

**St Charles' Catholic Primary School**  
**Early Years**  
**Understanding the World**  
**The Natural World**  
**Curriculum**  
**Reception**

**St Charles' Catholic Primary School**  
**Reception Understanding the World Curriculum Overview**

Our Understanding the World curriculum has been developed to compliment our Literacy curriculum to create over arching themes that engage and embed learning.

The curriculum builds on prior knowledge so that children remember more.

Through our RE curriculum -Come and See children explore the Catholic and other faiths complementing the learning in our curriculum.

Understanding the World curriculum is greatly enhanced through our school forest school provision.

Children are exposed to real-life experience for example when learning about lifecycles we engage the children with living eggs (chicks) and butterfly gardens.

Progressive continuous provision curriculum planning that builds on children's interest .

Reflective planning following children's interests and using minute by minute formative ongoing assessments to plan opportunities for children to achieve their next steps in learning.

Termly summative assessments that inform planning.

Technology is used to engage and support children's learning in all areas of the curriculum.

Whole school events such as STEM week. Involvement in our Parish community and school trips linked to our themes to engage the children in their learning and increase cultural capital.

**Characteristics of Learning**  
Our provision promotes engagement, motivation and thinking.

**Parents as Partners**  
We include parents in their child's The World learning through including them when learning about families and inviting them in to school to share their experiences as well as online learning journals.

**Enabling Environments**  
Carefully planned organised and engaging environments to support independent learning through play.



Understanding the world involves guiding children to make sense of their physical world and their community. The frequency and range of children’s personal experiences increases their knowledge and sense of the world around them – from visiting parks, libraries and museums to meeting important members of society such as police officers, nurses and firefighters. In addition, listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains. Enriching and widening children’s vocabulary will support later reading comprehension.

***Statutory Framework***

	Understanding the World The Natural World	
Long Term Plan	Nursery	Reception
Autumn 1	Autumn and Plants How do trees change in autumn?  Science Plants and Seasons	Change Why is it cold outside?  Science Plants and Seasons
Autumn 2	Textures How can I use my hands to feel?  Science Materials	Materials Can you make a fork out of paper?  Science Materials
Spring 1	Winter Bears What do bears do in winter?  Science Seasons and Animals Including Humans	Winter Cave Where have all the bats gone?  Science Seasons and Animals Including Humans
Spring 2	Growing How does a chicken change?  Science Animals Including Humans, Seasons and Plants	Spring and Plants How do butterflies change?  Science Animals Including Humans, Seasons and Plants
Summer 1	How Things Work Which objects make noise?  Science Materials and Working Scientifically	Patterns How does the moon make a pattern?  Science Materials and Working Scientifically
Summer 2	Potions and Motions How can you make rice dance?  Science Working Scientifically	I am a scientist! Can a car float?  Science Working Scientifically

## The Natural World Curriculum

This document lists typical development at each stage in order for practitioners to judge if children are on track for expected development. It is not used to limit our curriculum to specific objectives.

Prior Learning Nursery Birth to 5 Matters	Reception Birth to 5 Matters and ELG	Future Learning (National Curriculum - Year 1)
<p><b>Range 4-5</b>  <b>The World</b>            Use all their senses in hands on exploration of natural materials.            Explore collections of materials with similar and/or different properties.            Talk about what they see, using a wide vocabulary.            Explore how things work.            Plant seeds and care for growing plants.            Understand the key features of the life cycle of a plant and an animal.            Begin to understand the need to respect and care for the natural environment and all living things.            Explore and talk about different forces they can feel.            Talk about the differences between materials and changes they notice.</p>	<p><b>Range 6</b>            Explore the natural world around them.            Describe what they see, hear and feel whilst outside.            Recognise some environments that are different to the one in which they live.            Understand the effect of changing seasons on the natural world around them.</p> <p><b>ELG: The Natural World Children at the expected level of development will:</b></p> <ul style="list-style-type: none"> <li>- Explore the natural world around them, making observations and drawing pictures of animals and plants;</li> <li>- Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class;</li> <li>- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</li> </ul>	<p><b>Science</b>            Observe changes across the four seasons.            Observe and describe weather associated with the seasons and how day length varies.            Distinguish between an object and the material from which it is made.            Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.            Describe the simple physical properties of a variety of everyday materials.            Compare and group together a variety of everyday materials on the basis of their simple physical properties.            Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.            Identify and name a variety of common animals that are carnivores, herbivores and omnivores.            Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).            Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.            Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.            Identify and describe the basic structure of a variety of common flowering plants, including trees.</p>

