Corporation Road Community Primary School

Science LTP

Science: Year 3/4A	
Vision: At Corporation Road, we believe that by studying science, children will develop a sense of the world around them and how it works. We aim to use science as a tool to help children work together and begin to build the collaborative skills that they will continue to use as they grow older. Our curriculum aims to teach our pupils about the natural world as well as imparting the knowledge that they can take into their secondary education. We strongly believe that learning is better when it is kept simple and through discussions, demonstrations, experiences and 'hands on' learning', children will be better prepared to retain the knowledge and skills that they have been taught.	
Domains	**Key Concepts**
Earth and Space	**Identifying and Naming, Moons, Spherical Bodies, Day and Night, Day Length and the Seasons,**
Light and Sound	**Identifying and Naming. Phenomena, Physical Processes, Classifying, Comparing and Safety**
Seasonal Changes	**Identifying and Naming, Effects of the Weather, Recording the Weather, The Seasons and Day Length**
Forces	**Identifying and Naming, Physical Processes, Phenomena, Testing, Comparing and Classification**
Electricity	**Identifying and Naming, Series Circuits, Circuit Symbols, Current and Voltage, Conductors and Insulators and Safety**
Substance, Matter and Materials	**Identifying and Naming, Classification, Uses, Physical Processes, Physical Properties and Comparisons**
Plants	**Identifying and Naming, Classification, Plant Parts and Their Functions, Habitats and Adaptation, Growth and Survival, Life Cycles, Seasonal Changes and Comparisons**
Animals Including Humans	**Identifying and Naming, Classification, Habitats, Adaptation and Interdependence, Growth, Health and Survival, Diet and Teeth, The Body, Life Cycles and Comparing**
Evolution and Inheritance	**Identifying and Naming, Inheritance, Evolution, Adaptation, Fossils and The Future**
Working Scientifically	**Asking and Answering Questions, Investigating, Observing, Equipment and Measuring, Identifying and Classifying, Recording and Reporting on Findings, Analysing Data and Drawing Conclusions**

Autumn 1	Autumn 2	Spring	Summer 1	Summer 2
Domain: Animals Including Humans	**Domain: Sound**	**Domain: Forces**	**Domains:** **Substance, Matter and Materials (Rocks)** **Evolution and Inheritance**	**Domain: Plants**
Key Concepts: - Identifying and Naming - Classification - Habitats, Adaptation and Interdependence - Growth, Health and Survival - Diet and Teeth - The Body - Comparing	**Key Concepts:** - Identifying and Naming - Phenomena - Physical Processes - Classifying - Comparing - Safety	**Key Concepts:** - Identifying and Naming - Physical Processes - Phenomena - Testing - Comparing	**Key Concepts:** - Identifying and Naming - Classification - Uses - Physical Processes - Physical Properties - Comparisons - Identifying and Naming - Fossils - The Future	**Key Concepts:** - Identifying and Naming - Classification - Plant Parts and Their Functions - Habitats and Adaptation - Growth and Survivals - Life Cycles - Seasonal Changes - Comparison
End Point:	**End Point:**		**End Points:**	**End Point:**

