Corporation Road Community Primary School

Science Curriculum Policy

To be approved by the Governing Body

Chair of Governors: Mrs Val Johnston

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To be reviewed: October 2020

Science Curriculum Policy

Outline:

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2. Aims and Objectives
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1. Introduction and Purpose

1.1 At Corporation Road we believe that through the study of science, children develop a sense of the world and how it works! We believe it is a great tool of exploration and collaboration.

1.2 All year groups have specified Science learning objectives which are outlined in our Long Term Plan). These objectives are in line with the National Curriculum (see Appendix) which states what year groups should cover. Science will be taught at least once a half term during Awe and Wonder Monday.

1.3 The implementation of the policy is the responsibility of all teaching staff.

2. Aims and Objectives

2.1 Practical enquiry where possible

As Aristotle said “Tell me and I will forget, show me and I may remember, involve me and I will understand.” Our aim is that teachers are confident enough to give children many and regular opportunities to work scientifically. Children should learn to use and apply investigative and practical skills in almost every Science session. Although in some instances the teacher may demonstrate something, the vast majority of lessons involve children carrying out tests in pairs, threes and small groups. This hands-on experience reinforces and embeds what they have heard and seen.

2.2 Collective curiosity

Children develop a sense of excitement and curiosity about natural phenomena through observing and conducting a variety of experiments.

2.3 Children suggest what they test

Achievement is high when children plan, carry out and evaluate experiments that they have, in part, suggested themselves and this is emphasised in the Ofsted document, ‘A survey into science education in schools’ (2010-2013). Children need to make decisions based on previously acquired knowledge. We like our children to suggest areas they would like to learn more about or pose questions that develop an earlier test.

2.4 We encourage questions

We encourage our children to ask challenging questions and will admit that we may not know the answer ourselves. We want to be part of the journey to finding out and will support learners in setting up investigations or carrying out research to help answer the questions they pose.

2.5 Children should talk

We want our children to be active learners who ask questions and talk about their learning. Science lessons should generate a buzz. Children will be actively engaged in discussions about concepts, might challenge statements and verbally work through new ideas to develop understanding. Science is not about teaching from the front but about actively seeking out thoughts, opinions and misconceptions so these can be addressed and developed.

2.6 Science is fun and engaging

Although all our Science teaching is grounded in knowledge and understanding we want out children to develop a sense of awe at their world. Children should take part and conduct experiments that can appear magical until the science behind them is explained.

2.7 Knowledge is power

Children need to develop scientific understanding by acquiring the necessary knowledge to explain what they have observed and investigated. Teachers explain what happened and why in every session and encourage children to explore this understanding by applying it in different ways or different situations. Even in younger classes our sessions are grounded in scientific fact. We take the National Curriculum statements as the minimum requirement. For example in Year 2 the teacher will deliver beyond the required labelling parts of a plant to explore different types of root, why some are bigger than others, why plants in arid areas might have deeper roots than others or why mangroves have such unusual root systems.

2.8 Visits are used to develop interest

As in all areas of the curriculum we actively seek out visits to enhance learning. Children should regularly go out to experience science in the ‘real world’. This might be a seasonal walk to a local Park, a visit to a Hospital to learn about DNA or a practical session at a Local vet surgery to investigate animals. Visits should relevant and have an impact on classroom learning.

3. Teaching and Learning Strategies

We expect our teachers to use strategies to promote thinking in science by ensuring children use these 5 tools for scientific investigation across the year. It serves as a useful memoire when planning a year's work:

3.1 Classifying

This involves children sorting and grouping, from identifying similarities and differences between two objects to choosing a criterion by which to sort. Classification is a useful tool with which to start many science topics.

3.2 Comparative and fair testing

This involves identifying variables that will affect outcome.

3.3 Using a survey

This involves looking for patterns in data, from the very simple to more complex involving two variables

3.4 Problem solving

When children use their knowledge to solve a problem in context

3.5 Observing

Which involves watching something over time. Children use their observations and results to draw conclusions, make predictions and suggest ideas. They present their data in a variety of ways which help them to answer the initial question posed.