## Autumn 1 Reception – Change

### Why is it cold outside?

Prior Learning Nursery Birth to 5 Matters	Reception Birth to 5 Matters and ELG	Future Learning (National Curriculum - Year 1)
<b>Range 4-5</b> <b>The World</b> Use all their senses in hands on exploration of natural materials. Talk about what they see, using a wide vocabulary. Talk about the differences between materials and changes they notice.	<b>Range 6</b> Explore the natural world around them. Describe what they see, hear and feel whilst outside. Understand the effect of changing seasons on the natural world around them.  <b>ELG: The Natural World Children at the expected level of development will:</b> <ul style="list-style-type: none"> <li>- Explore the natural world around them, making observations and drawing pictures of animals and plants;</li> <li>- Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class;</li> <li>- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</li> </ul>	<b>Working Scientifically</b> Asking simple questions and recognising that they can be answered in different ways. Observing closely, using simple equipment. Performing simple tests. Identifying and classifying. Using their observations and ideas to suggest answers to questions. Gathering and recording data to help in answering questions. <b>Seasons</b> Observe changes across the 4 seasons. Observe and describe weather associated with the seasons and how day length varies. <b>Plants</b> Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants, including trees.

Key Knowledge	What would this knowledge look like?
Autumn is a time of change in the natural environment, it affects the weather, nature and how we dress. As the seasons change from the hot weather in summer to the colder weather in autumn the leaves on the trees change colours and start to fall off. There are less flowers and autumn is a time of harvest when farmers are busy before winter. In the autumn we experience more rain and wind and so have to change the way in which we dress to keep warm.	<ul style="list-style-type: none"> <li>Can name the seasons and identify the season of autumn from key features and images</li> <li>Can describe some different types of weather we experience in autumn</li> <li>Can identify types of clothing that we need to wear in the autumn</li> <li>Can describe the change in plants and trees due to the change in weather</li> <li>Can talk about some vegetables that are harvested in autumn</li> </ul>

Key Skills		What will these skills look like?	
<ul style="list-style-type: none"> <li>Make observations about how trees and plants have changed</li> <li>Make observations and describe the weather</li> <li>Measure rainfall with the support of an adult</li> <li>Make observations of what has changed and what has stayed the same in the natural environment</li> <li>Make observations of root vegetables</li> </ul>		<ul style="list-style-type: none"> <li>Can describe how trees and plants have changed in autumn through talk and art</li> <li>Can describe different types of weather</li> <li>Use rain gauges to measure rainfall with the support of an adult</li> <li>Can discuss the autumn changes they have observed in the natural environment when playing outside</li> <li>Can describe what different root vegetables look like through practical experiences and drawings</li> </ul>	
Vocabulary	Resources/Equipment	Suggested Visits / Visitors	
<p><i>Prior Vocabulary (Note some pupils may not have attended St Charles Nursery so this Vocabulary is recapped and reinforced) -</i></p> <p>Weather Season Autumn Summer Tree Plant Leaves Colours Green Brown Orange Red Wind Rain Hat Gloves Umbrella Coat Warm Cold</p> <p>Change Changed Rain Rainy Wind Windy Sun Sunny Winter Spring Crunchy Rain Gauge Measure Measurement Nature Root Vegetable Harvest Names of locally grown root vegetables Names of local plants and trees</p>	<p>Magnifying glasses Rain gauge Plants and leaves for observations Root Vegetables Autumn clothing and accessories</p>	<p>Forest School Nature Walk</p>	