Biology **The end-point for biology at Corporation Road is for our children to understand that it is the study of life and living things. We want our children to be able to name a range of animals and plant life from their local environment but also the wider world. Building upon this, children will also be able to know the difference between vertebrates and invertebrates and be able to identify them and their features. Additionally, through their studies, children should understand the concept of adaption and why it is important for a species to survive. Finally, we want our children to understand evolution and be able to give examples where this has taken place in an animal or plant species.**	**Physics** **The end-point for physics is that children know that it is the study of things around them as well as energy and forces. Children should name and be able to identify the eight planets of the solar system. From their learning, children will understand the force of gravity and as well as how other forces work on objects moving through the air, water and along a surface. Our children will learn how to create simple circuits and understand key terms such as current and voltage. Finally, children will have a working understanding of light and sound.**		**Chemistry** **The end-point for chemistry at Corporation Road is for our children to understand that it is the study of what everything is made of and how it works. We want children to be able to understand the difference between a solid, a liquid and a gas and be able to name examples of them independently. Children should know the names of different physical properties of materials and identify how this can impact on how a material is used in everyday life. Finally, children should know how these different materials help during physical processes.** **Biology** **The end-point for biology at Corporation Road is for our children to understand that it is the study of life and living things. We want our children to be able to name a range of animals and plant life from their local environment but also the wider world. Building upon this, children will also be able to know the difference between vertebrates and invertebrates and be able to identify them and their features. Additionally, through their studies, children should understand the concept of adaption and why it is important for a species to survive. Finally, we want our children to understand evolution and be able to give examples where this has taken place in an animal or plant species.**	**Biology** **The end-point for biology at Corporation Road is for our children to understand that it is the study of life and living things. We want our children to be able to name a range of animals and plant life from their local environment but also the wider world. Building upon this, children will also be able to know the difference between vertebrates and invertebrates and be able to identify them and their features. Additionally, through their studies, children should understand the concept of adaption and why it is important for a species to survive. Finally, we want our children to understand evolution and be able to give examples where this has taken place in an animal or plant species.**
Year 3 - Identify some of the most important bones in animals such as skull, ribs and spine, describing their primary functions. - Classify and group animals into vertebrates or invertebrates. - Know that animals, including humans, cannot make their own food, by investigating food chains and recognise that all food begins with a plant. - Describe how each of the main food groups specifically benefit the human body for growth and health. - Identify the different food groups and design a healthy meal based on these food groups. - Describe how the skeleton and muscles work together to support, protect and assist movement. - Compare the diets of a herbivore and carnivore with (typically) omnivorous humans.	**Year 4** - Listen to and be able to identify a variety of familiar sounds and what is vibrating in each case. - Describe how sound travels through a medium to the outer ear and how sound is transferred to the inner ear. - Describe and demonstrate how the volume or pitch of a sound can be altered, using a range of equipment such as musical instruments. - Investigate and classify materials for their ability to insulate against sound. - Measure and compare the volume of a sound at different distances from its source, using appropriate equipment. - Recognise that certain sounds can be damaging for hearing and identify ways in which the ear can be protected.	**Year 3** - Name a range of familiar daily activities which rely upon or are caused by forces and magnets. - Describe forces in action (pulling and pushing) and whether the force requires direct contact between objects or whether the force can act at distance (magnetic force). - Explain the terms 'magnetic attraction' and 'repulsion' and 'magnetic poles', using a model for assistance. - Make predictions, explaining thinking then test a range of magnets for their strength and polarity. - Compare how an object moves over surfaces made from different materials, making predictions and measuring the distance travelled. - Sort and group materials into those that are magnetic and those that are not and identify patterns within the groups.	**Year 3** - Identify and name a range of rocks and soils, describing how fossils are formed (link to evolution). - Classify and group rocks according to their appearance or physical properties, using a hand lens or digital microscope and identifying whether they are granular, crystalline or fossilised. - Suggest reasons why certain rocks or stones are used for a specific purpose. Explain the terms 'weathering' and 'erosion' and describe the effect they have on different types of rocks and soils for purpose. - Investigate the physical properties of one or a number of rock types and relate their properties to their appearance. - Compare in detail a range of rock or soil samples from the locality, using simple tables and diagrams to present their findings. - Identify a range of fossilised animals and plants from pictures. - Define what a fossil is and how they are formed. - Suggest what the fossils of the future may be.	**Year 3** - Identify and describe the functions of common plant parts. Explain how their structure is suited to their function (e.g. roots are long and branched to provide good anchorage). - Sort and classify a range of seeds into broad dispersal methods, such as wind (dandelion), water (coconut) or animal (yew). - Draw a simple diagram to show how water is transported through a plant. - Compare and describe how requirements for growth vary from plant to plant and how this relates to a plant's environment, such as with climbing and alpine plants. - Recognise that plants make their own food necessary for growth and survival, storing it in their leaves. - Order pictures showing the stages in the life cycle of a plant. - Allocate different stages of a plant's life cycle to different seasons, suggesting reasons why the stages occur when they do. - Compare and explain the effect of different factors on plant growth, including light and nutrition.

