SCIENCE POLICY

FEDERATION MISSION STATEMENT

Christ The King Federation is a community called by God to work collaboratively for the common good; providing an environment that nurtures and inspires pupils to realise their potential, as we journey together.

This federation is committed to safeguarding and promoting the welfare of children and young people and expects all staff and volunteers to share in this commitment

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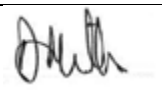
Chair of Governors Signature:	

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Overall Policy

Why Science?

'Learning science helps children to develop ways of understanding the world around them'

'Science is as basic a part of education as Numeracy and literacy; it daily becomes more important as the complexity of technology increases and touches every part of our lives.'

From PRIMARY SCIENCE……TAKING THE PLUNGE'

By Wayne Harlen

Intent

It is the intent of The Christ the King Federation Science curriculum to foster in all young people, a lifelong curiosity in the sciences. We believe that science will lead to a better understanding of ourselves and the world. It provides opportunities to appreciate scientific facts and concepts and to experience scientific discovery. Science at Christ the King Federation allows children to develop their ideas and ways of working, enabling them to make sense of the world in which they live through investigation, as well as using and applying process skills.

Our science teaching offers opportunities for children to:

- Develop scientific knowledge and conceptual understanding through the specific disciplines of Biology, Chemistry and Physics.
- Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.
- Be equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.
- Develop the essential scientific enquiry skills to deepen their scientific knowledge.
- Use a range of methods to communicate their scientific information and present it in a systematic, scientific manner, including I.C.T., diagrams, graphs and charts.
- Develop a respect for the materials and equipment they handle with regard to their own, and other children's safety.
- Develop an enthusiasm and enjoyment of scientific learning and discovery.

The progressive nature of the curriculum will ensure that children will consolidate scientific knowledge, develop key skills and reinforce key scientific vocabulary from each unit. (**See appendix 1 – Science Curriculum key skills and knowledge progression grid).**

In Key Stages 1 and 2, 1.5hrs and 2hrs respectively are allocated to science each week, to allow sufficient curriculum time for pupils to embed what they have learned in long-term memory.

Statutory Requirements

Statutory requirements for the teaching and learning of Science are laid out in the National Curriculum in England Framework Document for Teaching, September 2014 and the Statutory framework for the Early Years Foundation Stage, September 2014.

Implementation

The Twinkl scheme of work is used as a foundation through which the national curriculum is taught. Children throughout the school, wherever possible, investigate scientific ideas through first hand practical work. All teachers are responsible for the teaching of Science to their own class and planning for scientific experiences.

Early Years Foundation Stage (EYFS)

At Christ the King Federation, children in EYFS are introduced to science through the EYFS Curriculum Guidance, with the Early Learning Goal (ELG) of Knowledge and Understanding of the World forming the foundation for further learning in Science. Children develop their understanding of the world around them on a daily basis, using their senses to explore and learn about objects and materials. Children are given holistic learning experiences, incorporating elements of science in their everyday activities.

Key Stage 1

In Key Stage 1, children gain experience of making observations, recording and analysing results, using simple tables and bar charts, recognising a fair test and making simple predictions of outcomes. Children observe, explore and ask questions about living things, materials and physical phenomena. They begin to work together to collect evidence to help them answer questions and to link this to simple scientific ideas.

Pupils should read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge.

Key Stage 2

In Key Stage 2, children develop skills and ideas further. Children are encouraged to develop an independent approach to their science learning, through asking questions, suggesting improvements to their work and supporting each other towards achieving a heightened understanding of scientific concepts. Scientific enquiry skills are promoted across KS2 with children being given the opportunity to plan, carry out and evaluate experiments. Children are encouraged to develop their own methods for presenting their ideas (to include drawings, diagrams, use of ICT, tables and charts.)

Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.

- The main science topics covered throughout the school are through the specific disciplines of biology, chemistry and physics and include: sound, life processes, electricity, classification, and light, living things in the environment, forces, plants, earth and beyond, grouping materials, separating materials. In addition, children are given the opportunity to develop an awareness of the role and importance of science in everyday life **(see appendix 2 Science Curriculum Map)**

The Science curriculum at Christ the King Federation is further enriched through class trips and workshops with a science focus such as trips to the Science Museum, Hyde Hall Gardens and Greenwich Observatory. Both schools also celebrate British Science Week each year with additional science activities throughout the week.

Equal Opportunities and Inclusion

We are committed to providing a teaching environment conducive to learning.

Each child is valued respected and challenged regardless of ability, race, gender, religion, social background, culture or disability. All children should have full equality of access to curriculum provision and learning opportunities. This is accomplished through carefully planned lessons and adaptive teaching to ensure all pupils are able to access their science lessons and achieve success in science.