## Autumn 2 Reception – Materials

### Can you make a fork out of paper?

Prior Learning Nursery Birth to 5 Matters	Reception Birth to 5 Matters and ELG	Future Learning (National Curriculum - Year 1)
<p><b>Range 4-5</b> <b>The World</b> Explore collections of materials with similar and/or different properties. Talk about what they see, using a wide vocabulary. Explore how things work. Explore and talk about different forces they can feel. Talk about the differences between materials and changes they notice.</p>	<p><b>ELG: The Natural World Children at the expected level of development will:</b> - Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</p>	<p><b>Working Scientifically</b> Asking simple questions and recognising that they can be answered in different ways. Observing closely, using simple equipment. Performing simple tests. Identifying and classifying. Using their observations and ideas to suggest answers to questions. Gathering and recording data to help in answering questions. <b>Materials</b> Distinguish between an object and the material from which it is made. Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. Describe the simple physical properties of a variety of everyday materials. Compare and group together a variety of everyday materials on the basis of their simple physical properties.</p>
Key Knowledge		What would this knowledge look like?
<p>Objects are made from different materials. Materials feel different and have different properties for example hard, rough and smooth. Common types of materials such as wood, plastic and metal, paper and fabric. Some materials are better than others for doing jobs. Some materials change state such as ice and chocolate.</p>		<ul style="list-style-type: none"> <li>▪ Can talk about the materials that some objects are made from</li> <li>▪ Can name and describe different materials</li> <li>▪ Can talk about why some objects are made from specific materials</li> </ul>



Key Skills		What will these skills look like?	
<ul style="list-style-type: none"> <li>▪ To look closely and similarities and differences between materials</li> <li>▪ To look closely at the properties of materials</li> <li>▪ To investigate and group objects into material types</li> <li>▪ To investigate changes in materials such as ice and chocolate</li> <li>▪ Can investigate why some materials are better than others for doing specific jobs for example a fork made from paper does not work as well as metal.</li> </ul>		<ul style="list-style-type: none"> <li>▪ Can notice and talk about differences in the objects that they touch in practical situations</li> <li>▪ Can describe the properties of different materials e.g. hard and soft when playing with different materials</li> <li>▪ Can group different objects into materials e.g. sorting wood, metal and plastic objects</li> <li>▪ Can identify materials that would fit a purpose in investigations supported by the teacher e.g. chocolate tea pot and paper fork</li> </ul>	
Vocabulary	Resources/Equipment	Suggested Visits / Visitors	
<p><i>Prior Vocabulary (Note some pupils may not have attended St Charles Nursery so this Vocabulary is recapped and reinforced) - Feel Hands Sense Object</i></p> <p>Material Wood Plastic Metal Touch Hard Soft Furry Spiky Sticky Smooth Rough Bumpy Lumpy Hard Soft Melt Heat</p> <p>Properties – Wrinkly Gritty Rubbery Prickly Soggy Gloopy Squashy Crunchy Purpose Paper Fabric Glass Brick Stone</p>	<p>Range of household objects</p> <p>Material squares</p> <p>Objects that can be sorted into categories e.g. wood, plastic and metal fabric and paper.</p> <p>Metal detectors</p> <p>Magnets</p>		

## Spring 1 Reception – Winter Caves

### Where have all the bats gone?

Prior Learning Nursery Birth to 5 Matters	Reception Birth to 5 Matters and ELG	Future Learning (National Curriculum - Year 1)
<p><b>Range 4-5</b> <b>The World</b> Use all their senses in hands on exploration of natural materials. Talk about what they see, using a wide vocabulary. Explore how things work. Begin to understand the need to respect and care for the natural environment and all living things.</p>	<p><b>Range 6</b> Explore the natural world around them. Describe what they see, hear and feel whilst outside. Recognise some environments that are different to the one in which they live. Understand the effect of changing seasons on the natural world around them.</p> <p><b>ELG: The Natural World Children at the expected level of development will:</b>            - Explore the natural world around them, making observations and drawing pictures of animals and plants;            - Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class;            - Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</p>	<p><b>Working Scientifically</b> Asking simple questions and recognising that they can be answered in different ways. Observing closely, using simple equipment. Performing simple tests. Identifying and classifying. Using their observations and ideas to suggest answers to questions. Gathering and recording data to help in answering questions.</p> <p><b>Seasons</b> Observe changes across the 4 seasons. Observe and describe weather associated with the seasons and how day length varies.</p> <p><b>Animals including Humans</b> Identify and name a variety of common animals including, fish, amphibians, reptiles, birds and mammals. Identify and name a variety of common animals that are carnivores, herbivores and omnivores. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets).</p>
Key Knowledge	What would this knowledge look like?	
<p>Winter is a time of change in the natural environment, it affects the weather, nature and how we dress. As the seasons change from autumn to winter it becomes even colder and we may experience ice and snow and we must wrap up in coats, gloves, hats and scarves to keep warm. The trees have lost all their leaves the natural environment looks bare.</p> <p>Animals change their behaviour in winters to survive the cold conditions some animals such as squirrels collect food to last the winter but some animals such as bat hibernate using the fat on their bodies over the winter months.</p>	<ul style="list-style-type: none"> <li>▪ Can name the seasons and identify the season of winter from key features and images</li> <li>▪ Can describe the how the cold weather in winter means there may be more ice and snow</li> <li>▪ Can describe the clothes that must be worn in winter to keep warm</li> <li>▪ Can describe the changes in the natural environment due to winter</li> <li>▪ Can talk about how some animals hibernate by collecting food and others using the fat on their bodies</li> <li>▪ Can describe how bats hibernated for the winter</li> </ul>	

