Christ Church C.E. Moreton Primary School

Science Policy

Written: December 2023
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Our Mission Statement

Our mission is to love all children who are part of our community
helping them develop respect, tolerance, self-confidence and
to become the best they can be.

We will support our children to develop their God given gifts to the full
and encourage a life-long passion for learning
which will successfully lead them into secondary school and beyond.

As a church school at the heart of Moreton community,
our work is underpinned by the Christian values of
friendship, humility, forgiveness, compassion, justice and *service*
which Jesus helps us to achieve.

We are a welcoming, caring and inclusive school
committed to working in partnership with parents, governors,
Christ Church and Chester Diocese Academy Trust.

We strive to provide a rich and varied curriculum
which reflects God's concern for the whole child; promoting spiritual, moral,
cultural, physical and emotional wellbeing
alongside academic excellence and independence.

As a school community, we all work together
to provide the very best for our pupils and families;
firmly believing that:
Together we can do all things through Christ who strengthens us

Our School Vision

***Contributions from parents, pupils, staff and school Governors have determined the priorities for our school vision*. A consistent school vision shared by all based on the following:**

"Love must be completely sincere. Hate what is evil, hold on to what is good. Love one another warmly as Christians, and be eager to show respect for one another. Work hard and do not be lazy. Serve the Lord with a heart full of devotion. Let your hope keep you joyful, be patient in your troubles, and pray at all times." Romans 12:9-12

RATIONALE

At Christ Church CE Primary school, we believe that Science provides significant opportunities for the children to develop spiritually, morally, socially and culturally.

Science feautres in most aspects of modern life in our society. An understanding of its nature and some scientific knowledge is of value to our children as we prepare them for adulthood. Science offers the opportunity to acquire a way of thinking and working which can serve as a basis for understanding the world in which we live, it can be a model for solving problems and can satisfy personal needs like curiosity. Science can draw upon and illuminate a wide range of contexts

The study of Science allows children to be immersed into a world of curiosity. Children are able to ask big questions and gain an understanding about the way in which our world works. Children can gain a sense of awe and wonder and work as a class, in groups or independently to test out their own ideas and questions as they develop as young scientists.

Intent

Science is a core National Curriculum subject and an essential element of a full, rounded education for every child. We teach science because it is a means to understanding the physical, biological and chemical world in which we live, key ideas that are what our children want to learn about. Science lessons will allow our children to develop key knowledge and to hold onto the 'sticky knowledge.' This will allow them to continue to make progress each year. Science will be engaging and brought to life and children will be able to see the relevance of each topic in their own lives. Science work must be practical and investigative. Our aim is to enable our children to think like young scientists as they use and develop the full range of ' working scientifically' skills. Our children will have the opportunity to investigate and take risks with science. Through our skills progression, children will have the required building blocks to be able to apply their knowledge and conduct pupil led investigations On leaving Christ Church, it is our intent that children are able to ask their own questions and think of appropriate ways to investigate and answer these questions. Science will be an important part of their lives and they will have developed the key and necessary skills required as they move onto secondary school.

Implementation

Our long-term science plan ensures coverage of the statutory requirements of the National Curriculum. The 'Working Scientifically' elements are also clearly outlined to ensure good progression throughout the Key Stages. Science work is contextualised wherever possible, built into wider, cross-curricular themes throughout each year band. However, it is important that if not possible, science is taught discreetly to ensure for learning to be built upon. Science will be taught weekly to ensure that children's knowledge and skills is continually built upon. Teachers will have a clear understanding of what children already know and what they will go onto know. Knowledge and vocabulary mats along with the progression document will support teachers with this so children are able to progress. Teachers will be provided with regular CPD to ensure that they are confident in delivering

science and ensuring that the strands of working scientifically are met. The science lead will support this by offering planning, drop in and mentoring sessions throughout the school year.

