

S1 Science BGE Plan - Classes will experience the following 5 topics in S1:

Subject	What will we learn?	What skills will we develop?	How will we be assessed?	What homework will we have?	What experiences /extracurricular clubs could be offered?
Cells & Reproduction (Biology)	<ul style="list-style-type: none"> Cell structure and function (animal and plant cells) How to prepare slides and use a microscope to see the cell structures Specialised cells DNA in plants and animals Effects of puberty Chromosome structure Reproduction and the reproductive organs Fertilisation How a foetus develops Pregnancy and birth 	<u>Science skills</u> Using microscopes <u>Literacy</u> Research Presentations Labelling diagrams <u>DYW</u> Problem solving Thinking routines Digital Skills <u>LfS</u> Discussing moral issues	<ul style="list-style-type: none"> Homework End of topic assessment (KU and PS) Research findings/presentation Thinking routine (e.g. tug of war on project prevention) Peer assessment 	2 homework exercises Research tasks	Science club Genetic detective (Science extracurricular/ competitions-will be advertised in dept) S1/2 Science/STEM club Industrial Cadets project Lego Challenge project Young Stem Leader Bronze crest awards
Healthier Scotland (Biology)	<ul style="list-style-type: none"> Health issues faced by families in Scotland and how they could be overcome The main food groups and what they are used for in the body Types of teeth and their use Enzymes and acid and how they help to digest food The organs involved in digestion The cardiovascular system organs and breathing The structure and function of the heart and blood vessels Fitness and the effect exercise has on heart rate 	<u>Science skills</u> Design and carry out experiments <u>Numeracy</u> Graph drawing Calculate breathing rate Calculate heart rate <u>Literacy</u> Research Presentations Creative writing Scientific write up Labelling diagrams Manipulating statistics <u>DYW</u> Problem solving	<ul style="list-style-type: none"> Homework End of topic assessment (KU and PS) Research findings Experimental write up 	3 homework exercises Research task	Science club Debate issues surrounding modern health problems

		<p>Thinking routines Digital Skills <u>LfS</u> Debating and discussion of moral issues Health and wellbeing</p>			
Energy (Physics)	<ul style="list-style-type: none"> • Name the types of Energy • The principle of the Conservation of Energy • Definitions for Potential & Kinetic Energy • The different types of heat transfer, Conduction, Convection and Radiation • The difference between heat and temperature • Conductors and insulators • Researching the importance of renewable energies • The Greenhouse Effect 	<p><u>Science skills</u> Measuring & Recording Temperature <u>Literacy</u> Research Presentations Scientific write up Explaining scientific research <u>Numeracy</u> Graph drawing Analysing graphs <u>DYW</u> Problem solving Thinking routines Digital Skills <u>LfS</u> Debate the advantages and disadvantages of renewables vs. non-renewables</p>	<ul style="list-style-type: none"> • Homework • End of topic assessment (KU and PS) • Research findings • Experimental write up 	<p>2 homework exercises Research task</p>	<p>Science club Debate issues surrounding global warming</p>
Forces & Space (Physics)	<ul style="list-style-type: none"> • Draw and read graphs appropriately • What is meant by balanced and unbalanced forces • What is meant by friction and how to reduce friction • What is meant by drag and how streamlining affects drag • What is meant by mass and how to measure it 	<p><u>Science Skills</u> Selecting appropriate methods to record data/information Increased precision in use of terminology, units, and scales <u>Literacy</u> Writing descriptions/explanations Using evidence to justify results Describing relationships <u>Numeracy</u> Graph drawing</p>	<ul style="list-style-type: none"> • Homework • End of topic assessment (KU and PS) • Research findings • Experimental write up • Planet Poster 	<p>2 homework exercises Research task</p>	<p>Science club</p>

	<ul style="list-style-type: none"> • What is meant by density and how density affects its ability to float or sink • What is meant by weight and how to calculate the weight of an object on the Earth • The names and order of planets in our solar system • How to calculate the weight of different objects on different planets • important space terms and the key features of the planets in our solar system • What conditions are needed for life to exist • What is meant by a light year and how to calculate the size of a light year 	<p>Analysing graphs Reading and writing down measurements Completing calculations <u>DYW</u> Problem solving Digital Skills H&S <u>LfS</u> I can put up a reasoned argument for the existence of life elsewhere Outside learning-parachute experiment</p>			
Chemistry in Action (Chemistry)	<ul style="list-style-type: none"> • The Periodic Table and its history • Describe what an element is • How elements are arranged in The Periodic Table • Names and symbols of elements • Classifying elements • Properties of Metals and non-metals • What atoms are and their components • Electron arrangements • Chemical and physical reactions • Compounds and mixtures • Word equations • Reaction rate and factors that affect it 	<p><u>Science skills</u> Design and carry out experiments <u>Numeracy</u> Graph drawing Analysing graphs Reading and writing down measurements <u>Literacy</u> Research Presentations Scientific write up Labelling diagrams <u>DYW</u> Problem solving Thinking routines Digital Skills</p>	<ul style="list-style-type: none"> • Homework • End of topic assessment (KU and PS) 	6 homework exercises Research task	Science club