Key Skills		What will these skills look like?	
<ul style="list-style-type: none"> <li>Make observations of how the natural environment changes in winter</li> <li>Make observations of how animals adapt to the winter through the use of photos and the natural world.</li> <li>Make observations and talk about the weather</li> <li>Investigate how the cold in winter affects the weather</li> </ul>		<ul style="list-style-type: none"> <li>Can talk about what they noticed has changed in the natural environment when playing outside</li> <li>Can talk about different animals behaviours in the winter whilst in role-play or through stories and photos</li> <li>Can describe different types of weather using images and art</li> <li>Can talk about how the winter affects the weather for example when exploring melting ice</li> </ul>	
Vocabulary	Resources/Equipment	Suggested Visits / Visitors	
<p><i>Prior Vocabulary (Note some pupils may not have attended St Charles Nursery so this Vocabulary is recapped and reinforced) - Weather Season Autumn Summer Winter Spring Tree Wind Rain Snow Ice Hat Gloves Coat Warm Cold Freezing Melting Hibernate Bear</i></p> <p>Natural Environment Changes Changed Fog Icy Scarf Squirrel Bat Cave Hibernation Fat Light Dark Sleep Temperature</p>	<p>Magnifying glasses Fake Snow Ice Animal figures Winter clothing and accessories Cave and bat Small world</p>	<p>Forest School Nature Walk</p>	

## Spring 2 Reception– Spring and Plants

### How do butterflies change?

Prior Learning Nursery Birth to 5 Matters	Reception Birth to 5 Matters and ELG	Future Learning (National Curriculum - Year 1)
<p><b>Range 5</b> <b>The World</b> Use all their senses in hands on exploration of natural materials. Talk about what they see, using a wide vocabulary. Understand the key features of the life cycle of a plant and an animal. Begin to understand the need to respect and care for the natural environment and all living things.</p>	<p><b>Range 6</b> Explore the natural world around them. Describe what they see, hear and feel whilst outside. Understand the effect of changing seasons on the natural world around them.</p> <p><b>ELG: The Natural World Children at the expected level of development will:</b></p> <ul style="list-style-type: none"> <li>- Explore the natural world around them, making observations and drawing pictures of animals and plants;</li> <li>- Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class;</li> <li>- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</li> </ul>	<p><b>Working Scientifically</b> Asking simple questions and recognising that they can be answered in different ways. Observing closely, using simple equipment. Performing simple tests. Identifying and classifying. Using their observations and ideas to suggest answers to questions. Gathering and recording data to help in answering questions.</p> <p><b>Seasons</b> Observe changes across the 4 seasons. Observe and describe weather associated with the seasons and how day length varies.</p> <p><b>Plants</b> Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants, including trees.</p>
Key Knowledge		What would this knowledge look like?
<p>Spring is a time of change in the natural environment, it affects the weather, nature and how we dress. As the seasons change from winter to spring new life starts to grow. Trees and plants bud and leaves grow back on to the trees that have lost their leaves over the winter. Flowers start to grow and bloom. Nature has the sunshine and water (rain) it needs to grow. Flowers have roots, stems, leaves and petals. Spring is also the time that animals thrive. The lifecycle of a butterfly can be seen in Spring as the caterpillars lay eggs that turn into chrysalis (cocoons) and then caterpillars and finally butterflies.</p>		<ul style="list-style-type: none"> <li>▪ Can name the seasons and identify the season of spring from key features and images.</li> <li>▪ Can name common weather and describe typical weather in spring</li> <li>▪ Can describe the changes in the natural environment</li> <li>▪ Can talk about how trees, plants and flowers start to change and grow in spring</li> <li>▪ Can describe what plants and flowers need to grow</li> <li>▪ Can identify simple parts of a flower</li> <li>▪ Can name the stages of a butterflies lifecycle</li> </ul>