We value science as a vehicle for the development of language skills, and we encourage our children to talk constructively about their science experiences.

- We recognise the particular importance of first-hand experience for motivating children with learning difficulties.
- We recognise that science may strongly engage our gifted and talented children, and we aim to challenge and extend them.

Cross Curricular Links

Science plays an important role in the development of investigative skills and draws upon strong mathematical links, for example measurement, pattern recognition, graphical skills and data handling.

We recognise the important role computing skills have to play in the development of scientific skills. We also recognise the importance of being computer literate. Computing skills are used to enhance teaching and learning of science and to give all children the opportunity to use computing to research, collect, analyse and present scientific findings.

Wherever possible and appropriate, Science is linked to other areas of the curriculum and in particular the outdoor learning environment. Aspects of science are linked to:

- English e.g. instructional and report writing
- Mathematics e.g. data handling
- Geography e.g. physical phenomena of weather and water
- D&T e.g. Testing and evaluating
- Music e.g. sound
- P.E. e.g. body structure/movement
- PSHE e.g. keeping healthy

The Learning Environment

Classrooms displays / Working Walls must include the relevant scientific vocabulary and ideas relating to the unit of work and a completed KWL grid for the topic. The profile of science should reflect its place as a core subject. Resources for the unit of work being covered should be appropriately accessible. There should also be evidence of pupils work on class science displays.

Resources

St Francis':

There is a central store of resources, based at the rear of the stage. Individual teachers are responsible for collection and return. **IT resources**, IWB's and the internet are also available to compliment the teaching of the subject.

St Joseph's

Practical science resources are situated in the science section of the main hall walk in cupboard. Class teachers are responsible for collecting and returning any resources they are using. **IT resources**, IWB's and the internet are also available to compliment the teaching of the subject.

An inventory of equipment at both schools is completed annually with any new or replacement resources ordered as necessary. The science subject leader should be notified of any resources which are not available or damaged.

Assessment

All teachers are responsible for the assessment of each pupil in their class against the New Curriculum 2014 skills and knowledge in science. Each unit of work should begin with an assessment of what the children already know, using a KWL **grid (see appendix 3)**. KWL grids should then be added to class science displays, each pupil should also have their own one stuck into their book at the start of each topic.

Assessment and record keeping is a continuous process, details of which should be kept and passed onto each successive class teacher. These can be used to gauge necessary reinforcement and the next stages of learning process, thus ensuring continuity and

progression in programmes of work. Pupils' attainment should be recorded termly on Target Tracker to facilitate the monitoring of progress in science across both schools.

Class Teachers should assess for learning (AFL) using a range of methods. Children should be involved in the process of self-improvement, recognising their achievements and acknowledging where they could improve. Activities during, and at the end of, each topic record achievement and celebrate success.

Marking should be supportive and in line with the school's marking policy. Marking should encourage pupils' to think further about the subject, help correct any misconceptions and support development of scientific vocabulary.

Monitoring and Evaluation

The science coordinator is responsible for monitoring Science throughout the school in accordance with the school's evaluation and monitoring schedule, using a variety of means including classroom observation, pupil interviews, work scrutiny, environment and planning scrutiny. Areas for development will be identified and included in the school development plan / subject leader action plan.

Safety

Teachers are required to complete a risk assessment before any hazardous activities are undertaken. The completed risk assessments must be approved by the Head Teacher before the activity takes place.

Safety guidance can be found in the A.S.E. "Be Safe" book and teachers should familiarise themselves with this publication. If the proposed activities, chemicals or equipment are NOT covered by *Be safe!* Then teachers should refer to the relevant CLEAPSS guides. Examples of these guides which can be downloaded from the CLEAPSS website are:

G5p Using Chemicals Safely
L5p *Safe use of Household and Other Chemicals*
L112 *Batteries and Low-voltage Units*
L190 *Studying Microorganisms in Primary Schools*
PS55 *Bringing Pets and Other Animals in to Schools*

Role of the Subject Leader

- To be a role model and demonstrate good practice.

- To work to progress the quality of science provision and its profile within the school, e.g. through awards such as PSQM.
- Keep the written policy document and scheme of work up to date and evaluate the content and method.
- Encourage and support staff in the implementation of the agreed procedures and closely monitor the progression of activities and consistency of approach across both year groups and Key Stages through lesson observation.
- Arrange CPD as appropriate to meet the needs of individuals and the schools.
- Purchase and organise science resources.
- Monitor teachers' planning as part of on-going subject monitoring and evaluation of practice.
- To be aware of national and local developments through reading relevant materials and attending courses as appropriate.
- To submit regular feedback on standards in Science to the SLT.
- Work to achieve equality of opportunity throughout the school.