encourage them to try past paper questions — especially 6-markers** **Encourage them to ask for help when stuck** **Talk about careers in science, medicine, engineering, or tech.** **Talk About Science at Home and link topics to everyday life (e.g. cooking = chemical changes, electricity at home, body systems)** **Help them see that science can open doors to exciting futures**
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	Why: Hilarious, yet rigorous scientific thinking. Encourages critical reasoning, problem-solving, and applying knowledge creatively — perfect for bright KS4 students. 4. "Women in Science: 50 Fearless Pioneers Who Changed the World" by Rachel Ignotofsky Topic: Science history and diversity Why: A visually engaging and inspiring look at real scientists across all disciplines — great for motivation and broadening scientific perspective.	Why: Hilarious, yet rigorous scientific thinking. Encourages critical reasoning, problem-solving, and applying knowledge creatively — perfect for bright KS4 students. 4. "Women in Science: 50 Fearless Pioneers Who Changed the World" by Rachel Ignotofsky Topic: Science history and diversity Why: A visually engaging and inspiring look at real scientists across all disciplines — great for motivation and broadening scientific perspective.	Why: Hilarious, yet rigorous scientific thinking. Encourages critical reasoning, problem-solving, and applying knowledge creatively — perfect for bright KS4 students. 4. "Women in Science: 50 Fearless Pioneers Who Changed the World" by Rachel Ignotofsky Topic: Science history and diversity Why: A visually engaging and inspiring look at real scientists across all disciplines — great for motivation and broadening scientific perspective.

Year 11	Autumn 1 & Autumn 2			Spring 1 & Spring 2			Summer 1 & Summer 2		
	Biology	**Chemistry**	**Physics**	**Biology**	**Chemistry**	**Physics**	**Biology**	**Chemistry**	**Physics**
Curriculum Content	**B5: Homeostasis**	**C7: Organic chemistry** **C9: Chemistry of Atmosphere**	**P7: Magnetism**	**B7: Inheritance, variation and evolution**	**C10: Using resources**	**P8: Space (Triple Only)** **GCSE revision**	**GCSE revision**	**GCSE revision**	**GCSE revision**
Prior knowledge (from previous year/ key stage).	KS3 content Yr 7 Spring Reproduction	KS3 content Year 8 Summer Earth	KS3 content Yr 8 Summer Hidden forces	KS3 content Yr 7 summer ecosystems Yr 9 Autumn	KS3 content	KS3 and KS4 Yr 8 Spring Space	KS3 and KS4	KS3 and KS4	KS3 and KS4
Assessment objectives (specific skills and knowledge students are expected to demonstrate)	GCSE Science is assessed through a mix of knowledge, application, and scientific thinking. **AO1: Demonstrate knowledge and understanding of scientific ideas, techniques, and procedures (about 40%)** • Explaining and remembering key scientific facts, terms, and concepts • Some marks come from direct recall, but most require understanding how things work **AO2: Application of Knowledge and understanding to solve problems in familiar and unfamiliar contexts (about 40%)** • Using science knowledge to solve problems or explain real-world situations • Involves applying learning to new or unfamiliar scenarios **AO3: Analysis, Interpretation and Evaluation of information, evidence and ideas (about 20%)** • Looking at data, spotting patterns, and explaining what results mean • Evaluating experiments and understanding how scientific ideas are tested **Practical Skills (15% of total marks)** • Based on required practical experiments completed in school for AQA GCSE Science (Combined/Triple) • Exam questions expect pupils to develop hypotheses, plan and carry out investigations, record and analyse data, state ways to improve an investigation. and draw conclusions. • Any sensible method can earn marks if it achieves the outcome • Can be assessed through AO1, AO2, or AO3-style questions • Students can receive marks for any suitable method or plan to achieve an outcome **Maths in Science - Maths skills are built into the science exams:** • Biology: 10% allocated to maths skills • Chemistry: 20% allocated to maths skills • Physics: 30% allocated to maths skills • Combined Science: 20% (split across Biology, Chemistry, and Physics in a 1:2:3 ratio) allocated to maths skills • Questions include calculations, using graphs, units, percentages, and formulas **Extended Response Questions-** 6-mark question which asks students to write a longer, structured answer that show clear and logical thinking to explain a scientific idea, process, or calculation clearly and logically. These questions test students' ability to develop and organise their thinking, not just recall facts. Foundation Tier: At least 10% of marks will come from extended response questions Higher Tier: At least 15% of marks will come from extended response questions • Could involve explanations or multi-step calculations • No marks for grammar or spelling alone, but answers must make sense and follow a clear line of reasoning • Level-specific expectations								

