



St. Columba's Catholic Primary School

Church Lane, Walney Island, Barrow-in-Furness Cumbria LA14 3AD

Head Teacher: Mrs C O'Donnell

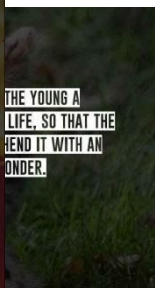
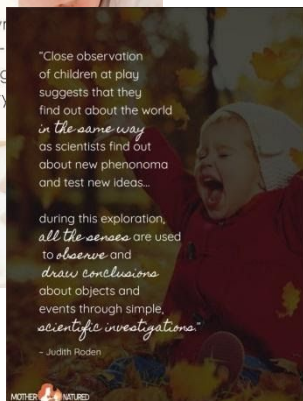
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"I have come that they may have life and have it to the full" (John 10: 10)



Science in the Early Years Foundation Stage at

St Columba's



In the Early Years Foundation Stage 'Science' is not explicitly mentioned in Development Matters Statements or Early Learning Goals;

however, the EYFS curriculum



includes a range of scientific skills, as do the Characteristics of Effective Learning.

our Early Years at St Columba's we focus the knowledge and skills that we teach young children. We have a play based curriculum which maximises opportunities children to play and explore, to ask questions and develop curiosity- the fundamental skills that lead to being a skilled scientist.



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We introduce children to science through play and move on to more structured teaching of science once children have developed their own sense of curiosity about the world around them. This is commonly seen as good practice and BOTH are vital to maximise learning. We believe that:

- Science should be fun (we all learn best when we enjoy what we are doing).
- First hand experiences are fundamental to early science. (This is a hands-on subject even in later years, and young children learn best by doing).
- Play and the situations set up for play can make important contributions to children's learning in this area.
- Opportunities for children to find things out/discover things should be provided. (Discovery is at the heart of science).
- Structured activities should not be introduced until exploration through play has been encouraged.

Science Coverage in the EYFS

Science falls in the Specific Area of Understanding the World. The statements from Development Matters are:

30-50 months:

- Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world.
- Can talk about some of the things they have observed such as plants, animals, natural and found objects.
- Talks about why things happen and how things work.
- Developing an understanding of growth, decay and changes over time.
- Shows care and concern for living things and the environment.

40-60 months:

- Looks closely at similarities, differences, patterns and change.

Early Learning Goal:

- Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes. (NB unlikely to achieve this ELG unless they also achieve 'Speaking' and 'Understanding')

Exceeding Statement:

- Children know that the environment and living things are influenced by human activity. They can describe some actions which people in their own community do that help to maintain the area they live in. They know the properties of some materials and can suggest some of the purposes they are used for. They are familiar with basic scientific concepts such as floating, sinking, experimentation.

Our teaching within science gives children the opportunity to achieve all of these goals through adult-led activities, adult-initiated activities and through the continuous provision within both the indoor and outdoor environments.

From September 2021 new Early Learning Goals will be introduced and we are keeping these in mind as we plan for Science this year:

ELG 2021 The Natural World

- 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 the effect of the changing seasons on the natural world around them.

Characteristics of Learning

In the EYFS children use a range of 'Characteristics of Effective Learning' in their independent learning. These can be seen as complementing 'Working Scientifically'.

- Playing and exploring – engagement
Finding out and exploring; playing with what they know; being willing to ‘have a go’
- Active learning – motivation
Being involved and concentrating; keeping trying; enjoying achieving what they set out to do
- Creating and thinking critically – thinking
Having their own ideas; making links; choosing ways to do things

All of these skills are encouraged through play based learning and our EYFS environment both indoors and outdoors.

Working Scientifically Skills

The following skills from the ‘Working Scientifically’ thread of the National Curriculum are also encouraged in our Early Years setting, through both Adult-led and Child-led activities.

