

Year 7

<b>Content (Intent)</b>	<b>Links to prior learning</b>	<b>Skills and Assessment (Implementation)</b>	<b>Expected Learning Outcomes (Impact)</b>
<p><b>Term 1</b>  <b>Introduction to Science</b>            Lab Safety            Lab Equipment            Bunsen Burners            Taking measurements            Hypothesis and Variables            Planning            Maths Skills            Graphs            Conclusions and Evaluations</p>	<p>Assessing risks            Planning practical's            Fair Tests            Drawing Graphs</p>	<p>Skills:            Practical Skills, Exam Skills, Subject Knowledge, Maths skills, literacy</p> <p>Assessment            Formative assessment including quizzes.</p>	<p>Familiarise yourself with the Science lab and know how to be safe.</p> <p>Plan and carryout practical work.</p> <p>Analyse results and draw conclusions.</p> <p>Evaluate practical work</p>
<p><b>Terms 2-5 Different classes will learn different topics at different times covering Biology Chemistry and Physics</b></p>			
<p><b>Biology</b>  <b>Cells</b>            Observing Cells            Plant and Animal Cells            Specialised Cells            Movement of substances            Unicellular organisms</p> <p><b>Body Systems</b>            Levels of Organisation            Gas Exchange            Breathing            Skeleton</p>	<p><b>KS2</b></p> <p>Structure and function of the skeleton</p>	<p>Skills:            Practical Skills, Exam Skills, Subject Knowledge, Maths skills, literacy</p> <p>Assessment:            End of topic tests covering content from each topic. Tests includes multiple choice, structured, closed short answer, and open response questions</p>	<p>Draw and label the fundamental building blocks of life. Describe the role of each organelle.</p> <p>Compare the similarities and differences in plant and animal cells.</p> <p>Explain and give examples of how cells can be specialised to having a particular job.</p> <p>Describe what is meant by unicellular organisms and give examples.</p> <p>Describe what is meant by cells, tissues, organs and</p>

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<p>Movement</p> <p><b>Reproduction</b> Adolescence Reproductive Systems Fertilisation and Implantation Development of a fetus Menstrual Cycle Flowers and Pollination Fertilisation and Germination Seed Dispersal</p>	<p>Function of muscles Structure and function of the teeth Blood and the heart</p> <p>Structure of a flowering plants Turning seeds into plants Plant reproduction Gestation Child development Puberty Plant and animal reproduction Development of amphibians, mammals, insects, plants and birds</p>		<p>organ systems, Give examples of each.</p> <p>Explain the role of the skeleton, muscles and joints in movement.</p> <p>Describe the function of the male and female reproductive systems.</p> <p>Explain how sex cells become babies.</p> <p>Describe the changes in the menstrual cycle.</p> <p>Explain how flowering plants reproduce and seeds are dispersed.</p>
<p><b>Chemistry</b> <b>Particles</b> States of matter State changes Heating and cooling Curves Diffusion Gas Pressure</p> <p><b>Elements, Atoms and Compounds</b> Elements Atoms Compounds Chemical Formula</p> <p><b>Reactions</b></p>	<p><b>KS2</b> Solids, liquids and gases Changes of state</p>	<p>Skills: Practical Skills, Exam Skills, Subject Knowledge, Maths skills, literacy</p> <p>Assessment: End of topic tests covering content from each topic. Tests includes multiple choice, structured, closed short answer, and open response questions</p>	<p>Describe the particle model and how particles behave in solids, liquids and gases.</p> <p>Identify the changes of state and explain the shape of heating and cooling curves.</p> <p>Describe the differences between elements and compounds.</p> <p>Represent chemicals using chemical formula.</p>

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<p>Chemical Reactions Word Equations Burning Fuels Thermal Decomposition Endo and Exothermic Reactions</p> <p><b>Acids and Alkalis</b> Acids and Alkalis Indicators pH Neutralisation Making Salts</p>			<p>Represent chemical reactions with word equations.</p> <p>Describe different types of chemical reactions.</p> <p>Name the properties of acids and alkalis.</p> <p>Expalin how to identify acids and alkalis.</p> <p>Predict the products of the reactions between acids and alkalis.</p>
<p><b>Physics</b> <b>Forces</b> Squashing and Stretching Drag Forces and friction Non-Contact Forces Balanced and Unbalanced Forces</p> <p><b>Sound</b> Sound Waves Loudness and Pitch Ears Echoes and Ultrasound</p>	<p><b>KS2</b> Introduction to forces Introduction to magnets including how magnets work, magnetic materials and strength of magnets</p> <p>Isaac Newton and his contribution to Science Forces including— air resistance, friction and water resistance Measuring forces</p> <p>Making sounds Introduction to pitch and changing the pitch of sound</p>	<p>Skills: Practical Skills, Exam Skills, Subject Knowledge, Maths skills, literacy</p> <p>Assessment: End of topic tests covering content from each topic. Test includes multiple choice, structured, closed short answer, and open response questions</p>	<p>Identify different types of contact forces and non-contact describe their effects.</p> <p>Explain the effects of balanced and unbalanced forces on the motion of an object.</p> <p>Describe how sound reaches your ear from the source that it came from.</p>