<table>
<tr><td></td><td colspan="3">
Students should show they can develop a coherent, relevant argument or solve complex problems step by step
Answers are marked in levels (not per point), based on:
Scientific content (accuracy and relevance)
Structure (clear and logical flow)
Application and explanation (how well ideas are developed)
Marking Levels for 6-Mark Questions
<table>
<tr><th>Level</th><th>Marks Awarded</th><th>What it Means</th></tr>
<tr><td>Level 3</td><td>5–6 marks</td><td>Answer is well-developed, mostly accurate and relevant, ideas are explained clearly and logically and covers key scientific points in full.</td></tr>
<tr><td>Level 2</td><td>3–4 marks</td><td>Answer has some structure and partial understanding or explanation. Some scientific content is incorrect or incomplete, but key ideas are attempted.</td></tr>
<tr><td>Level 1</td><td>1–2 marks</td><td>Answer is basic or limited, with little structure, and shows minimal understanding. May include a few correct facts but lacks explanation.</td></tr>
<tr><td>Level 0</td><td>0 marks</td><td>No relevant content or completely incorrect.</td></tr>
</table>
Physics Equations
Students must learn to use 23 Physics equations (21 for Combined Science) - set of equations will be given in the exam — students must choose and use the right one
</td></tr>
<tr><td>Key skills</td><td>
Students will:
Biology:
Learn what are cells are and use a microscope to observe cells to build observation & practical skills.
Understand how cells work together to form tissues, organs, and organ systems
Explore how our bodies function and stay healthy, linking science to real life.
Chemistry:
Understand how solids, liquids, and gases behave by looking at particle model.
Explain changes like melting or boiling verbally and through particle model diagrams
Learn how gases spread out (diffusion) and why things like air pressure happen.
Build confidence with abstract ideas (like steam, ice, or perfume spreading).
Physics:
Learn different forms of energy and how energy is stored or transferred.
Learn energy changes in everyday contexts—such as kettles boiling, bulbs, or vehicles moving.
Understand conservation of energy
Explore how to reduce energy waste and why energy efficiency matters at home and in the wider world.
Building numeracy and reasoning skills
</td><td>
Students will:
Biology
Understand genetic inheritance including DNA, genes, and chromosomes
Explain how variation arises through genetic and environmental factors
Describe the process of natural selection and evolution
Analyse genetic crosses using Punnett squares and probability
Evaluate modern developments such as genetic engineering and selective breeding
Chemistry
Understand the sustainable use of Earth's resources, including potable water and life cycle assessments
Explain methods of waste water treatment and recycling
Evaluate the environmental impact of different materials and industrial processes
Compare finite and renewable resources
Physics
Describe the life cycle of stars and the structure of the universe
Understand the concepts of orbital motion, gravity, and red-shift
Explain how evidence supports the Big Bang theory and our understanding of cosmology
</td><td>
Students will:
Recall and apply scientific knowledge across biology, chemistry, and physics
Develop exam strategies, such as how to approach multiple choice, data analysis, and 6-mark questions
Use maths and practical skills to support scientific arguments
Learn how to revise effectively, experimenting with different techniques (mind maps, active recall, spaced repetition)
Identify and close knowledge gaps by reviewing topic checklists and exam feedback
Practice applying knowledge to unfamiliar questions, especially in real-life contexts
Reinforce key vocabulary and use of scientific terminology accurately
Strengthen working scientifically skills,
Improve mathematical fluency in calculations, graph work, and use of units
Work with past papers to become familiar with question styles and time management
Gain confidence in answering extended response questions with structure and reasoning
Review required practicals, understanding their purpose, method, results, and how they can be assessed in exams
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<table>
<tr><td></td><td></td><td>• Apply physics to space exploration and satellite technology</td><td></td></tr>
<tr><td></td><td colspan="3">Scientific Knowledge & Understanding
• Learn core concepts in biology, chemistry, and physics
• Understand how science explains the natural world and technological developments
Application of Science
• Apply knowledge to unfamiliar situations, real-life problems, and practical contexts
• Use science to explain observations and solve problems
Practical & Experimental Skills
• Plan and carry out scientific investigations
• Use equipment safely and accurately
• Analyse results and draw conclusions based on evidence
Data Handling & Mathematical Skills
• Interpret tables, graphs, and charts
• Perform calculations using formulas, units, and percentages
• Develop confidence with numeracy in scientific contexts
Analytical Thinking
• Evaluate methods and results
• Identify patterns and trends in data
• Justify conclusions using evidence
Communication of Scientific Ideas
• Write clear explanations using correct scientific vocabulary
• Structure longer responses logically (especially 6-mark questions)
• Present arguments and balanced evaluations when needed
Working Scientifically
• Understand how scientific methods are used to test ideas
• Reflect on reliability, accuracy, and limitations of evidence
• Develop a critical, questioning approach to information</td></tr>
<tr><td>Assessment</td><td colspan="3">- Mid unit test to identify progress and gaps
- End of topic tests
- Mocks</td></tr>
<tr><td>How can you help?</td><td>Encourage your child to:
Complete Sparx Science homework

