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|  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  |
| **Learning and Teaching Focus:**In this unit pupils’ will investigate the sciences involved in medicinal purposes. From human body, light and pharmaceuticals. Specific topics include* 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
 | **Learning and Teaching Focus:**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.Specific topics include* What is energy
* Energy changes
* Renewable energy
* How our body uses food
* Energy in ecosystems
* Experimental planning and procedures
* Variables
* Photosynthesis
* Chemical reactions
 | **Learning and Teaching Focus:**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.Specific topics include* Forces
* Planets
* Space
* Requirements for life
* Classification of organisms
* Adaptations and natural selection
* The chemical elements
* States of matter
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| **Assessment Approach and evidence gathered:**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.Additionally evidence will be gathered in the form of written lab reports generated from investigations:* How light travels
* UV Radiation
* Filtration and evaporation

Home Learning TasksPupils will have a number of research and written home learning tasks includingTask 1: CellsTask 2: Refraction of lightTask 3: EM SpectrumTask 4: Organs of the body | **Assessment Approach and evidence gathered:**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:* How much energy in in food
* Photosynthesis investigation

Research Task: Renewable energyHome Learning TasksPupils will have a number of research and written home learning tasks includingTask 1: Types of energyTask 2: Food websTask 3: PhotosynthesisTask 4: Solids, liquids and gasses | **Assessment Approach and evidence gathered:**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:* Weight and mass experiment
* Testing for gasses

Problem solving task: Design and launch a rocketResearch tasks: * 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

Home Learning TasksPupils will have a number of research and written home learning tasks includingTask 1: ForcesTask 2 Biological KeysTask 3: Elements |
| **Feedback linked to benchmarks*** Pupils will should be able to identify key strengths and areas for improvement based on practical experimental skills
* written feedback on lab reports
 | **Feedback linked to benchmarks*** 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
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* written feedback on lab reports
* Peer and verbal feedback for research tasks
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| **Key Skills : Literacy/Numeracy/ HB/Digital Literacy**By exploring reflections, the formation of shadows and the mixing of coloured lights, I can use my knowledge of the properties of light to show how it can be used in a creative way. SCN 2-11bBy investigating some body systems and potential problems which they may develop, I can make informed decisions to help me to maintain my health and wellbeing. SCN 2-12aI have participated in practical activities to separate simple mixtures of substances and can relate my findings to my everyday experience. SCN 2-16a**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  | **Key Skills : Literacy/Numeracy/ HB/Digital Literacy**By considering examples where energy is conserved, I can identify the energy source, how it is transferred and ways of reducing wasted energy. SCN 2-04aThrough exploring nonrenewable energy sources, I can describe how they are used in Scotland today and express an informed view on the implications for their future use. SCN 2-04bBy contributing to investigations into familiar changes in substances to produce other substances, I can describe how their characteristics have changed. SCN 2-15aI have collaborated in activities which safely demonstrate simple chemical reactions using everyday chemicals. I can show an appreciation of a chemical reaction as being a change in which different materials are made. SCN 2-19a**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  | **Key Skills : Literacy/Numeracy/ HB/Digital Literacy**I can identify and classify examples of living things, past and present, to help me appreciate their diversity. I can relate physical and behavioural characteristics to their survival or extinction. SCN 2-01aBy observing and researching features of our solar system, I can use simple models to communicate my understanding of size, scale, time and relative motion within it. SCN 2-06aBy investigating how friction, including air resistance, affects motion, I can suggest ways to improve efficiency in moving objects. SCN 2-07a**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**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  |
| **Skills for learning, work and life** * 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.
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