Skills and Processes	What we do in the Early Years
Observing Comparing Classifying Measuring	Use all the senses to acquire information about objects, living things, and things which are happening. Look for similarities and differences and for patterns. Sort and group. Introduce children to quantities such as mass, length, time and temperature.
Predicting Estimating	Help children to use their experiences to make informed guesses.
Recording	Provide for a variety of recording techniques, e.g. model making, painting, drawing and some writing.
Testing	Children should be encouraged to test out their ideas and asked if they can think of ways to try and find things out.
Drawing conclusions and reflecting	Encourage children to talk about what happened in an activity. Is what happened what they thought would happen? Can they attempt to give reasons for why things happen?
Communicating	Encourage children to use the correct vocabulary. Open questions e.g. What do you think...? Let children use their own vocabulary as a starting point. A wide range of experiences, free exploration and play will increase their confidence and widen their use of vocabulary, therefore helping to develop the language of science.

Links to KS1

When planning for Science in the EYFS we think about the skills progression into KS1 and try to give children an opportunity to lay the foundations in these topics through continuous provision and explicit adult led Science tasks.

Living Things and Their Environment

*Human, animal and plant life...*i.e. life cycles, growth, senses, and how they interact with the environment.

Materials and Their Properties

*What they are like...*i.e. colour, whether they float or sink, flexibility, texture, elasticity, natural/made, magnetic/non-magnetic, transparency, specific uses.

*How they are changed...*i.e. by heating, cooling, manipulating and mixing.

Physical Processes

*Electricity...*i.e. what appliances use it, battery powered toys and dangers associated with misuse of mains electricity.

*Forces...*i.e. making things move by pushing and pulling and changing movement in terms of starting, stopping, speed and direction.

*Light...*i.e. dark as the absence of light, shadow play and sources of light.

*Sound...*i.e. how they can be made, how different sounds can be made.

Continuous Provision

Within our continuous provision both indoors and outdoors we provide children with the resources they need within the environment to carry out a range of different activities linked to science on a daily basis. Here are some examples of different things the children can access and investigate in the areas of continuous provision:

Water tray (floating, sinking, absorbency of materials)

Sand tray/pit (consistency of materials, role play)

Bug hotel (mats/logs to turn over, wild flowers and long grass)

Construction area (junk modelling, different types of materials)

Growing area (seeds, plants, minibeasts)

Mud kitchen (consistency of materials, scented herbs, stones, minibeasts)

Stage (musical instruments and sound)

Small world (different animals, props, dolls' house)

Playdough area (birthday props/cake decorations to encourage talk about changing and growing)

See the table below to see how these play based activities link to scientific knowledge:

Science area of Knowledge	Play based activity/ area
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Ourselves	Role play baby clinic, doctors, opticians, dentists etc. Small world
Animals	Role play veterinary, pet shop etc. Visits to farms, zoos etc. Explore what is in the outside area e.g. invertebrate hunt Butterfly boxes, hatching chicks etc. Bug hotel Small world
Plants	Role play garden centre, florist etc. Plant hunt outside Growing area Grow plants Look closely at edible plants
Properties of materials	Dough, water, sand play Rock hunt Collections of plastic etc. objects Construction Mud Kitchen
Materials changing	Cooking Modelling materials Playdoh
Separating materials	Sieving to remove things from the sand or water tray
Electricity	Safety Battery powered toys Appliances used by children e.g. computer
Forces and motion	Cars and other wheeled vehicles & sit on wheeled vehicles Construction toys that need bits pushing together/ pulling apart Playground visit to swings/ seesaw/ roundabout etc.
Light	Cave and torch Shadow play
Sound	Percussion instruments Junk model instrument making/playing
Space	Moon watch in winter Read books about space travel

Enhanced provision

Each week we set up different provision for children to access independently during exploring time. These are often based on texts, topics or children's interests to provide a hook eg. Goldilocks and the three bears – investigating different materials to make a new bed for Baby bear.

At other times they may be linked to the children's interests and resources would be put out for children to experiment with and find things out for themselves. For example, autumn leaves and magnifying glasses.

The key to this provision is the adults' responses and questioning, encouraging children to give explanations about what is happening. In our new Early Years Unit we aim to have adults free within the provision to enhance children's learning within their play through these quality conversations.