Year 4 - Identify, producers, predators and prey in a given food chain and define the terms. - Develop own classification keys and assign living things to groups, using their keys. - Construct a variety of food chains and explain what would happen if one of the parts of the chain became 'unavailable'. - Identify different foods that can affect the health of teeth and know the importance of good oral hygiene. - Identify the different types of teeth and their functions, including how these vary from animal to animal and animal to human. - Identify body parts associated with the digestive system, such as mouth, tongue, teeth, oesophagus, stomach and intestine and describe their special functions. - Compare and contrast the digestive system of a herbivore, with a carnivore, using their knowledge of the parts of the human digestive system, including end products.		**Year 4** - Identify how the magnetic north and south pole is different to the geographical north and south pole. - Demonstrate using models or actions, the key forces in action during a given activity. - Develop research skills, using secondary sources (e.g. finding out why aurora form at the north and south magnetic poles). - Test whether any materials block magnetic attraction. - Compare the speed in which objects fall to the ground through the same distance of air or water, using their knowledge of forces to explain the outcomes.		**Year 4** - Identify and name a variety of plants in the local and a contrasting environment from their physical appearance. - Use classification keys to classify plants into groups, such as flowering or non-flowering plants, or compound, palmate or single blade leaves. - Identify uncommon, specialised plant parts such as tendrils and suckers and explain their functions. - Describe how a plant's habitat may naturally change throughout the year and how plants adapt to these changes. - Explain how humans can impact on a plant's environment in both positive and negative ways, giving examples from their locality. - Draw a labelled diagram to show the life cycle of a familiar plant, including germination, flower production, pollination, seed formation and seed dispersal. - Describe in detail the changes that occur in a familiar tree or plant over the seasons. - Compare plants growing in a local habitat to those in a contrasting one, such as a cacti in the desert, and notice how they are adapted.
Domain: Working Scientifically				
Key Concepts: - Asking and Answering Questions - Observing - Identifying and Classifying - Recording and Reporting on Findings - Analysing Data - Drawing Conclusions	**Key Concepts:** - Asking and Answering Questions - Investigating - Observing - Equipment and Measuring - Recording and Reporting on Findings - Analysing Data - Drawing Conclusions	**Key Concepts:** - Asking and Answering Questions - Investigating - Observing - Equipment and Measuring - Recording and Reporting on Findings - Analysing Data - Drawing Conclusions	**Key Concepts:** - Asking and Answering Questions - Observing - Recording and Reporting on Findings - Analysing Data - Drawing Conclusions	**Key Concepts:** - Asking and Answering Questions - Observing - Identifying and Classifying - Recording and Reporting on Findings - Analysing Data - Drawing Conclusions
End Point **Working Scientifically** **The end-point for working scientifically involves the children being able to apply a number of skills when completing an experiment or an investigation independently. These skills involve the children being able to take accurate measurements when using different scientific equipment. When explaining their findings, children should be able to use the correct scientific language to demonstrate their understanding. For children to develop as scientists, they will be able to identify the dependent and independent variables and understand what these terms means. Finally, they will be able to have the knowledge and ability to record data and results using the appropriate recording tool.**				
Year 3 - Use ideas to pose questions, independently, about the world around them. - Make decisions about what to observe during an investigation. - Talk about criteria for grouping, sorting and categorising, beginning to see patterns and relationships. - Record their findings using scientific language and present in note form, writing frames, diagrams, tables and charts. - Gather, record and use data in a variety of ways to answer a simple question. - Draw, with help, a simple conclusion based on evidence from an enquiry or observation.	**Year 3** - Use ideas to pose questions, independently, about the world around them. - Discuss enquiry methods and describe a fair test. - Make decisions about what to observe during an investigation. - Take accurate measurements using standard units. - Record their findings using scientific language and present in note form, writing frames, diagrams, tables and charts. - Gather, record and use data in a variety of ways to answer a simple question. - Draw, with help, a simple conclusion based on evidence from an enquiry or observation.	**Year 3** - Use ideas to pose questions, independently, about the world around them. - Discuss enquiry methods and describe a fair test. - Make decisions about what to observe during an investigation. - Take accurate measurements using standard units. - Record their findings using scientific language and present in note form, writing frames, diagrams, tables and charts. - Gather, record and use data in a variety of ways to answer a simple question. - Draw, with help, a simple conclusion based on evidence from an enquiry or observation.	**Year 3** - Use ideas to pose questions, independently, about the world around them. - Make decisions about what to observe during an investigation. - Record their findings using scientific language and present in note form, writing frames, diagrams, tables and charts. - Gather, record and use data in a variety of ways to answer a simple question. - Draw, with help, a simple conclusion based on evidence from an enquiry or observation.	**Year 3** - Use ideas to pose questions, independently, about the world around them. - Make decisions about what to observe during an investigation. - Talk about criteria for grouping, sorting and categorising, beginning to see patterns and relationships. - Record their findings using scientific language and present in note form, writing frames, diagrams, tables and charts. - Gather, record and use data in a variety of ways to answer a simple question. - Draw, with help, a simple conclusion based on evidence from an enquiry or observation.
Year 4 - Suggest relevant questions and know that they could be answered in a variety of ways, including using secondary sources such as ICT. Answer questions using straight forward scientific evidence. - Make systematic and careful observations. - Identify similarities/differences/changes when talking about scientific processes. Use and begin to create simple keys. - Choose appropriate ways to record and present information, findings and conclusions	**Year 4** - Suggest relevant questions and know that they could be answered in a variety of ways, including using secondary sources such as ICT. Answer questions using straight forward scientific evidence. - Make decisions about different enquiries, including recognising when a fair test is necessary and begin to identify variables. - Make systematic and careful observations. - Take accurate measurements using standard units and a range of equipment, including thermometers and data loggers.	**Year 4** - Suggest relevant questions and know that they could be answered in a variety of ways, including using secondary sources such as ICT. Answer questions using straight forward scientific evidence. - Make decisions about different enquiries, including recognising when a fair test is necessary and begin to identify variables. - Make systematic and careful observations. - Take accurate measurements using standard units and a range of equipment, including thermometers and data loggers.	**Year 4** - Suggest relevant questions and know that they could be answered in a variety of ways, including using secondary sources such as ICT. Answer questions using straight forward scientific evidence. - Make systematic and careful observations. - Choose appropriate ways to record and present information, findings and conclusions for different audiences (e.g. displays, oral or written explanations). - Identify, with help, changes, patterns, similarities and differences in data to help form conclusions. - Use scientific evidence to support their findings.	**Year 4** - Suggest relevant questions and know that they could be answered in a variety of ways, including using secondary sources such as ICT. Answer questions using straight forward scientific evidence. - Make systematic and careful observations. - Identify similarities/differences/changes when talking about scientific processes. Use and begin to create simple keys. - Choose appropriate ways to record and present information, findings and conclusions for

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