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<p><b>Light</b>            Light waves            Reflection            Refraction            Eyes            Colour</p>	<p>Light sources            Transparent, translucent and opaque            Reflections            Shadows            The eyes and protecting eyes from sunlight            Reflection—Vision around a corner            Basic structure and function of the eye            Changing shadows</p>		<p>Explain how wave properties effect how a sound will sound.</p> <p>Identify the parts of the ear and their role in detecting sound</p> <p>Describe the properties of light waves and compare to sound waves.</p> <p>Describe the properties of waves.</p> <p>Identify the parts of the eye and their role in how we detect light.</p> <p>Explain why we see different objects as different colours.</p>
<p><b>Term 5-6 Revision</b></p>	<p>Revisit all year 7 Science topics.</p>	<p>Skills:            How to revise            Practical Skills, Exam Skills, Subject Knowledge, Maths skills, literacy            Assessment:            End of year test covering content from this topic. Test includes multiple choice, structured, closed short answer, and open response questions</p>	<p>To consolidate knowledge and understanding of the year 7 Science topics.</p>

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<b>Space</b> The night sky The Solar System Day and night and the seasons The moon	<b>KS2</b> Planets and the solar system Movement of planets The moon including phases of the moon and how the movement of the moon Day and night	<b>Assessment:</b> Present your knowledge of this topic to another class	To describe the objects that are seen in the night sky.  Explain why we experience day and night and the season.  Understand why the moon changes in appearance and its effect on the tides.

Year 8

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<b>Term 1 Practical Skills</b>	Y7 Introduction to Science	Skills: Practical Skills, Exam Skills, Subject Knowledge, Maths skills, literacy  Assessment Formative assessment including quizzes.	Plan and carryout practical work.  Analyse results and draw conclusions.  Evaluate practical work
<b>Terms 2-5 Different classes will learn different topics at different times covering Biology Chemistry and Physics</b>			
<b>Biology Health and Lifestyles</b> Nutrients Food Tests Unhealthy Diet Digestive system Digestion Drugs Alcohol Smoking	<b>KS2</b> Leading a healthy lifestyle  Impact of alcohol on the body Impact of smoking on the body Impact of diet and exercise on the body	Skills: Practical Skills, Exam Skills, Subject Knowledge, Maths skills, literacy  Assessment: End of topic tests covering content from each topic. Tests includes multiple	Explain the benefits of a balanced diet.  Describe and explain what happens to food from the start to the end of the digestive systems.

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<p><b>Ecosystems</b>            Photosynthesis            Leaves            Minerals            Chemosynthesis            Respiration            Food chains and webs            Ecosystems</p> <p><b>Adaption and Inheritance</b>            Competition            Adaptions            Variation            Inheritance            Natural Selection            Extinction</p>	<p>Louis Pasteur</p> <p>Conditions plants need to grow and flourish</p> <p>Habitats</p> <p>Deforestation</p> <p>Formation of fossils            Evolution by natural selection            Learning from fossils            Adaptations of plants and animals            Different types of living organisms            Grouping living organisms            Difference between vertebrate and invertebrate            Carl Linnaeus and classification            Vertebrates and invertebrates            Types of tree</p>	<p>choice, structured, closed short answer, and open response questions</p>	<p>Understand the effects and risks of drugs, alcohol and smoking</p> <p>Described the processes producers can use to create food.</p> <p>Explain how the leaf is adapted for photosynthesis.</p> <p>Compare the different types of respiration.</p> <p>Using food chains and webs predict the impact of changes to an ecosystem.</p> <p>Explain how living things have adapted to survive.</p> <p>Using example explain the risk of extinction to species and what can be done to prevent this from happening.</p>