4. Science curriculum Planning

4.1 Long term plans to be completed based upon the National curriculum overview for each Year group. Science topics to be linked to Cornerstones Topics for each year group. Every scientific objective **MUST** be planned for and taught.

4.2 Short term planning to be completed on the same format as used for topic, each session during the awe and wonder day must be planned for (three lessons).

4.3 Each Science unit starts with a discussion to find out what children already know and understand. Planning can then be adjusted in response to this task. 'Concept maps', brainstorms and quizzes are a great tool for assessing prior knowledge. Repeat the task at the end of the unit to see what children have learnt.

5. Assessing children's progress

5.1 Formative assessment

This is carried out while a task is being completed – through discussion, specifically questioning between child and teacher. It can be carried out through observations of children working in groups or individually. Our questioning aims to help children learn by encouraging them to think critically about what they have achieved.

Parents are informed of science units and topics to be covered at the beginning of the term through the topic letter. There is an opportunity for parents to see work and discuss progress at the parents evening meetings and class teachers are always willing to show and discuss science at other times. Progress in science is formally reported in the end of year school report and in parents' meetings.

5.2 Testing

The subject coordinator will distribute year appropriate Rising Stars tests for the teachers to use as part of their assessment of their children's' progress. These will be completed after a unit of Science work on Awe and Wonder days, for example Year 5 forces. The teacher will then use this assessment and complete an assessment tracker. Identifying any areas that need re-teaching.

6. Monitoring and review

6.1 The role of the coordinator is to monitor and review the planning, teaching, assessment and development of Science skills across the school alongside the leadership team.

6.2 The role of the coordinator is also to:

- Produce and maintain the Science policy
- Liaise with the Head Teacher around the purchase and organisation of curriculum Science equipment
- Attend relevant courses and give feedback to relevant staff
- Give help and support to staff in terms of resources and approaches to planning and assessment
- Organise productive and engaging CPD for relevant staff

6.3 Monitoring

Science books are monitored at least half-termly by the Science coordinator and a member of the SLT with Verbal and written feedback given to individuals within a week of the 'book scrutiny and general points passed onto the staff team. Book scrutinies to focus on progress over time, marking and feedback, a consistent school approach and policy to practice. They can result in discussion about how we teach and record science and our practice can be amended in the light of this.

7. Non-Negotiables

7.1 Science is taught at least three times a term during ‘Awe and Wonder’ day (sometimes four) – date STP as it is delivered to match children’s learning outcomes.

7.2 Use the new Science Objectives Coverage Tracker to tick off which objectives have been covered each half term. This will also help with future planning – knowing what needs to be taught.

7.3 Work produced in the children’s books must be in their own words to explain or write-up investigations. If the work is practical, please signpost where the evidence is on your planning e.g. displays, group investigation sheets, photos.

7.4 Address misconceptions of concepts and facts to ensure that they are clear in their knowledge. Make sure they have the correct information.

7.5 Work that is written up in children’s books should be presented well so that the children have pride and value in their achievement.

7.6 Make connections to the real world in Science lessons – use the outdoor area or ‘real life’ objects (when appropriate) to give children a context and to maintain a high level of engagement.

7.7 Finally, if Science is taught well, children will have good achievement. The Science Tracker will reflect this and it will demonstrate what the children understand and can do – keep updating it!

Appendix 1 - Grid of units

Year Group Science Units

Foundation Stage
Science is taught through the area ‘Knowledge and Understanding of the World’.
Topics include ‘Animals’, ‘Dinosaurs’ and ‘In the Air’

Year 1
Seasonal Change (To include regular Heath walk to observe seasonal change and to provide a context for plant work in particular)
Plants
Animals, including humans
Everyday materials
Light

Year 2
Animals, including humans
Living things and habitats
Everyday Materials
Sound

Year 3
Plants (through maintaining the EP allotment)
Animals, including humans
Rocks
Forces & Magnets

Year 4
Animals, including humans
Living things and habitats
States of matter
Sound
Electricity

Year 5

Animals, including humans

Living things and habitats

Properties and changes of materials

Light

Year 6

Animals, including humans

Living things and habitats

Evolution and inheritance

Earth and space

Electricity