

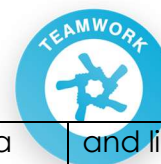
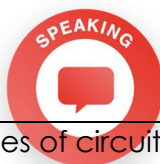


# Science Scheme of Learning

This scheme of work outlines the content taught and skills gained to ensure students at The Sky Academy gain the best possible outcomes both academically and in the wider world.

Year 6/7 A

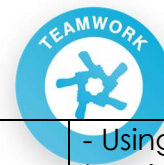
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Light</b> ( <i>Physics</i> )	<b>Electricity</b> ( <i>Physics</i> )	<b>Living Things &amp; Classification</b> ( <i>Biology</i> )	<b>Evolution &amp; Inheritance</b> ( <i>Biology</i> )	<b>Animals Including Humans</b> ( <i>Biology</i> )	<b>Working Scientifically</b>
<ul style="list-style-type: none"> <li>- Light travels in straight lines</li> <li>- How we see objects (light reflects into our eyes)</li> <li>- Reflection and angle of incidence = angle of reflection</li> <li>- Formation of shadows and how they change</li> <li>- Transparent, translucent and opaque materials</li> <li>- The role of the eye in seeing</li> </ul>	<ul style="list-style-type: none"> <li>- Circuit components and correct symbols</li> <li>- Effect of voltage on brightness and volume</li> <li>- Building series circuits</li> <li>- Conductors and insulators</li> <li>- Comparing components: bulbs, buzzers, motors</li> <li>- Troubleshooting broken circuits</li> </ul>	<ul style="list-style-type: none"> <li>- Classifying living things into broad groups (microorganisms, plants, animals)</li> <li>- Sub-groups of vertebrates and invertebrates</li> <li>- Observing and classifying using keys</li> <li>- Microorganisms: helpful and harmful</li> <li>- Recognising similarities and differences within and between groups</li> </ul>	<ul style="list-style-type: none"> <li>- Recognising that traits are inherited</li> <li>- Fossils as evidence of past life and change</li> <li>- Adaptation leading to survival (natural selection)</li> <li>- Differences between inherited and environmental traits</li> <li>- Extinction and evolution over time</li> </ul>	<ul style="list-style-type: none"> <li>- Main parts and functions of the circulatory system</li> <li>- Role of heart, blood vessels and blood</li> <li>- Impact of exercise, diet and drugs on the body</li> <li>- Transport of nutrients and oxygen</li> <li>- Linking organ function to health outcomes</li> </ul>	<ul style="list-style-type: none"> <li>- Planning scientific enquiries (fair test, comparative and research-based)</li> <li>- Recognising and controlling variables</li> <li>- Accurate measuring and use of scientific tools</li> <li>- Data handling: recording, presenting and analysing</li> <li>- Reflecting on results and drawing conclusions</li> <li>- Introduction to lab rules and safety for secondary</li> </ul>
<ul style="list-style-type: none"> <li>- Drawing accurate ray diagrams</li> <li>- Investigating light paths and reflection</li> <li>- Using equipment (mirrors, torches, screens)</li> </ul>	<ul style="list-style-type: none"> <li>- Constructing and drawing complete series circuits</li> <li>- Using standard symbols in circuit diagrams</li> <li>- Predicting</li> </ul>	<ul style="list-style-type: none"> <li>- Using classification keys effectively</li> <li>- Observing carefully and recording data</li> <li>- Sorting and organising based on observable features</li> </ul>	<ul style="list-style-type: none"> <li>- Identifying inherited vs environmental traits</li> <li>- Using evidence to explain adaptation and survival</li> <li>- Drawing</li> </ul>	<ul style="list-style-type: none"> <li>- Labelling and explaining biological diagrams</li> <li>- Measuring and comparing heart rates</li> <li>- Drawing conclusions</li> </ul>	<ul style="list-style-type: none"> <li>- Full-cycle investigation planning</li> <li>- Selecting appropriate measuring tools</li> <li>- Using tables, charts</li> </ul>



- Planning fair tests with light and shadow variables - Constructing explanations using diagrams and key vocabulary	outcomes of circuit changes - Systematic testing and recording results - Evaluating designs and suggesting improvements	- Justifying groupings with evidence - Asking scientific questions about variation	comparisons between past and present species - Interpreting fossil evidence - Explaining change over time using examples	from exercise data - Communicating complex systems clearly - Evaluating lifestyle factors on health	and line graphs - Writing conclusions and evaluating reliability
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## Year 6/7 B

<b>Autumn 1</b>	<b>Autumn 2</b>	<b>Spring 1</b>	<b>Spring 2</b>	<b>Summer 1</b>	<b>Summer 2</b>
<b>Cells, Tissues &amp; Organ Systems</b> <i>(Biology)</i>	<b>Particles &amp; States of Matter</b> <i>(Chemistry)</i>	<b>Forces &amp; Motion</b> <i>(Physics)</i>	<b>Reproduction &amp; Life Cycles</b> <i>(Biology)</i>	<b>Acids, Alkalis &amp; Reactions</b> <i>(Chemistry)</i>	<b>Energy Transfers and Types</b> <i>(Physics)</i>
- Structure and function of plant and animal cells - Specialised cells (e.g., root hair, red blood cells) - Cell organisation: tissues, organs, systems - Digestive system overview - Gas exchange in lungs - Role of muscles and skeleton	- Particle model for solids, liquids and gases - Changes of state (melting, boiling, condensing, freezing, sublimation) - Properties of matter explained by particle theory - Diffusion and gas pressure - Expansion and contraction	- Types of forces: gravity, friction, air resistance, normal contact force, tension - Balanced and unbalanced forces - Resultant force - Newton's First Law - Speed = distance ÷ time - Interpreting motion graphs	- Male and female reproductive organs - Fertilisation and pregnancy - Gestation and birth - Puberty and secondary sexual characteristics - Plant reproduction: structure, pollination, fertilisation, seed dispersal - Life cycle differences	- Properties of acids and alkalis - pH scale and indicators - Neutralisation reactions (acid + alkali → salt + water) - Simple chemical equations - Combustion and oxidation - Reversible and irreversible changes	- Identifying different energy stores: kinetic, thermal, chemical, elastic, gravitational, etc. - Energy transfer pathways (mechanical, electrical, heating, radiation) - Law of conservation of energy - Useful vs wasted energy - Efficiency calculations - Sankey diagrams
- Using microscopes to observe and identify structures - Creating and	- Using particle diagrams to model processes - Explaining state	- Measuring force using a Newton meter - Calculating speed	- Describing and explaining reproductive processes	- Using pH indicators safely - Observing signs of chemical reactions	- Recognising and categorising energy types in real-world contexts



labelling detailed biological diagrams  
 - Comparing cell types  
 - Explaining organ system functions in context  
 - Making links between structure and function

changes using energy and movement  
 - Describing and predicting behaviour of materials  
 - Applying abstract models to real-life situations

and using formulae  
 - Drawing and interpreting distance-time graphs  
 - Investigating variables in forces and motion

- Comparing human and plant reproduction  
 - Sequencing developmental stages  
 - Using accurate scientific vocabulary for human biology

- Writing word equations for reactions  
 - Planning and carrying out reaction experiments  
 - Identifying patterns in results

- Using scientific terminology accurately  
 - Performing calculations involving efficiency  
 - Planning fair and controlled investigations