Key Skills		What will these skills look like?	
<ul style="list-style-type: none"> <li>Make observations of trees, plants and flowers</li> <li>Make observations and talk about the weather</li> <li>Make observations of the lifecycle of a butterfly through class caterpillars</li> </ul>		<ul style="list-style-type: none"> <li>Can talk about and use art and labels to describe what trees and plants look like in spring</li> <li>Can talk about the changes and different types of weather in spring when playing outside</li> <li>Can make observations and describe how a butterflies' changes in its lifecycle using class caterpillars, books and toys</li> </ul>	
Vocabulary	Resources/Equipment	Suggested Visits / Visitors	
<p><i>Prior Vocabulary (Note some pupils may not have attended St Charles Nursery so this Vocabulary is recapped and reinforced) -</i></p> <p>Weather Season Autumn Summer Winter Spring  Tree Plant Flower Change Grow Growing Different  Wind Rain Snow Sun Sunny Warm Cold Heat Chicken  Chick Egg Hatch Hatching</p> <p>Water Sunlight Stem Roots Petal Leaves Soil Butterfly  Lifecycle Egg Caterpillar Chrysalis Cocoon</p>	<p>Magnifying glasses  Plants/flowers to observe  Animal figures/Small world  Cress  Watering cans  Class Caterpillars and butterfly garden  Mini beast resources  Life Cycle of a butterfly props</p>	Class Caterpillars	

## Summer 1 Reception – Patterns

### How does the moon make a pattern?

Prior Learning Nursery Birth to 5 Matters	Reception Birth to 5 Matters and ELG	Future Learning (National Curriculum - Year 1)
<p><b>Range 4-5</b> <b>The World</b> Use all their senses in hands on exploration of natural materials. Talk about what they see, using a wide vocabulary. Begin to understand the need to respect and care for the natural environment and all living things. Talk about the differences between materials and changes they notice.</p>	<p><b>Range 6</b> Explore the natural world around them. Describe what they see, hear and feel whilst outside. Recognise some environments that are different to the one in which they live.</p> <p><b>ELG: The Natural World Children at the expected level of development will:</b></p> <ul style="list-style-type: none"> <li>- Explore the natural world around them, making observations and drawing pictures of animals and plants;</li> <li>- Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class;</li> <li>- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</li> </ul>	<p><b>Working Scientifically</b> Asking simple questions and recognising that they can be answered in different ways. Observing closely, using simple equipment. Performing simple tests. Identifying and classifying. Using their observations and ideas to suggest answers to questions. Gathering and recording data to help in answering questions.</p> <p><b>Materials</b> Distinguish between an object and the material from which it is made. Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. Describe the simple physical properties of a variety of everyday materials. Compare and group together a variety of everyday materials on the basis of their simple physical properties.</p>
Key Knowledge		What would this knowledge look like?
<p>There are patterns everywhere in nature, time, space and technology. You can identify patterns using the sense of sight through the eye in a range of examples: Patterns in materials and wall paper. Patterns found in the environment (Rubbings can identify patterns in materials). Patterns in honeycombs. Phases of the moon.</p>		<ul style="list-style-type: none"> <li>▪ Can explain what a pattern is</li> <li>▪ Can talk about and describe patterns</li> <li>▪ Can create their own patterns</li> <li>▪ Can describe how honeycomb is made and the patterns within it</li> <li>▪ Can talk about how the moon changes and follows a pattern</li> </ul>

Key Skills		What will these skills look like?	
<ul style="list-style-type: none"> <li>▪ To look closely at similarities and differences between patterns</li> <li>▪ To observe natural patterns</li> <li>▪ To look closely and identify different the phases of the moon through photos</li> </ul>		<ul style="list-style-type: none"> <li>▪ Can identify differences between patterns when looking at images such as wallpaper</li> <li>▪ Can use observations and drawings to identify patterns in natural objects</li> <li>▪ Can move and touch objects to create sounds</li> <li>▪ Can identify different phases of the moon through photographs</li> </ul>	
Vocabulary	Resources/Equipment	Suggested Visits / Visitors	
<p><i>Prior Vocabulary (Note some pupils may not have attended St Charles Nursery so this Vocabulary is recapped and reinforced) - Object Material Wood Plastic Metal</i></p> <p>Sight See Seeing Eyes Pattern Repeated Natural Phase Moon Bee Honeycomb Paper Fabric Glass Brick Stone</p>	<p>Range of natural and man-made objects that contain patterns e.g. wallpaper leaves stones Honey Comb</p> <p>Resources to create rubbings</p> <p>Space Resources</p> <p>Space Station Role-play</p>	Centre for Life	

