



Co-op Academy  
Portland

# Science

**Curriculum Intent, Implementation and Impact for  
Science at Co-op Academy Portland**

At Co-op Academy Portland we want children to be successful, confident and articulate scientists who are prepared for life in STEM and beyond. Children are given the opportunity to access fun, engaging, high quality science education that provides them with the foundations and knowledge for not only understanding the world around them, but also understanding *why* it is important that they do this.

Our curriculum is built on the foundations of the statutory National Curriculum. Our deliberately sequenced substantive and disciplinary knowledge will ensure that learning is built progressively from Nursery to Year 6 in identified strands that enable our children to become competent scientists. Each topic is delivered using an 'enquiry based approach', driven by the working scientifically content of the National Curriculum. This helps our children to develop transferable problem solving skills and to truly understand what Science is.

We want to raise children's aspirations by providing carefully planned cultural and careers related enrichment in every year group. This, alongside a strong focus on scientific vocabulary, will ensure that children are equipped for the opportunities of tomorrow through exposure to different careers, local and national pathways, career progression, visitors, trips and links with businesses.

Our aims are that our pupils are able to:

- Develop a coherent and sequential knowledge of the world around them.
- Be successful, confident and articulate scientists who are prepared for life in STEM and beyond.
- Learn deeply about the world around them and understand *why* it is important that they do this.
- Understand the process of scientific inquiry and experimentation.
- Enhance their critical thinking and reasoning skills in relation to such scientific inquiry.
- Feel that they are scientists capable of achieving great things.

## Long Term Plan (EYFS):

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	My World and Me C1: Seasonal Change - Living Things C2: Seasonal Change - Living Things	Woodland Walk C1: Woodland Walk - Seasonal Change, Animals inc Humans and Living Things C2: [History and RE drivers here - look at LTPs]	Frozen Planet C1: Frozen Planet - Seasonal Change and Animals inc Humans and Living Things C2: [Geography driver here - look at LTP]	C1: [History and RE drivers here - look at LTPs]  C2: Get Lost In A Book - Seasonal Change	Down at the Bottom of the Garden C1: Let it Grow - Seasonal Change, Plants and Animals inc Humans C2: [Geography driver here - look at LTP]	Hero or Heroine C1: Save the Seas - Seasonal Change and Living Things C2: [Geography driver here - look at LTPs. Elements of History and Science (forces)]

What does Science look like in Early Years Co-op Academy Portland?

- Children explore their own bodies and their senses.
- They learn to name the parts of the body and what we use them for.
- They learn about animals in spring 1 and summer 1, including wild animals, birds, minibeasts and their habitats.
- Children observe seasonal change across the year and have opportunities to discuss and use vocabulary related to describing the seasons.
- Children observe changes such as chicks hatching and caterpillars turning into butterflies, the seasons changing, plants and flowers growing. They are supported to notice and talk about what is happening and why.
- They learn about being healthy, including eating a range of foods and taking part in exercise (links with PSHE Jigsaw and My Happy Mind).
- They develop a sense of curiosity and exploration through a range of resources relating to our topics, e.g. magnets, magnifying glasses, things to smell and taste etc, and through the continuous provision areas such as sand, water, small world, construction etc.
- Opportunities in continuous provision include access to the discovery area, malleable area, mark-making area, construction, small world, funky fingers, interactive display table where appropriate.
- Other enhancements based on children's interests or a planned theme provide further opportunities for children to embed, develop and use their skills.
- Evidence is recorded in floor books, and photos of relevant activities are put on Dojo.
- Topic lessons include links with science (through UTW) and some tasks will be adult-led to support developments of particular skills.

