

Science Long Term Overview- Nursery

Understanding the World

Autumn 1
Marvellous Me
• **Humans**

DM Objectives	Overview	Encouraging Scientific Enquiry
<ul style="list-style-type: none"> • Begin to make sense of their own life-story and family's history. • Continue developing positive attitudes about the differences between people. • Use all their senses in hands-on exploration of natural materials. 	<ul style="list-style-type: none"> • Encourage children to describe how they have changed since they were babies. • Encourage children to talk about how to care for a baby. • Encourage children to ask questions of an expectant mother, parent with a baby and elderly person. • Encourage children to talk about what they can do now that they were not able to do when they were babies, including how to look after themselves. • Encourage children to talk about objects using their senses to describe them. 	<p><u>Classification</u></p> <ul style="list-style-type: none"> • Sort images of humans according to their age. • Sort using different senses. Which do you like/not like? <p><u>Observing over time</u></p> <ul style="list-style-type: none"> • How does a baby change over time? • Research using secondary sources • Find out about the human life-cycle from an expectant mother, parent with a baby and elderly person.

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Autumn 2 Feelings

- **Materials including changing materials**
 - **Light**
 - **Sound**

DM Objectives	Overview	Encouraging Scientific Enquiry
<ul style="list-style-type: none"> • Talk about the differences between materials • and changes they notice. • Use all their senses in hands-on exploration of natural materials. • Explore collections of materials with similar and/or different properties. • Know that there are different countries in the world and talk about the differences they have 	<ul style="list-style-type: none"> • Encourage children to talk about the materials they explore, using their senses. • Encourage children to choose from a range of materials when making models. • Encourage children to join materials together to make something. • Support children to name the material they have used. • Encourage children to talk about why they have chosen a particular material, naming at least one property. • Encourage children to talk about the changes when ingredients are mixed, cooked, heated and cooled, frozen and blended. • Encourage children to ask question about the materials they encounter. • Encourage children to compare the brightness of different light sources. 	<p><u>Classification</u></p> <ul style="list-style-type: none"> • Sort materials using simple properties. <p><u>Observing over time</u></p> <ul style="list-style-type: none"> • How does the cake mixture change? • How does chocolate change when heated? • How does fruit juice change when put in the freezer? • How does fruit change when blended?

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- experienced or seen in photos.
- Talk about the differences in materials and changes they notice.
- Explore how things work.

- Encourage children to talk about what they see in the dark den and how it changes when a light source is on or off.
- Encourage children to talk about what they see when they shine light onto or through different objects or materials.
- Encourage children to talk about how their reflection changes in different mirrors.
- Support children to notice that they see their reflection on shiny objects and encourage them to predict which objects they will see their reflection in.
- Encourage children to draw what they see in different mirrors.
- Encourage children to ask questions about light sources.
- Encourage children to describe the sounds they hear.
- Encourage children to talk about how they make sounds using their bodies and musical instruments.
- Encourage children to adapt the instruments they make, e.g. changing elastic bands on guitars, using different materials for drum skins etc., and talk about how the sound changes.
- Encourage children to talk about how sounds and music make them feel.

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<p style="text-align: center;">Spring 1 <u>Animal Magic</u></p> <ul style="list-style-type: none"> • Animals excluding Humans • Living Things and their Habitats 		
DM Objectives	Overview	Encouraging Scientific Enquiry
<ul style="list-style-type: none"> • 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 • Use all their senses in hands-on exploration of natural materials. • Explore collections of materials with similar and/or different properties. 	<ul style="list-style-type: none"> • Encourage children to use all appropriate senses to explore the parts of plants on the walk, including the leaves, stems/trunks, flowers, seeds, berries and fruit. • Encourage children to identify things left by humans in the surrounding natural environment e.g. litter. • Remind children not to damage the plants in any way and only gather natural objects from the ground. • Encourage children to talk about the objects in the collection, including where they came from on the walk and whether they were part of a plant, animal or neither. • Encourage children to talk about the natural objects that they are observing closely, drawing and sorting. 	<p><u>Observing over time</u></p> <ul style="list-style-type: none"> • How does the ... change over time? <p><u>Researching using secondary sources</u></p> <ul style="list-style-type: none"> • Find out more about the life cycles of the animals observed. <p><u>Classification</u></p> <ul style="list-style-type: none"> • Match animals and their young. • Find and identify natural objects to include in the collection. • Which natural objects are from plants, animals or neither?

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- Encourage children to look for patterns on the natural objects in the collection.
- Encourage children to identify items in the collection that are the same or similar.
- Encourage children to ask questions about the surrounding natural environment and the natural objects in the collection.