Impact

Children will be confident in the 7 ways of working scientifically across the science topics. As children progress through each year group, they will become increasingly confident in asking and investigating their own questions. Science will be monitored by the science lead through assessment, observation and pupil discussion. Children will be given sample test questions throughout the year to assess knowledge and to provide them with chances to apply their knowledge to different contexts. Staff meeting time will be allocated to sharing good practice. The Science lead will meet with teaching staff to discuss science in their classroom and to look at next steps.

Staff Roles and Responsibilities:

- to provide the resources of materials*, time and organisation for the children to raise questions and to find answers;
- to encourage situations where children can discuss ideas together both as a class and in small groups;
- to encourage situations where children can discuss their ideas with the teacher either individually, as a class or in a small group;
- to teach techniques of using equipment and the convention of recording by using graphs, tables, charts or symbols appropriate to their ability level and age;
- to provide access to reference material in the classroom and on the internet.
- to ensure that all children (including those with special educational needs and gifted and talented children) have the opportunity to work to their full potential.

* The Science Co-ordinator is responsible for collating and maintaining a set of good quality resources from which staff will be responsible for collecting resources for individual activities.

Methods of Working

Most science work is based on practical activities, working in small groups or as a class. It is expected that there is evidence of children's work in science. Science can be taught in many ways but practical activities can be better suited to group work. A variety of teaching methods should be used. However, some areas of science lend themselves better to a more formal approach where the teacher's input is more important. For example practical

activities for work on "Earth and Space" are very limited. At times teacher demonstration and scientific models may work more effectively or be safer for some practical activities.

EYFS

EYFS work in a cross-curricular way.The children are given the best opportunities to develop effectively their knowledge and understanding of the world through among other things:

- activities based on first-hand experiences that encourage exploration, observation, problem solving, prediction, critical thinking, decision making and discussion;
- an environment with a wide range of activities indoors and outdoors that stimulate children's interest and curiosity;
- adult support in helping children communicate and record orally and in other ways.

Years 1 -6

All science work will be recorded in the children's science exercise book (Y1 – through to Year 6). This would include both substantive and disciplinary knowledge. Examples include; conceptual understanding, scientific reports, explanations, drawings, labelled diagrams, results recorded in charts and tables, bar, line and frequency graphs and the results of research.

In children's work, there should be a clear understanding of what is being taught and learnt: All work is titled with the **'Learning Intention'** – for the context or knowledge content and a second learning intention for **'Working Scientifically.'** (This must show which of the seven strands of working scientifically is being used in the lesson and will also be marked off on the working scientifically tracker at the front of their books.

Working Scientifically:

Working scientifically is the core of the subject; it is essential to develop this throughout the whole school. Most lessons should have a clear focus on ONE of the seven ways of working scientifically. Working scientifically is divided up into 7 areas

- Questioning & Predicting
- Observing
- Classifying
- Testing
- Recording
- Classifying

- Concluding

'Working Scientifically Butterfly' or Working Scientifically Wheel'

The 'Working Scientifically Butterfly' or 'Working Scientifically Wheel' is a document used to track the development of Working Scientifically in each year group. The idea is that as children take part in a lesson, the WS is explicitly taught and focused on and children track this in their books. The front cover of science books will include either a Working Scientifically Butterfly (KS1) or a Working Scientifically Wheel (KS2). Teachers should aim to complete a wide range of working scientifically strands within each topic. Teachers should monitor Working Scientifically coverage to ensure a broad range has been completed and where possible, each strand has been achieved.

Progression in skills:

Each year band must be aware of the expectations in skill progression for their year-band. There is a clear table stating this progression alongside the whole school progression document. It is also important that children have a clear understanding of how their skills and knowledge are progressing year on year and vocabulary sheets used at the start of each unit will allow children to see this and build on prior learning.