Encourage short regular Revision using youtube revision videos (incognito, free science lessons, primrose kitten)

Encourage pupils to read through AQA revision guide and create revision mind maps

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	Help with Practice Exam Questions or encourage them to try past paper questions — especially 6-markers **Encourage them to ask for help when stuck** **Talk about careers in science, medicine, engineering, or tech.** **Talk About Science at Home and link topics to everyday life (e.g. cooking = chemical changes, electricity at home, body systems)** **Help them see that science can open doors to exciting futures**	**Help with Practice Exam Questions or encourage them to try past paper questions — especially 6-markers** **Encourage them to ask for help when stuck** **Talk about careers in science, medicine, engineering, or tech.** **Talk About Science at Home and link topics to everyday life (e.g. cooking = chemical changes, electricity at home, body systems)** **Help them see that science can open doors to exciting futures**	**Help with Practice Exam Questions or encourage them to try past paper questions — especially 6-markers** **Encourage them to ask for help when stuck** **Talk about careers in science, medicine, engineering, or tech.** **Talk About Science at Home and link topics to everyday life (e.g. cooking = chemical changes, electricity at home, body systems)** **Help them see that science can open doors to exciting futures**
Recommended reading	**1**. "The Selfish Gene" by Richard Dawkins (Young Readers Edition available) Topic: Biology / Evolution / Genetics Why: A fascinating introduction to evolutionary biology and gene theory, written in an accessible way. Encourages deeper thinking about how and why life exists as it does. 2. "The Science of Everyday Life" by Marty Jopson Topic: Physics / Chemistry in daily life Why: Makes abstract GCSE science topics feel real. Covers how everyday objects and phenomena work, using clear explanations and humour. 3. "What If? Serious Scientific Answers to Absurd Hypothetical Questions" by Randall Munroe Topic: General science, Physics-focused Why: Hilarious, yet rigorous scientific thinking. Encourages critical reasoning, problem-solving, and applying knowledge creatively — perfect for bright KS4 students. 4. "Women in Science: 50 Fearless Pioneers Who Changed the World" by Rachel Ignotofsky Topic: Science history and diversity Why: A visually engaging and inspiring look at real scientists across all disciplines — great for motivation and broadening scientific perspective.	1. "The Selfish Gene" by Richard Dawkins (Young Readers Edition available) Topic: Biology / Evolution / Genetics Why: A fascinating introduction to evolutionary biology and gene theory, written in an accessible way. Encourages deeper thinking about how and why life exists as it does. 2. "The Science of Everyday Life" by Marty Jopson Topic: Physics / Chemistry in daily life Why: Makes abstract GCSE science topics feel real. Covers how everyday objects and phenomena work, using clear explanations and humour. 3. "What If? Serious Scientific Answers to Absurd Hypothetical Questions" by Randall Munroe Topic: General science, Physics-focused Why: Hilarious, yet rigorous scientific thinking. Encourages critical reasoning, problem-solving, and applying knowledge creatively — perfect for bright KS4 students. 4. "Women in Science: 50 Fearless Pioneers Who Changed the World" by Rachel Ignotofsky Topic: Science history and diversity Why: A visually engaging and inspiring look at real scientists across all disciplines — great for motivation and broadening scientific perspective.	. "The Selfish Gene" by Richard Dawkins (Young Readers Edition available) Topic: Biology / Evolution / Genetics Why: A fascinating introduction to evolutionary biology and gene theory, written in an accessible way. Encourages deeper thinking about how and why life exists as it does. 2. "The Science of Everyday Life" by Marty Jopson Topic: Physics / Chemistry in daily life Why: Makes abstract GCSE science topics feel real. Covers how everyday objects and phenomena work, using clear explanations and humour. 3. "What If? Serious Scientific Answers to Absurd Hypothetical Questions" by Randall Munroe Topic: General science, Physics-focused Why: Hilarious, yet rigorous scientific thinking. Encourages critical reasoning, problem-solving, and applying knowledge creatively — perfect for bright KS4 students. 4. "Women in Science: 50 Fearless Pioneers Who Changed the World" by Rachel Ignotofsky Topic: Science history and diversity Why: A visually engaging and inspiring look at real scientists across all disciplines — great for motivation and broadening scientific perspective.