



St Joseph's Catholic Primary School Science Policy

Agreed by the Governing Body on	Spring 2018
Review Date	Spring 2019
Review Schedule	Annual
Person(s) Responsible	Science Leader and Provisions and Achievement Committee

MISSION STATEMENT

In the St. Joseph's family, learning together through Jesus, we aim to develop to the fullest possible extent the whole person, socially, emotionally, creatively, academically, physically and spiritually.

SCIENCE POLICY FOR ST JOSEPH'S CATHOLIC PRIMARY SCHOOL

1. AIMS

- To stimulate children's **enjoyment and interest** in science and to deepen **links with the wider community** so as to provide a range of **enrichment activities** which will promote children's learning and engagement.

- To develop children's understanding of key **scientific concepts** and **scientific skills** and to put **scientific enquiry** at the core of children's learning.
- To provide a meaningful and practical **context** for their learning and to encourage **cross curricular** links wherever possible (e.g. with literacy so that they are using and applying their writing skills in the drafting of explanations, instructions and conclusions).
- To ensure that children understand the **relevance** of what it is that they are learning and **make links** between their learning in other areas which are closely allied to science (e.g. maths).
- To ensure that the curriculum is **broad, balanced** and well informed by developments in science education.
- To ensure that the curriculum meets the **learning needs of all groups** of children.
- To build children's specialist **vocabulary**, which they can then use with precision as they progress and to ensure, given the changes to the National Curriculum in 2014, that key ideas are **regularly reinforced** across the different key stages over time.

2. PRINCIPLES UNDERPINNING THE TEACHING OF SCIENCE

- To ensure that children learn through a range of **engaging and practical activities** including a variety of practical approaches, drama, singing and ICT. Teaching should make use of a range of **high quality resources (concrete and pictorial)** interactive resources on **Science Bug Club** which can be used for whole class or group work.
- To encourage **collaborative learning** amongst the children.
- To encourage **independent learning**. Children will be encouraged to pose questions, perform investigative practical work and solve problems.
- To encourage the **use and application of skills learnt in other core areas** of children's learning (e.g. clear oral explanations of observations or precision in measurements).
- **Differentiation**, where appropriate, will allow all children to progress in their learning.
- Children will be encouraged to **record** in a range of ways and to **confidently communicate** their understanding of new concepts orally and in writing. Children's science work should show a range of well differentiated recording strategies and good evidence of **self and peer assessment**.
- Teachers must be **secure in their own subject knowledge**. They should ensure that their plans are well informed by current research and developments in science education and that their teaching takes full advantage of the rich programme of visiting scientists/trips which the school organises. Teachers to take full advantage of **additional CPD opportunities** organised by the Science Coordinator (e.g. for Year 3 and 4 at the Crick Institute) and the science induction packs created for new staff.

- **Reinforcing a cross curricular** approach: teachers are encouraged to seek out cross-curricular teaching opportunities for science: e.g. literacy and science (talk *for writing in science (explanations)* and *Book Week*); maths, ICT and science (*measuring; recording; analysing and interpreting data*); humanities and science (*WWF whole school project; Green School and Climate Change; research and discuss work of famous scientists*); art and science/maths (*optical illusions for Wall Art*).
- Teaching staff have agreed that Science cannot be given to internal or external **supply teachers** for more than half a term each term, unless the supply teacher is a science specialist.

3. COVERAGE OF THE NATIONAL CURRICULUM (NC) FOR SCIENCE.

- The curriculum will be **broad and maintain a good balance** between all 4 areas of the science curriculum. Consistent with the principle that there is no '*monopoly on wisdom*', we will learn about all aspects of the science curriculum, including those relating to evolution and inheritance.
- Each year group will cover topics as shown in the *Mapping progression across KS1 to KS2 National Curriculum Framework from Sept 2014*.