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<p><b>Chemistry</b> <b>Periodic Table</b> Metals and non metals Group 1 Group 7 Group 0</p> <p><b>Separating mixtures</b> Mixtures Solutions Solubility Filtration Evaporation and Distillation Chromatography</p> <p><b>Metals and Acids</b> Metals and Acids Metals and Oxygen Metals and water Displacement Extracting Metals</p>	<p><b>KS2</b></p> <p>Separating a mixture of solids Solutes, solvents and solutions Separating a solution</p> <p>Y7 Acids and Alkalis</p>	<p>Skills: Practical Skills, Exam Skills, Subject Knowledge, Maths skills, literacy</p> <p>Assessment: End of topic tests covering content from each topic. Tests includes multiple choice, structured, closed short answer, and open response questions</p>	<p>Compare the properties of metals and non metals.</p> <p>Compare the properties of group 1, 7 and 0. Outline how to separate different types of mixture using practical techniques.</p> <p>Predict the products of reactions of metals with acid, oxygen and water using the reactivity series.</p> <p>Describe how displacement reactions take place and use the reactivity series to predict products.</p>

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<p><b>Rocks</b>  Earth and the atmosphere  Sedimentary  Igneous  Metamorphic  Rock Cycle</p>	<p>KS2  Introduction to rocks  Different types of rock  Introduction to soil</p>		<p>Describe the composition of the Earth and its atmosphere.</p> <p>Describe the properties of each rock type.</p> <p>Explain how one rock type can become another</p>
<p><b>Physics</b>  <b>Electricity and Magnetism</b>  Static Electricity  Current  Potential Difference  Resistance  Series and parallel circuits  Magnets and magnetic fields  Electromagnets</p> <p><b>Energy</b>  Energy Stores  Energy Transfers  Heat transfers  Energy Resources  Power  Work done</p>	<p><b>KS2</b>  Source of electricity  Circuit components  Electrical conductors  Drawing circuit diagrams</p> <p>Pulleys, gears and levers</p>	<p>Skills:  Practical Skills, Exam Skills, Subject Knowledge, Maths skills, literacy</p> <p>Assessment:  End of topic tests covering content from each topic. Test includes multiple choice, structured, closed short answer, and open response questions</p>	<p>Describe what causes electricity.</p> <p>Describe how current, potential difference and resistance is measured and changes in series and parallel circuits.</p> <p>Describe the features of a magnetic field.</p> <p>Compare the properties of permanent and electromagnets.</p> <p>Identify different energy stores and transfers.</p> <p>Explain how heat is transferred.</p> <p>Evaluate the use of the different energy resources.</p> <p>Calculate power and work done.</p>



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<p><b>Motion and Pressure</b> Speed Distance Time Graphs Pressure Moments</p>	<p>Pulleys, gears and levers</p>		<p>Calculate speed.</p> <p>Use distance time graphs to describe a journey.</p> <p>Explain the factors that effect pressure in solids, liquids and gases.</p> <p>Calculate turning force and balance moments.</p>
<p><b>Term 5-6 Revision</b></p> <p><b>Materials</b> Polymers Composites Ceramics</p> <p><b>Saving the world Project</b> Carbon Cycle Recycling Climate Change</p>	<p>Revisit all year 8 Science topics.</p> <p><b>KS2</b> Sorting materials Using materials Choosing which material to use</p>	<p><b>Skills:</b> How to revise Practical Skills, Exam Skills, Subject Knowledge, Maths skills, literacy</p> <p><b>Assessment:</b> End of year test covering content from this topic. Test includes multiple choice, structured, closed short answer, and open response questions</p> <p><b>Assessment:</b> Present your knowledge of this topic to another class</p>	<p>To consolidate knowledge and understanding of the year 7 Science topics.</p> <p>Compare the uses and properties of different materials.</p> <p>Explain the problems and potential solutions to climate change</p>

## **Resources to support learning**

### Textbooks used in lessons

Year 7: Activate 1 Student Book – Oxford University Press

Year 8: Activate 2 Student Book – Oxford University Press

### Revision Guides

CGP KS3 Science Complete Revision and Practice [KS3 Science Complete Revision & Practice - Foundation \(with Online Edition\): superb for Years 7, 8 and 9 \(CGP KS3 Revision & Practice\) : CGP Books, CGP Books: Amazon.co.uk: Books](#)

CGP KS3 Science Revision Questions [KS3 Science Revision Question Cards: ideal for Years 7, 8 and 9 \(CGP KS3 Question Cards\) : CGP Books, CGP Books: Amazon.co.uk: Books](#)

### Revision Websites

BBC Bitesize [KS3 Science - BBC Bitesize](#)

Kerboodle [Kerboodle](#)

Seneca  [Free Key Stage 3 Science Revision | Seneca \(senecalearning.com\)](#)