Spring 2

Old MacDonald had a Farm

- **Animals excluding Humans**
- **Living Things and their Habitats**
 - **Plants**

DM Objectives

- 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
- Use all their senses in hands-on

Overview

- Encourage children to observe young animals closely and talk about how they change over time.
- Encourage children to name and describe animals and their young, including how they change over time, while reading books, watching videos, looking at pictures or playing matching games.
- Encourage children to ask questions about different animals and their young

Encouraging Scientific Enquiry

- Observing over time
- How does the ... change over time
 - How does a plant change as it grows?
 - What happens to fruit, vegetables and flowers when left over time?
- Researching using secondary sources
- Find out more about the life cycles of the animals observed.
 - Look at seed and bulb packets to learn how to plant and care for them.

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	<p>exploration of natural materials.</p> <ul style="list-style-type: none"> • Explore collections of materials with similar and/or different properties. 	<ul style="list-style-type: none"> • Encourage children to use all appropriate senses to explore the parts of plants on the walk, including the leaves, stems/trunks, flowers, seeds, berries and fruit. • Encourage children to identify things left by humans in the surrounding natural environment e.g. litter. • Remind children not to damage the plants in any way and only gather natural objects from the ground. • Encourage children to talk about the objects in the collection, including • where they came from on the walk and whether they were part of a plant, animal or neither. • Encourage children to talk about the natural objects that they are observing closely, drawing and sorting. • Encourage children to look for patterns on the natural objects in the • collection. • Encourage children to identify items in the collection that are the same or • similar. • Encourage children to ask questions about the surrounding natural 	<p><u>Classification</u></p> <ul style="list-style-type: none"> • Match animals and their young. • Find and identify natural objects to include in the collection. • Which natural objects are from plants, animals or neither? <p><u>Comparative testing</u></p> <ul style="list-style-type: none"> • Compare how quickly different seeds/bulbs germinate. • Compare how different vegetable tops grow.
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		environment and the natural objects in the collection.	
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Summer 1 <u>People Who Help Us</u> <ul style="list-style-type: none"> • Humans • Forces 		
DM objectives	Overview	Encouraging Scientific Enquiry
<ul style="list-style-type: none"> • Use all their senses in hands-on exploration of natural materials. • Understand the key features of the life cycle of a plant and an animal. • Explore how things work. • Explore and talk about different forces they can feel. • Talk about the differences between 	<ul style="list-style-type: none"> • Encourage children to push floating objects under water and talk about how it feels the further they push the object under the water. • Encourage children to talk about what happens when they release an object under the water. • Encourage children to play with the magnets talking about how they push away or pull towards each other. • Encourage children to use bikes and scooters on different surfaces. • Encourage children to ride scooters and bikes up and down ramps. • Encourage children to drop objects into water and observe what happens. 	<p><u>Comparative testing</u></p> <ul style="list-style-type: none"> • Compare the path of different wind-up toys. • Compare how far different wind-up toys move. • Compare the speed and direction of gears. • Compare how easy or hard it is to lift an object with or without a pulley. • Compare how easy it is to ride a scooter or bike on different surfaces. <p><u>Classification</u></p> <ul style="list-style-type: none"> • Sort objects according to whether they float or sink. • Sort objects/materials according to whether their shape can be changed.

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materials and
changes they notice

- Encourage children to predict whether objects will float or sink.
- Encourage children to talk about how they change the shape of objects.
- Encourage children to talk about how they join materials together using different forces.
- Encourage children to talk about what they feel when using the woodwork tools and building kits.
- Encourage children to talk about how toys containing springs and elastics work.
- Encourage children to talk about how wind-up toys, pulleys and gear toys work.
- Encourage children to ask questions about forces, such as "What happens if I ...?"

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Summer 2
Moving On, Moving Up

- Humans
- Electricity

DM objectives	Overview	Encouraging Scientific Enquiry
<ul style="list-style-type: none"> • Explore how things work 	<ul style="list-style-type: none"> • Encourage children to find devices that are plugged into sockets. • Tell them to never plug in or unplug devices without adult supervision. • Encourage children to take photographs of electrical devices at home. • Encourage children to switch devices on and off that use batteries. • Tell children to never open the battery compartment of electrical devices without adult supervision. • Encourage children to talk about what electrical devices do. • Encourage children to talk about recharging devices e.g. remote-control cars, hearing aids, tablets. • Encourage children to ask questions about electrical devices and how they work. • Encourage children to remind adults to switch off electrical devices to conserve electricity. 	<p><u>Classification</u></p> <ul style="list-style-type: none"> • Identify objects that use electricity to work. • Identify devices that use batteries and/or mains electricity.



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