## Long Term Plan (Years 1-6):

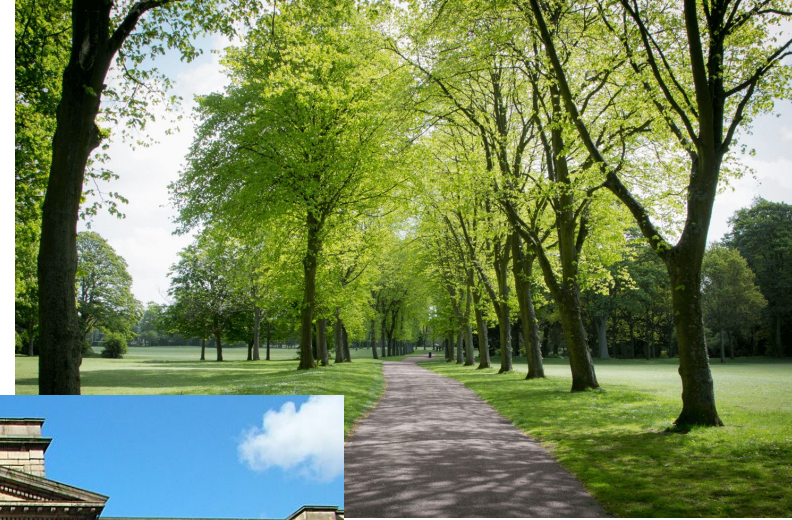
<b>Year 1</b>	2. Seasonal changes (day length) 4. Animals Including <u>Humans</u>	2. Seasonal changes (change in weather causes many changes) 3. Everyday Materials	2. Seasonal changes (changes in seasons) 1.Plants & Living Things
<b>Year 2</b>	6. Living things and their habitats 8. Uses of everyday materials	7. Animals including humans	5. Plants
<b>Year 3</b>	9. Rocks 10. Light	12. Plants	11.Animals Including Humans 13. Forces & Magnets
<b>Year 4</b>	16. States of matter 15.Animals Including Humans	18. Electricity	14. Living things and their environments 17. Sound
<b>Year 5</b>	20. Living things and their habitats 21. Animals including humans	19. Properties and changes of materials	22. Forces 23. Earth & Space
<b>Year 6</b>	24. Evolution & Inheritance 25. Electricity	27.Animals Including Humans (circulatory system)	27. Classification 26. Light

- In Years 1-6, Our subject is taught weekly for a weekly session of a minimum of 1.5 hours.
- Our Medium Term Plans provide detailed information to staff, including: Prior learning, Next steps, National Curriculum programmes of study, Key learning, Careers links, Suggested activities, Possible evidence, Misconceptions, Reading, Science capital/enrichment opportunities and Working scientifically opportunities. We also use White Rose Science as a resource to support teachers and children.



## Examples of Cultural Enrichment opportunities::

Plant trees in local park



Liverpool World Museum



Chester Zoo



Tam O'Shanter's Urban Farm



STEM Club

STEM Workshops by external providers

## How do we know that the children have made progress in Science?

### Class Teachers:

- Every lesson starts with a Do Now quiz, with questions linking back to previous learning. This ensures that any gaps in substantive knowledge are quickly identified and addressed.
- Quality first teaching ensures that AfL opportunities are present throughout each lesson, enabling practitioners to give feedback in the moment to make sure all children make progress.
- Teacher marking identifies any misconceptions, and these are addressed verbally or through written responses by children before the next lesson.
- Start and end of unit quizzes are completed to show progress
- At the end of the unit, teachers will mark if the child is WTS or EXP using a gap analysis.

### Subject Leaders:

- During the half term the subject is being taught, subject leaders will complete learning walks to evaluate the teaching and learning environments related to their subject. This will be completed on the school feedback proforma and shared with teachers in 1:1 feedback
- After a unit has been completed, a book look will be completed for every class, using a cross section of pupil demographics (HA, MA, LA, SEND, EAL and PP). Each lesson will be assessed for its coverage of the key knowledge on the Medium Term Plan, and the effectiveness of the activity. This will create an overall effectiveness score for each child, and a score for the unit.
- As part of this assessment process, pupil voice will also be completed to triangulate this with the book look.
- Assessment is used as a tool to support curriculum development.