Outdoor Learning

The outdoor learning environment provides the children with a wealth of scientific activities. Children learn to explore and investigate by just using the natural things in the environment for example, looking at leaves and flowers, digging for bugs and exploring the weather. Again, having an adult on hand to facilitate discussions around children's curiosity is paramount to their understanding of the world around them. In our new Early Years unit we aim to have an adult working in the outdoor environment for this purpose.

Teacher led inputs

Throughout the year we will also introduce children to Science in Adult Led activities. These include either investigations as a whole class or with small groups.

For example we might look at the changes over time when planting beans (linked to Jack and the beanstalk), putting gummy bears in water and watching them dissolve/change, and trying to rescue animals trapped in ice balloons/cubes.

Whole class/group sessions might include objects and/or PowerPoints. These might help with modelling correct language eg materials, sorting items e.g. how musical instruments make sound, grouping animals.

As well as investigations based on topics, seasons or children's interests we also use the 'Problem Pup' investigations and 'Science Sparks' investigations each half term. These spark children's interest in Science through the use of stories to link their learning to real life situations.

Spontaneous opportunities

Other ways we teach Science in the Early Years are through spontaneous opportunities and events. These are unplanned and arise from children's comments and observations eg spotting a rainbow, having a ladybird land on them or snow! Arguably these are the times

when the children's interest is most captivated and we feel that it is essential in the Early Years to give time and discussion to these unplanned events in order to enhance children's learning opportunities.

Science Links to Other Areas of the EYFS

In the EYFS Science broadly falls into the Specific Area- Understanding the World however there are several links to other areas of the curriculum, for example:

Many of our Science activities will enhance Communication and Language and Personal, Social and Emotional Development through discussions and accessing activities. Some activities will also encourage development of, for example, motor skills (Physical Development), Mathematics (e.g. thinking about shapes, numbers, size), awareness of textures and sounds (Expressive Arts and Design) and learning new words (Literacy).

Resources – we need to audit what we have and add others to the purchase list

Science Equipment: Torches Colour paddles Magnets Magnifying glasses Binoculars Life cycle creatures Bug catching equipment Range of different every day materials Clipboards Light box Sorting hoops Rulers Mirrors	Small world: Farm animals Wild animals Dinosaurs Insects Fabric/props for small world environments Wooden resources Metal resources	Outdoors: Seeds Pots Soil Spades etc Watering cans	Books: Non-fiction books about -Seasons -weather -animals -humans -toys -materials -light -sound
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Things to Purchase



Twigz Two Wheeled Metal Wheelbarrow

Product Code: EY04550

This wheelbarrow features two wheels for added stability, making it perfect for small gardens. [Read more](#)

Quantity:

£49.95 ~~£55.95~~

£53.94 ~~£60.94~~

In Stock

[Add to basket](#)



All

£285.77 ~~£300.00~~

[Continue shopping](#)

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Basket Items			Price	Qty			
	Wooden Colour Mixing Viewers 6pk Product Id: EY01175 Edit	✓ Hurry, less than 10 available	£42.95	-	1	+	Remove
	Colour Mixers Product Id: FC15 Edit	✓ In Stock	£3.99	-	1	+	Remove
	Easi-Torch 6 Pack Plus Charger Product Id: SC00117 Edit	✓ In Stock	£69.95	-	1	+	Remove £69.95
	Matching Pairs Texture Blocks 32pcs Product Id: RL15 Edit	✓ In Stock	£29.95	-	1	+	Remove £29.95
	Early Years Exploring Material Books 10pk Product Id: LB00639 Edit	✓ Made to Order. Order by 12 noon for 5 day delivery.	£99.95	-	1	+	Remove £99.95
	Dinosaur Bones Discovery Count and Size Set Product Id: EY06862 Edit	✓ In Stock	£15.00	-	1	+	Remove £15.00
	Small Mirror Assortment Product Id: SC10029 Edit	✓ In Stock	£11.99	-	2	+	Remove £23.98

We also need to look at ordering sand and water resources that are differentiated for Nursery/Reception or at the level of skill correct for the child.