## Summer 2 Reception – I am a Scientist!

### Can a car float?

Prior Learning Nursery Birth to 5 Matters	Reception Birth to 5 Matters and ELG	Future Learning (National Curriculum - Year 1)
<p><b>Range 4-5</b> <b>The World</b> Explore collections of materials with similar and/or different properties. Talk about what they see, using a wide vocabulary. Explore how things work. Explore and talk about different forces they can feel. Talk about the differences between materials and changes they notice.</p>	<p><b>Range 6</b> Explore the natural world around them. Describe what they see, hear and feel whilst outside.</p> <p><b>ELG: The Natural World Children at the expected level of development will:</b></p> <ul style="list-style-type: none"> <li>- Explore the natural world around them, making observations and drawing pictures of animals and plants;</li> <li>- Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class;</li> <li>- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</li> </ul>	<p><b>Working Scientifically</b> Asking simple questions and recognising that they can be answered in different ways. Observing closely, using simple equipment. Performing simple tests. Identifying and classifying. Using their observations and ideas to suggest answers to questions. Gathering and recording data to help in answering questions.</p>
Key Knowledge	What would this knowledge look like?	
<p>Science is the study of the world around us. Scientists learn about their subject by observing, describing, and experimenting. Experiments help us to find out more about things. Predictions are clever guesses about what you think might happen. Floating is the process of an object resting on top of a liquid. Sinking is when the object has a higher density so falls to the bottom Materials and ingredients can be combined to create reactions in experiments: <a href="https://www.firstdiscoverers.co.uk/early-years-science-activities-eyfs/">https://www.firstdiscoverers.co.uk/early-years-science-activities-eyfs/</a> <a href="https://www.science-sparks.com/early-years-science-themed-activities/">https://www.science-sparks.com/early-years-science-themed-activities/</a></p>	<ul style="list-style-type: none"> <li>▪ Understand that a scientist is a job</li> <li>▪ Understand that scientists carry out experiments to find out more about the world</li> <li>▪ Can use the word experiment appropriately</li> <li>▪ To understand what a prediction is</li> <li>▪ Can talk about objects that float and sink</li> <li>▪ To talk about how combining some materials or ingredients result in changes</li> <li>▪ Describe the changes in experiments</li> </ul>	



Key Skills		What will these skills look like?	
<ul style="list-style-type: none"> <li>▪ To make their own predictions</li> <li>▪ To carry out experiments</li> <li>▪ To investigate objects that float and sink</li> <li>▪ To create their own experiment to design and make a car that will float</li> <li>▪ To observe changes when ingredients or materials are combined</li> <li>▪ To consider why changes are occurring</li> </ul>		<ul style="list-style-type: none"> <li>▪ Can talk about what they think might happen (make a prediction)</li> <li>▪ Engage and participate in different experiments</li> <li>▪ Can identify and group objects that float and sink in practical activities</li> <li>▪ Can design a car that floats</li> <li>▪ Can talk about the changes that they observe</li> <li>▪ Can ask why questions in discussions and play</li> </ul>	
Vocabulary	Resources/Equipment	Suggested Visits / Visitors	
<p><i>Prior Vocabulary (Note some pupils may not have attended St Charles Nursery so this Vocabulary is recapped and reinforced) - Science Scientist Experiment Prediction Change Ingredients Materials Why</i></p> <p>Float Sink Liquid Observing Describing Experimenting</p>	<p>Resources needed for individual experiments</p> <p>Different experiment resources</p> <p>Water Tray</p> <p>Objects that float and sink</p> <p>Lab coats and goggles</p> <p>Scientist role-play resources</p>	<p>STEM Week</p> <p>Discovery Museum</p>	

### Working Scientifically

Questioning and Provocations – We provide opportunities to develop curiosity, where adults can model questions and children can ask questions.

