Science overview years Foundation Stage – Year 6						
	Autumn		Spring		Summer	
	1	2	1	2	1	2
Foundation Stage (Nursery & Reception)	• Light and dark • Day and night linked to clock change • Change of state; cooking and seasonal changes • Floating and sinking • Heavy and light		• Introduce prediction, keeping something warm. • Change of state; ice • Change of state; cooking and seasonal changes • Planting and growing		• Animals; farm animals and safari animals – contrasting environments • Change of state; cooking and seasonal changes	
1	**Everyday materials** • Distinguish between an object and the material it is made from • Make a prediction • Describe properties of everyday materials • Perform a simple test • Use their observations to answer simple questions • Sort objects 3 ways	**Seasonal changes** • Name the four seasons and name an event or occasion that happens in each season • Describe how day length changes in each season • Compare 2 seasons • Name different types of weather • Interpret simple data	**Animals including humans** • Draw and label parts of their body. • Describe activities that use each of the five senses. • Sort animals into simple groups, including groups based on animal diets. • Describe animal bodies using relevant vocabulary. • Understand the difference between carnivores, herbivores and omnivores. • Identify and classify animals by suggesting groups that they belong to.		**Plants** • Write instructions on how to plant a bean • Identify some garden plants that they see in photographs • Name some garden plants form memory • Identify some common plants in the wild • Label parts of a plant • Sort leaves in groups of deciduous and evergreen • Collect information on a wild plant hunt • Generate questions about plants • Measure the growth of a bean plant with a ruler • Use their observations to give reasons fro their answers to questions	
2	**Living things and their habitats** • Explain some of the life processes. • Ask questions to decide if a thing is living, dead or has never been alive. • Identify some plants and animals in global habitats. • Draw a map of a local habitat. • Sort objects into categories and give reasons for their choices. • Identify and name minibeasts in microhabitats. • Gather and record information. • Suggest how an animal is able to survive in their habitat. • Answer questions about habitats they have		**Animals including humans** • Say how an animal will change as it grows • Draw an animal as a baby and then as an adult • Name the different stages in the human timeline • Set up a simple test • Collect and interpret results • Say how an animal gets air, food and water • Research the answer to a question • Say what is healthy about their diet • Say how they could improve their diet • Give reasons why humans need exercise • Name one effect that exercise has on the body • Record information about exercise • Use information to answer questions • Give reasons why humans should keep themselves clean		**Uses of everyday materials** • Compare the uses of different everyday materials • Compare the suitability of everyday materials • Explain the basic progress of recycling • Explain the advantages of recycling • Name the process invented by John McAdam	**Plants** • Label the main parts of plants and trees • Describe the stages in the life cycle of the plant • Explain that plants need water, light and a suitable temperature to grow well • Make observational drawings of plants • Measure the growth of plants with a ruler • Record the growth of a plant in a bar chart

	researched. • Explain why the animals in a habitat need the plants. • Draw a simple food chain.					• Use observations to explain how we can tell that plants are living things • Set up simple comparative test • Make a simple prediction
3	**Rocks** • Children will be able to give examples of natural and human-made rocks. • They will be able to group rocks by their properties and identify simple similarities and differences. • Children will be able to explain the difference between a bone and a fossil. • They will be able to explain, using simple scientific language, how soil is formed. • They will make and record observations accurately.	**Light** • Understand that dark is the absence of light. • Set up an investigation and make predictions. • Understand how surfaces reflect light. • Recognise that a mirror appears to reverse an image. • Identify some parts of the eye. • Understand how the sun can damage parts of the eye. • Identify opaque, translucent and transparent objects. • Know how shadows change size.	**Forces and magnets** • Identify the type of force required to carry out an action. • Investigate the force of friction produced by different surfaces. • Explain that magnets produce an invisible pulling force. • Identify magnetic materials. • Identify different types of magnet. • Investigate the strength of different magnets. • Identify when magnets will repel or attract based on their poles. • Construct a bar chart of their results. • Explain their predictions and conclusions using key words or prompts.		**Animals including humans** • Explain the different ways that plants and animals including humans obtain food • Explain the difference between food groups and nutrient groups • Explain what the right type and amounts of nutrition are for human beings as well as some of the consequences related to eating the wrong type of diet • Use the scientific names for the main bones in the human body and explain how the skeleton protects, supports and helps the body move • Set up a simple practical enquiry and write an explanation of finding	**Plants** • Explain the functions of the different parts of plants. • Set up an investigation and make predictions. • Make observations and conclusions. • Identify different parts of a flower. • Identify and describe the stages of the life cycle of flowering plants. • Be able to answer questions based on their learning.
4	**Electricity** • Sort appliances based on whether they use mains or batteries. • They will be able to explain how a switch turns the electric current on and off.		**States of matter** • Describe the properties of solids, liquids and gases.	**Sound** • Explain how sound sources vibrate to make sounds.	**Living things and their habitats** • Generate criteria to use to sort living things	**Animals including humans** • Generate relevant scientific questions.

