

S1 Science Broad General Education Learning Plan

(Pupils will work on a rotational basis through different topics throughout S1 covering each of the units listed below)

Medical science	Exciting Energy	Astronaut Academy
<p>Learning and Teaching Focus:</p> <p>In this unit pupils’ will investigate the sciences involved in medicinal purposes. From human body, light and pharmaceuticals.</p> <p>Specific topics include</p> <ul style="list-style-type: none">• Using a microscope• What are cells• What is light• How light travels• Refraction• Light spectrum• How we see colour• Organs of the body• Learn about cancer• Mixtures and compounds• Solvents and mixtures	<p>Learning and Teaching Focus:</p> <p>In this unit pupils learn the various aspects of energy in everyday uses. Learning about food chains and the transfer of energy, the transfer of energy in objects as well as renewables and non-renewable sources.</p> <p>Specific topics include</p> <ul style="list-style-type: none">• What is energy• Energy changes• Renewable energy• How our body uses food• Energy in ecosystems• Experimental planning and procedures• Variables• Photosynthesis• Chemical reactions	<p>Learning and Teaching Focus:</p> <p>In this unit pupils learn about all things space related. Looking at why human life cannot be sustained in space, all the planets as well as elements on earth and space and their properties.</p> <p>Specific topics include</p> <ul style="list-style-type: none">• Forces• Planets• Space• Requirements for life• Classification of organisms• Adaptations and natural selection• The chemical elements• States of matter
<p>Assessment Approach and evidence gathered:</p> <p>Pupils will be continually assessed in a number of practical areas including: safety in the lab, accuracy when carrying out experiments, problem solving skills and experimental design.</p> <p>Additionally evidence will be gathered in the form of written lab reports generated from investigations:</p> <ul style="list-style-type: none">• How light travels• UV Radiation• Filtration and evaporation <p><u>Home Learning Tasks</u></p> <p>Pupils will have a number of research and written home learning tasks including</p> <p>Task 1: Cells Task 2: Refraction of light Task 3: EM Spectrum Task 4: Organs of the body</p>	<p>Assessment Approach and evidence gathered:</p> <p>Pupils will be continually assessed in a number of practical areas including: safety in the lab, accuracy when carrying out experiments, problem solving skills and experimental design.</p> <p>Evidence will be gathered in the form of written lab reports generated from investigations:</p> <ul style="list-style-type: none">• How much energy in in food• Photosynthesis investigation <p>Research Task: Renewable energy</p> <p><u>Home Learning Tasks</u></p> <p>Pupils will have a number of research and written home learning tasks including</p> <p>Task 1: Types of energy Task 2: Food webs Task 3: Photosynthesis Task 4: Solids, liquids and gasses</p>	<p>Assessment Approach and evidence gathered:</p> <p>Pupils will be continually assessed in a number of practical areas including: safety in the lab, accuracy when carrying out experiments, problem solving skills and experimental design. Evidence will be gathered in the form of written lab reports generated from investigations:</p> <ul style="list-style-type: none">• Weight and mass experiment• Testing for gasses <p>Problem solving task: Design and launch a rocket</p> <p>Research tasks:</p> <ul style="list-style-type: none">• Research and come up with a reasonable argument for/against life on other planets in our solar system• Research and present findings on unusual adaptation within the animal kingdom <p><u>Home Learning Tasks</u></p> <p>Pupils will have a number of research and written home learning tasks including</p> <p>Task 1: Forces Task 2 Biological Keys Task 3: Elements</p>

Feedback linked to benchmarks	Feedback linked to benchmarks	Feedback linked to benchmarks
<ul style="list-style-type: none"> Pupils will should be able to identify key strengths and areas for improvement based on practical experimental skills written feedback on lab reports 	<ul style="list-style-type: none"> Pupils will should be able to identify key strengths and areas for improvement based on practical experimental skills written feedback on lab reports Peer feedback on research task 	<ul style="list-style-type: none"> Pupils will should be able to identify key strengths and areas for improvement based on practical experimental skills written feedback on lab reports Peer and verbal feedback for research tasks
<p>Key Skills : Literacy/Numeracy/ HB/Digital Literacy</p> <p>By exploring radiations beyond the visible, I can describe a selected application, discussing the advantages and limitations. SCN 3-11b</p> <p>I have explored the structure and function of organs and organ systems and can relate this to the basic biological processes required to sustain life. SCN 3-12a</p> <p>I can differentiate between pure substances and mixtures in common use and can select appropriate physical methods for separating mixtures into their components. SCN 3-16a</p> <p>HWB Working as part of a group/ Pupils will reflect on their own and others’ work and evaluate it against shared criteria. Numeracy: Accuracy and attention to detail. Creating graphs Literacy: Pupils will create lab reports of investigations carried out in class</p>	<p>Key Skills : Literacy/Numeracy/ HB/Digital Literacy</p> <p>I can use my knowledge of the different ways in which heat is transferred between hot and cold objects and the thermal conductivity of materials to improve energy efficiency in buildings or other systems. SCN 3-04a</p> <p>By investigating renewable energy sources and taking part in practical activities to harness them, I can discuss their benefits and potential problems. SCN 3-04b</p> <p>I have developed my knowledge of the Periodic Table by considering the properties and uses of a variety of elements relative to their positions. SCN 3-15a</p> <p>Through experimentation, I can identify indicators of chemical reactions having occurred. I can describe ways of controlling the rate of reactions and can relate my findings to the world around me. SCN 3-19a</p> <p>HWB Working as part of a group/ Pupils will reflect on their own and others’ work and evaluate it against shared criteria. Numeracy: Accuracy and attention to detail. Creating a graph, calculating averages Literacy: Pupils will create lab reports of investigations carried out in class</p>	<p>Key Skills : Literacy/Numeracy/ HB/Digital Literacy</p> <p>I can sample and identify living things from different habitats to compare their biodiversity and can suggest reasons for their distribution. SCN 3-01a</p> <p>By using my knowledge of our solar system and the basic needs of living things, I can produce a reasoned argument on the likelihood of life existing elsewhere in the universe. SCN 3-06a</p> <p>By contributing to investigations of energy loss due to friction, I can suggest ways of improving the efficiency of moving systems. SCN 3-07a</p> <p>Literacy: Shares information and opinions with others. Participates fully in group discussion. Makes inferences and deductions with appropriate justification. Presents information and ideas with supporting evidence. Summarises information using own words</p> <p>HWB Working as part of a group/ Pupils will reflect on their own and others’ work and evaluate it against shared criteria. Numeracy: Accuracy and attention to detail. Working out relationships between data points Literacy: Pupils will create lab reports of investigations carried out in class</p>
<p>Skills for learning, work and life</p> <ul style="list-style-type: none"> Enterprise Skills – Planning & Organising Pupils will develop skills in team work and leadership by sharing tasks and responsibilities. When carrying out research tasks, pupils will be able to demonstrate the ability to communicate in different ways and use technology for learning Problem solving skills – throughout each unit pupils will be required to apply their knowledge to unfamiliar situations in order to solve problems. 		