<p><b>Describe</b></p> <p>What is it like?</p> <p>How does.....look, taste, feel, sound, smell?</p> <p>Can you show me...?</p> <p>Can you tell me about ...?</p> <p>Can you tell me which...?</p> <p>Can you describe ...?</p> <p>What's happening?</p> <p>What's happening here?</p> <p>What happens when you...?</p> <p>Can you tell me what...?</p> <p>How does that work?</p> <p>What did you notice when you...?</p> <p>Compare and contrast:</p> <p>What is the same about...?</p> <p>What is different...?</p> <p>Which ones...?</p>	<p><b>Reasoning</b></p> <p>Why?</p> <p>Why it happened?</p> <p>Why did....?</p> <p>Why do you think...?</p> <p>Why do you think.....is happening/happened?</p> <p>Can you tell me why....?</p> <p>Tell me why ...?</p>	<p><b>I Wonder</b></p> <p>What could we do next?</p> <p>I wonder if....</p> <p>What if ...?</p> <p>What will happen if we...?</p> <p>How can you make ...?</p> <p>How can you show...?</p> <p>How could we find out if.....?</p> <p>Can you find another that will...?</p> <p>Can you think of another way...?</p> <p>How could we make it better...?</p> <p>How could we improve ...?</p> <p>Can you create/invent/design...?</p>
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#### Suggested equipment and resources to support The World – Working Scientifically

Magnifying glasses, pipettes, magnets, tweezers, mirrors, binoculars, bug viewers, torches, colour viewers.

Spotter sheets from [www.woodlandtrust.org.uk](http://www.woodlandtrust.org.uk) (e.g. nature detectives – Bird Hunt)

Camera, Video, including iPads.

Digital microscopes e.g. Easi-scope.

Visualiser, and Sound recorders (e.g. microphones).

Speaking and listening technology (e.g. talking pegs/postcards/magnifying glasses).

Light box, light table/panel to use with a range of resources including x-rays

## Reception – Understanding the World

### Continuous Provision Curriculum Planning

Resources/Area	How is it organised and why	Intended Learning Outcomes	Link to EYFS / Research / C of EL	Adult Role
<p>Child friendly herbs and plants with spray bottle</p> <p>Shells of various sizes</p> <p>Rocks and pebbles</p> <p>Mortar and pestle</p> <p><b>Non-fiction books</b></p> <p>Books about seasonal changes, machines etc.</p> <p>Books about scientific theories/experiments</p> <p><b>Investigative/ recording tools</b></p> <p>Empty wooden sections tray</p> <p>Paper, clipboards and pencils</p> <p>Microscope</p> <p>Scales</p> <p>Thermometer</p> <p>Torches</p> <p>Test tubes</p> <p>Mirrors</p> <p>Magnifying glasses</p> <p>Utensils for investigating: tongs, tweezers and so on</p> <p>Empty jars</p> <p>Magnets</p> <p>Different materials to explore</p> <p>Books about weather conditions: clouds. rain, sunshine, wind, snow and lightening</p>	<p>Having enough table space allows children the room to try out discoveries</p> <p>Natural items are presented in sectioned containers according to category/ name or alphabetical order</p> <p>Tongs, tweezers, empty jars, magnifying glasses in labelled jars</p>	<p>Describe what they see, hear and feel whilst outside.</p> <p>Understand the effect of changing seasons on the natural world around them.</p> <p>Explore the natural world around them, making observations and drawing pictures of animals and plants;</p> <p>Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</p> <p>Talk about the differences between materials and changes they notice.</p> <p>Play with others co-operatively.</p> <p>Develop fine and gross motor skills.</p> <p>Develop communication and language skills..</p>	<p>Investigating light through using prisms, kinetic torches, light table and reflective mobiles, linked to UW</p> <p>Examining items closely, linked to UW</p> <p>Weighing and measuring natural objects, linked to Maths</p> <p>Testing out simple machines (ramps and pulleys), linked to MD</p> <p>Experimenting with colour and change linked to EAD</p> <p>Investigating how materials can transform linked to UW</p> <p>Collecting natural resources from outside and recording them, linked to Maths &amp; CL</p> <p>Making choices, accepting challenges and embracing serendipity, linked to PSE</p> <p>Using reference books to find and discover, linked to Literacy</p> <p>Labelling and recording discoveries linked to Literacy</p> <p>Using tools to support experiments (i.e. mortar &amp; pestle, eye dropper), linked to PD</p> <p>Operating simple machines, linked to PD</p> <p>Caring for living things (i.e. plants), linked to PSE &amp; UW</p> <p>Classifying objects according to attributes of size, species, colour and so on, linked to UW</p> <p>Talking about the investigative process, linked to CL</p>	<p>Be a co-constructor, a fellow learner who is passionate and enthusiastic about investigating</p> <p>Ask questions that can facilitate deeper levels of inquiry...</p> <p>Provide constructive feedback on children's processes</p> <p>Offer direct help when asked.</p> <p>Model thinking out loud to encourage children to talk about the "here and now"</p> <p>Instigate provocations that require a collaborative response</p> <p>Suggest strategies to help children on the journey of discovery</p> <p>Use scientific language:</p> <ul style="list-style-type: none"> <li>– Observing</li> <li>– Predictions</li> <li>– Hypothesising</li> <li>– investigating</li> <li>– problem solving</li> <li>– Change</li> <li>– Same</li> <li>– Different</li> </ul> <p><b>Questions</b></p> <p>What do you notice about ....?</p> <ul style="list-style-type: none"> <li>– What are you attempting to .....?</li> <li>– What do you think will happen?</li> <li>– If you change .....then .....</li> </ul> <p>Encourage children to use feedback to revisit learning</p>