	• Children will be able to report their findings and conclusions orally.		• Explain that melting and freezing are opposite processes that change the state of a material. • Identify the melting and freezing point of several different materials. • Explain that heating causes evaporation and cooling causes condensation. • Explain that evaporation and condensation are opposite processes that change the state of a material. • Explain that the higher the temperature, the quicker water evaporates. • Explain what happens to water at the different stages of the water cycle. • Make observations and conclusions. • Be able to answer questions based on their learning.	• Explain how vibrations change when the loudness of a sound changes. • Explain how sounds travel to reach our ears. • Describe the pitch of a sound. • Describe patterns between the pitch of a sound and the features of the object that made the sound. • Explain how sound travels through a string telephone. • Identify the best material for absorbing sound. • Create a musical instrument that can play high, low, loud and quiet sounds. • Make observations and conclusions. • Be able to answer questions based on their learning.	• Sort living things into a Venn diagram • Sort living things into a Carroll diagram • Use questions to sort animals using a key • Use a key to identify invertebrates by looking at their characteristics • Use the characteristics of living things to sort them using a classification key • Identify dangers to wildlife in the local and wider environment • Record observations in a table • Write a report • Present findings to the class	• Identify differences related to scientific ideas. • Make predictions and suggest equipment. • Make careful observations, record findings using labelled diagrams and use results to make predictions for new values. • Identify parts of the digestive system. • Match the parts of the digestive system with their functions. • Match the types and functions of teeth. • Construct and interpret a food chain.
5	**Earth and Space** • Describe the Sun, Earth and Moon as spherical. • Name the planets in the solar system independently. • Distinguish between heliocentric and	**Animals including humans** • Compare graph types and select which is most appropriate for my data. • Analyse and report findings in written	**Forces** • To identify forces acting on objects. • To explore the effect that gravity has on objects and how the first theory of gravity was developed.	**Living things and their habitats** **Inc. David Attenborough** • To describe the lifeprocess of reproduction in some plants and animals	**Properties of materials and Changes of materials** • To compare and group together everyday materials on the basis of their properties, including their hardness, transparency and response to magnets by sorting and classifying materials according to their properties. • To give reasons, based on evidence from comparative and fair tests, for the	

	geocentric ideas of planetary movement. • Explain that day and night is due to rotation of the Earth. • Support the idea that different places on Earth experience night and day at different times with evidence. • Report and present findings from enquiries. • Explain how the Moon moves relative to the Earth.	explanations. • Name the 6 stages of human development. • Give reasons why changes occur during puberty.	• To investigate the effects of air resistance. • To explore the effects of water resistance. • To investigate the effects of friction. • To recognise that some mechanisms, including • levers, pulleys and gears, allow a smaller force to have a greater effect by exploring and designing a simple mechanism.	by exploring sexual reproduction in plants. • To describe the life process of reproduction in some plants and animals by exploring asexual reproduction in plants. • To describe the life cycle of a mammal by exploring the life cycles of different mammals. • To describe the life process of reproduction in some plants and animals • To describe the process of reproduction and the life cycle of a mammal by exploring Jane Goodall's work with chimpanzees. by describing sexual reproduction in mammals. • To describe the differences in the life cycles of an amphibian and an insect by exploring complete and incomplete metamorphosis. • To describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird by describing and	particular uses of everyday materials, including metals, wood and plastic by investigating thermal conductors and insulators. • To compare and group together everyday materials on the basis of their electrical conductivity by investigating the best electrical conductors. • To know that some materials will dissolve in liquid to form a solution by investigating dissolving. • To compare and group together everyday materials on the basis of their solubility by investigating dissolving • To use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating by separating different mixtures. • To demonstrate that dissolving, mixing and changes of state are reversible changes by separating different mixtures. • To describe how to recover a substance from a solution by separating different mixtures. • To explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda by identifying and observing irreversible chemical changes.

				comparing different life cycles, including birds.	
6	**Light** • Explain how light travels to enable us to see • Understand that all objects reflect light • Identify the angles of incidence and reflection • Explain how a prism allows us to see the visible spectrum • Understand that colours are a result of light reflecting off an object • Explain Isaac Newton's experiments about light and colour • Understand refraction as light bending changing direction • Understand how shadows change size • Understand that shadows are the same shape as the object that casts them • Make observations and conclusions • Be able to answer questions based on their learning	**Evolution and inheritance** • Develop an understanding of the development of evolutionary ideas and theories over time. • Explain how human evolution has occurred and compare modern humans with those of the same genus and family. • Understand that adaptation and evolution is not a uniform process for all living things. • Give examples of selective and crossbreeding.	**Living things and their habitats** • Give reasons for the classification of animals, using examples as a guide. • Classify living things using the Linnaean system. • Match groups of animals to their characteristics. • Classify creatures based on their characteristics. • Design a creature that has a specific set of characteristics, using prompts. • Describe the useful and harmful effects of different microorganisms. • Identify the variables in an investigation into harmful microorganisms. • Draw conclusions based on their results. • Describe the characteristics of different microorganisms. • Describe the characteristics of groups or organisms, using images as prompts.	**Animals including humans** • Demonstrate prior knowledge of systems within the human body. • Explain the specific functions of the lungs in the circulatory system. • Understand the processes of how water and nutrients are transported in the body. • State the beneficial impact of a healthy diet and exercise on the human body. • Describe how smoking cigarettes impacts negatively on the body. • Decide on the most appropriate type of investigation for their question. • Take repeat readings if necessary. • Report the degree of trust they have in their results.	**Electricity** • explain how our understanding of electricity has changed over time; • draw circuit diagrams using the correct symbols and label the voltage correctly; • decide which variables to control while planning an investigation; • decide how to report their findings; • make new predictions based on the previous results; • select an appropriate scientific enquiry.