



Curriculum Guide – Year 7

Science

ACADEMY
GREAT BARR

Lead Professional: Mr Burlace

Members of Staff who teach Year 7:

- Mr Burlace (Lead Professional)
- Miss Bloomfield (Leader for Learning)
- Mrs Wilde (Assistant Vice Principal – Personalising Learning)
- Miss Thomson (Learning Consultant)
- Miss Tillsley (Learning Consultant)
- Mr Brooks (Learning Consultant)
- Mr Makin (Learning Consultant)

What we do in year 7:

Assessment Cycle	Physics (2.5 weeks)	Biology (2.5 weeks)	Chemistry (2.5 weeks)
1 - Origins	<p>Space – Solar system Research about the objects in the solar system – produce audio/visual presentation about the parts of the solar system</p> <p>How did the solar system form?</p>	<p>Organisms (Plant) Plant growth project – different conditions/nutrients Plant cells</p> <p>What conditions do plants need to grow?</p>	<p>Earth – Types of rock/rock cycle -Fossils -Types of rock -Structure and formation of the Earth</p> <p>What is the Earth made of?</p>
2 - Speed	<p>Forces – speed Investigation to identify the effect of different factors on the top speed of a car.</p> <p>How can we make things go faster?</p>	<p>Body systems – health and exercise -Fitness -Reaction times -Diet</p> <p>How does health affect the performance of a sports person?</p>	<p>Materials – material properties -Metals -Non-metals - Polymers/Composites</p> <p>How are different materials used to build racing cars?</p>
3	<p>Electricity – circuits and components Investigations into the energy transfers carried out by different circuit components. Measure the current and voltage characteristics of different components -Solar panels – charge/discharge circuit</p> <p>How is energy transferred from one form to another?</p>	<p>Animals – adaptations – zoo visit? Plan observations to be made at zoo, collect data there, make interpretations back in class.</p> <p>What do you need to live in different environments?</p>	<p>Fuels – energy from fuels. Burning/combustion Testing different fuels for energy released</p> <p>Why do different fuels release different amounts of energy?</p>
4	<p>Energy – Sound Investigation to identify the factors that affect the pitch of a sound produced by different types of animals/instruments.</p> <p>How does the size of an animal or instrument affect the sound it makes?</p>	<p>Environment – Survey of school environment On-going investigation into the school environment -Plants -Insects -Birds -Soil</p> <p>What is living around the school?</p>	<p>Reactions – pH and neutralisation reactions Neutralisation of stomach acids Thermal decomposition Metal+Acid reactions</p> <p>How are chemicals made and changed?</p>



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- Miss Thomson – Learning Consultant
- Miss Tillsley – Learning Consultant
- Mr Brooks – Learning Consultant

What we do in year 8:

Assessment Cycle	Physics (2.5 weeks)	Biology (2.5 weeks)	Chemistry (2.5 weeks)
1	<p>Energy – Light optics, filters, lenses</p> <p>-Building pinhole cameras/telescopes</p> <p>-Theatre lighting</p> <p>How do we see the objects around us?</p>	<p>Organisms (Plant)</p> <p>-Plant reproduction</p> <p>-Photosynthesis – link to light/filters – does the colour of light affect the growth of a plant</p> <p>How do plants grow?</p>	<p>Periodic Table</p> <p>Development</p> <p>Patterns and trends</p> <p>How can we group elements by patterns in their behaviour?</p>
2	<p>Electricity – useful circuits – breadboard project(s)</p> <p>Build different circuits using a variety of components</p> <p>How are different components combined in circuits?</p>	<p>Body systems –</p> <p>Investigating different structures within the human body</p> <p>How does the body work?</p>	<p>Chemical energy</p> <p>Catalysts</p> <p>Bonding</p> <p>Exo/endothermic reactions</p> <p>How is energy stored in different chemicals?</p>
3	<p>Forces – Rockets</p> <p>Investigating the factors that affect the range of a rocket. Design, build and test rockets.</p> <p>How can rockets be made to go to another planet?</p>	<p>Environment – ecosystems - colonising Mars</p> <p>How did plant life evolve on Earth?</p> <p>What different types of ecosystems are there?</p> <p>How do organisms depend on each other in an ecosystem?</p> <p>Is it possible to colonise other planets?</p>	<p>Fuels – biofuels, oils</p> <p>What fuel sources could be used if we were to colonise another planet?</p> <p>Hydrogen fuel cells/Salt solution fuels.</p> <p>How can we power a colony on a different planet?</p>
4	<p>Space – space centre visit?</p> <p>Research the history and factors leading to space exploration in the 20th century. Produce a presentation to explain.</p> <p>How and why do we explore space?</p>	<p>Animals – evolution</p> <p>How did we get the animals we see today?</p>	<p>Reactions to obtain substances</p> <p>Reactivity Series</p> <p>Displacement Reactions</p> <p>Earth Resources</p> <p>How do we get the materials we use today?</p>