*This document maps out the statements in the new NC, for teaching from September 2014, across the key stages to show progression. It is divided up into the following sections: **Sc1 working scientifically; Sc2 biology; Sc3 chemistry and Sc4 physics**. It is then further subdivided into **KS1, Lower KS2 and Upper KS2** so year groups should coordinate the teaching of different topics within their 2 year phase. **Working scientifically** is to be delivered through the teaching of substantive subject content, and is **not to be taught separately** as content in its own right.*

- Planned experiences for learning should then promote **progression within and between year groups**.
- The teaching of each science topic should be supported by ideas and activities from a range of sources and other subjects (*see Science Action Plan for new websites, ICT related resources, cross curricular links and wider community partnerships*). We should continue to encourage **talk for writing** in science. Not only is this linked to our school wide priorities in **literacy** but we can use writing in science as evidence for our literacy assessments. (See Appendix 1)
- **Lessons plans** should clearly identify the intended learning intention and success criteria, resources required, differentiation (if appropriate), use of ICT to support learning (if appropriate), and particular specialist vocabulary (if appropriate). Children's work should be marked against the LIs/SC and next step comments written in the form of questions in line with the school's marking policy for maths. Teachers should continue to use the template for the **Medium Term Science Plan** on the Shared Area and the relevant classroom folder of science resources which is kept in each class. This folder should, in turn, be updated by reference to the Science Coordinator's updates/emails.

4. MONITORING CHILDREN'S ACHIEVEMENTS AND ATTAINMENT

- Every teacher is encouraged to develop a range of **of evidence** relating to children's achievements. These could include: the children's science books, notes made by the teacher, electronic examples of children's learning (e.g. graphs, their own concept cartoons, etc) and photos.
- Children's science work should show a range of well differentiated recording strategies and good evidence of **self and peer assessment**.
- Teaching staff will no longer award levels to children using NC level descriptors or, for Sc1, APP.
- Instead each year teachers will need to agree for the children's annual reports/Summer Structured Conversations, a target for each child expressed in child friendly language which the child can take forward to the next year. This is likely to focus on Sc1 – working scientifically e.g. *I can predict/plan/observe closely...* (In 2015-2016 teachers based the targets on the '*I can*' statements in Andrew Read's '*Teaching Guide*' '*Science Outcomes*' while cross referring to the Mapping progression document referenced above.)
- Teachers will need to continue to use **AfL strategies** in lessons as before e.g. questioning and concept maps at the beginning of a new topic to better assess what the children already know. In the absence of any specific assessment descriptors from the LEA, teachers were advised for 2015-2016 to use the **topic tests** on the **Switched on Science website (LGFL)** during week 4-5 of their topic to help identify (albeit on a **summative basis**) those children who are not yet secure in their understanding of, and knowledge about, a particular biology, chemistry or physics topic.
- The SLT will analyse Key Stage data at the end of the year to gain information on how the children in the school are progressing from year to year.
- National Science tests (for which schools are randomly selected are biennial. There will be no tests for science in 2017 but TA judgments will need to be loaded up by e.g. 29th June 2017 for Year 6.

5. SUPPORTING THE DEVELOPMENT OF THE LEARNING AND TEACHING OF SCIENCE

- The Science Coordinator, with support from other staff, will ensure that there are adequate science resources and that these are stored in a manner that makes them easily accessible to all.
- The Science Coordinator will support colleagues with identifying ways to enrich the coverage of the science learning. This will include the creation of **an after school science club** in 2017, the use of **Science Bug Club**, **Switched on Science** and visits, visitors and competitions.
- The strong programme of **curriculum enrichment** through out of school visits and on site visitors, such as scientists and journalists from the RVC, UCL, Imperial College London and Royal Institution must be maintained. **STJ's science fortnight** should continue as an annual event supplemented by regular use of outreach programmes with the Wellcome Trust and other wider community partners. Links should continue to be forged with secondary schools such as St Michael's, Sir

Thomas More, LSU, EGA and Marylebone School for Girls to take advantage of their onsite facilities and to help smooth the transition from year 6 to year 7.

6. Health and Safety

- The safe use of equipment and materials should be promoted at all times. The Association for Science Education (ASE) document '**Be Safe**' has been adopted by the school as a guide to health and safety in science. Copies are kept in the Green Room.
- All offsite trips will require the class teacher to perform a **risk assessment**.



APPENDIX 1

Planning for 'scientific talk.'

Knowledge

- What do you want them to explain?
- What do they need to know?
- How will you teach this?

Vocabulary-displays

- What vocabulary is required?
- How will you teach this?
- How will they practise this?

Hands on experiences

- What can they discover for themselves?

Writing frames

- How can the writing be structured?
- What sentence starters can you provide?
- What images will help?