Block	Year 3 - Key NC Science Objectives
Autumn 1 – Plants (flowers, pollination and seeds) **Artful flowers, fruits and seeds** Step into the amazing, secret world of flowers. Discover their relationship with bees and other insects. Learn how flowers transform into fruits and seeds to perpetuate the cycle of life and use the inspiration to create some beautiful works of art.	Plants • explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. Working Scientifically • asking relevant questions and using different types of scientific enquiries to answer them. • setting up simple practical enquiries, comparative and fair tests • making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, • gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. • recording findings using simple scientific language, drawings, labelled diagrams, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. • identifying differences, similarities or changes related to simple scientific ideas and processes. • using straightforward scientific evidence to answer questions or to support their findings
Autumn 2 – Animals including Humans - **Keeping Healthy** Develop specialised knowledge, skills and understanding in nutrition, muscles, bones and joints and even conduct your own research in order to answer questions about our bodies.	Animals Including Humans • Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat • Identify that humans and some other animals have skeletons and muscles for support, protection and movement. Working scientifically • asking relevant questions and using different types of scientific enquiries to answer them. • setting up simple practical enquiries, comparative and fair tests • making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment • gathering, recording, classifying, and presenting data in a variety of ways to help in answering questions. • recording findings using simple scientific language, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. • using results to draw simple conclusions, make predictions for new values, suggest improvements, and raise further questions. • identifying differences, similarities or changes related to simple scientific ideas and processes. • using straightforward scientific evidence to answer questions or to support their findings

Spring 1 – Forces and Magnets **Amazing Magnets** Mr Andrew Newton of the British Scientific Society is in need of your help. Are you up to the task of developing some exciting activities on the theme of Magnetism to delight visitors at their annual science fair? If the answer is "Yes" – it's time to have some fun with magnets whilst learning at the same time!	Properties and changes of materials • compare how things move on different surfaces. • notice that some forces need contact between two objects, but magnetic forces can act at a distance. • observe how magnets attract or repel each other and attract some materials and not others. • compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet and identify some magnetic materials. • describe magnets as having two poles. • predict whether two magnets will attract or repel each other, depending on which poles are facing. Working Scientifically • asking relevant questions and using different types of scientific enquiries to answer them. • setting up simple practical enquiries, comparative and fair tests • making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment • gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. • using results to draw simple conclusions, make predictions for new values, suggest improvements, and raise further questions. • identifying differences, similarities or changes related to simple scientific ideas and processes. • using straightforward scientific evidence to answer questions or to support their findings.
Spring 2 – Rocks - **Rocks and Fossils** Create an amazing rock and fossil museum to which you can invite other classes, parents and family, or even members of your local community like the. Natural History or Geology Society! In each session you will build up your knowledge to become expert museum curators and make exhibits, quizzes and activities for your exciting popup museum	Rocks • compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. • describe in simple terms how fossils are formed when things that have lived are trapped within rock. • recognise that soils are made from rocks and organic matter. Working Scientifically • asking relevant questions and using different types of scientific enquiries to answer them. • setting up simple practical enquiries, comparative and fair tests • making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. • recording findings using simple scientific language, drawings, labelled diagrams, keys, • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. • identifying differences, similarities or changes related to simple scientific ideas and processes. • using straightforward scientific evidence to answer questions or to support their findings

Summer 1 – Plants **Roots and Shoots** The alien beings on Planet Dock 5 needs your help. They want to open a hotel for humans on their planet, but they have a problem. It's too far away to have deliveries of fresh food from Earth so they need to build a space farm for Earth food plants. The problem is, they have no idea what these plants need to grow. Can you help by becoming their Earth Plant Researchers?	Plants • identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. • explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. • investigate the way in which water is transported within plants. Working Scientifically • asking relevant questions and using different types of scientific enquiries to answer them. • setting up simple practical enquiries, comparative and fair tests • making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. • recording findings using simple scientific language, drawings, labelled diagrams, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. • using results to draw simple conclusions, make predictions for new values, suggest improvements, and raise further questions. • identifying differences, similarities or changes related to simple scientific ideas and processes. • using straightforward scientific evidence to answer questions or to support their findings.
Summer 2 - Light **Light and Shadows** During this block you will create your own shadow puppet play using your expert knowledge and skills on light and shadows. You will make a theatre and puppets for the show in groups and conduct your own investigations on shadows, light and reflections.	**Light** • recognise that they need light in order to see things and that dark is the absence of light. • notice that light is reflected from surfaces. • recognise that light from the sun can be dangerous and that there are ways to protect their eyes. • recognise that shadows are formed when the light from a light source is blocked by an opaque object. • find patterns in the way that the size of shadows change. **Working scientifically** • asking relevant questions and using different types of scientific enquiries to answer them. • setting up simple practical enquiries, comparative and fair tests • making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, • gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. • recording findings using simple scientific language, drawings, labelled diagrams, and tables • reporting on findings from enquiries, including oral and written explanations, • using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. • identifying differences, similarities or changes related to simple scientific ideas and processes. • using straightforward scientific evidence to answer questions or to support their findings

Types of Investigations

'Working Scientifically' is the continuous area of study in the National Curriculum for Science in England. This aims to ensure that children have greater exposure to a range of enquiry types and that they recognize when the various forms of enquiry are taking place. This is to enable them to decide for themselves which type to use in order to tackle the question they are investigating. The following types of enquiry are included in Hamilton Science planning.

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Exploring:
Discovering what happens through play and exploration, e.g. What happens when you add water to fabric?
Observing over time:
Often linked to exploring but with a time variable included, e.g. Using a thermometer to observe temperature changes of water.
Sorting, classifying and identifying:
Putting things into groups based on their characteristics, e.g. In how many ways can you sort these materials?
Fair test:
Used when we can control all the variables except the one we are changing, e.g. Which 'towel' material will absorb the most water?
Pattern seeking:
Used when there are too many variables to control and so a true fair test is not possible, e.g. Do some people have stronger muscles because they use them more?
Problem solving:
Using the science we know to solve a problem, e.g. Using what you have learned about how sounds are made and the loudness of sounds made by different materials, design an effective bird scarer that uses wind chimes or similar.
Researching and analysing secondary sources
Using secondary sources to help answer scientific questions that cannot be answered through practical investigations, e.g. Which materials are biodegradable?

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