## Reception – Sand and Water

### Continuous Provision Curriculum Planning

Resources/Area	How is it organised and why	Intended Learning Outcomes	Link to EYFS / Research / C of EL	Adult Role
Basket of natural floating materials Basket of natural sinking materials Scales Non-fiction books Basket of natural sea sponges Basket of different sized plastic bottles (coloured) Small fishing nets Books about oceans/ sustainability ie plastics Container of clean household items (plastic bottles and so on) Water pumps Diluted bottles of food dye in transparent bottles Wooden spoons Wire whisks Tea strainers Thick paint brushes Sea animals Small rubber rings A variety of ice cube trays Box of cardboard pieces of various sizes Sponges and small bucket	Shelves and materials placed at height Environmental provocation set out on a shelf for children to discuss, find out more and add. Basket of sea animals nearby Diluted squeezable bottles of food dye placed on top of their corresponding colour label. Authentic tools: wooden spoons, wire whisk, strainers, wooden paint brush, small fishing nets hung up under corresponding photograph	Explore the natural world around them. Describe what they see, hear and feel whilst outside. Talk about the differences between materials and changes they notice. Explore core maths concepts related to size and shape. Play with others co-operatively. Develop fine and gross motor skills. Develop communication and language skills.	Become aware of the impact of human activity of environments, linked to KU Children match shapes when putting items back (Maths) Having clearly labelled places for resources encourages respect for resources and the environment (PSD) Selecting resources enables children to express their preferences, likes and dislikes (PSE) A variety of authentic familiar resources that reflect their everyday life allows children to process, practice and make sense of their world (UW) Children learn about responsibility and self-efficacy through washing dolls clothes/drying them for dolls (UW) Children learn about keeping the environment and themselves safe through cleaning up spillages with buckets and sponges provided (PD) Magnifying glasses allow children to explore and investigate objects close up (UW) Using everyday resources in different ways and for different purposes (UW) Cylinders invite pouring, scooping, aligning with children's natural curiosity with holes (PD) Pieces of cardboard to use in a range of ways to explore, movement, force and so on	Observe and take note of children's key interests, thinking and learning Be alongside them to offer support Help children with what they are trying to do and show them how Respond to their requests and ideas Comment on their actions and model relevant language Suggest possibilities to extend their thinking Model how to do things and think out loud Encourage children to persist, have another go, repeat their actions/ideas over time Consider additional stimulus and add this immediately if to hand or the following session/day/week  <b>Questions to stimulate ideas and add challenge</b> <ul style="list-style-type: none"> <li>– What might happen if/when?</li> <li>– Tell me how...?</li> <li>– Can you?</li> <li>– I wonder what would happen if?</li> </ul> <b>Language linked to key learning</b> <ul style="list-style-type: none"> <li>– Size (large/medium/small/smaller)</li> <li>– Capacity (full/empty)</li> <li>– Direction (up/down)</li> <li>– Forces (fast/slow)</li> <li>– Order (first/next/last)</li> <li>– Comparatives (more/less, faster/slower, bigger/ smaller)</li> </ul>