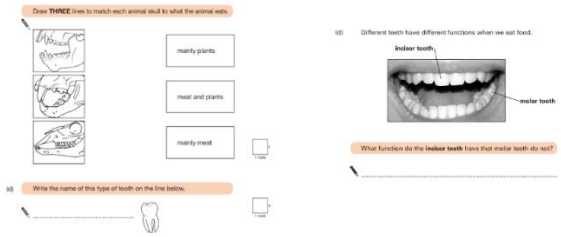
Monitoring and Assessment

The science lead teacher will be able to monitor 'working scientifically' by regular 'book scrutiny' of Science Books. The LI and WS will be clear on each lesson. Monitoring of Working Scientifically will also be made through the 'Working Scientifically Butterfly' or Working Scientifically Wheel'

All marking should be up to date with positive comments and be formative i.e. move learning on by setting targets or asking questions requiring a response by the pupils, in accordance with the school's policy on marking. It is important to address and correct scientific misconceptions.

Formative assessment: Assessment For Learning (AFL) practices can be utilised in the assessment of Science. Observation; listening to pupils; questioning, task setting and problem solving can be incorporated not only into investigative work, but also as tools to assess knowledge and understanding of other areas. Weekly work can be used to assess whether children are at ARE. To support teachers understanding of if children are at ARE the PLAN Assessment tools can be used to support judgements.

Science Snapshots: Science Snapshots are small sample questions taken from a range of resources. These are included to gather children's understanding of the topic (or help retrieve knowledge about past topics). Science Snapshots can also be used to aid retrieval practice at the beginning of lessons.



(Example of science snapshots from Y4)

Summative Assessment:

Children will be assessed at the start and end of each year group using assessment from Headstart Science.
In addition to this, at the start and end of each topic, children will complete a vocabulary assessment to show their understanding at the start and end of learning. Words will be practiced throughout their learning journey in science. The vocabulary comes from the vocabulary progression document that is in line with the progression document.

Plants

Key Vocabulary	Never heard	Heard	Heard and know meaning
petal			
leaf			
stem			
pollen			
peed			
bulb			
insect pollination			
wind pollination			
seed formation			
seed dispersal			
photosynthesis			

Use the space below to draw and label pictures to show what you know about plants or what these words mean to you.

Example of vocabulary sheets (Y4), completed at the start and end of each science topic.

At the end of each academic year, teachers in each year group will report whether children are working at the expected level, above or below. This will allow Teachers in Year 2 and Year 6 to form accurate judgements when reporting end of Key Stage data. Data will be completed though Excel and will be available on the drive for staff to record and the Subject Lead to monitor.

Cross Curricular Learning

EYFS: Most Science work is undertaken in cross-curricular activities. These activities are outlined on the progression document. As learning takes place through play and observation, these areas are shown as a 'best fit'. Understanding our World is covered rather than individual science topics. This is shown on the progression document

Key Stage 1:

Science will be taught as a discreet subject. Wherever possible, links will be made to the overall learning themes for each term. It is important that skills learnt in maths lessons are applied to working scientifically wherever possible. E.g. measurement, time etc. In Art, observational drawing and wherever possible the use of skills learnt in computing.

Key Stage 2:

Again a cross-curricular approach can be seen in the use of scientific subject information in Literacy, Numeracy and ICT, DT, PSHE, Humanities and Art. Internet research for science units may also be carried out, in accordance with the ICT policy on internet access.. Science is an excellent vehicle for developing the use of ICT skills.

SAFETY

Teachers should be aware of safety issues at all times. If in doubt of the safety of an activity, teachers should seek advice from either the science lead teacher or online safety advice such as CLEAPPS. If there is any risk whatsoever to the safety of any child or any member of staff (or any other adult) -a risk assessment **must** be carried out, with the official risk-assessment form filled in. (This form is in Staff Shared Documents on the school server.)

Resources and Equipment

All science resources and are stored in the small storeroom outside Class 13 in the Year 6 annexe. The resource cupboard is audited on the staff drive so teachers have a clear understanding of what is available to use (appendix 5). Resources are sorted into boxes wherever possible and it is important that as a whole staff the resource cupboard is kept organised.

It is the role of the Subject Lead to ensure that resources are maintained and that resources are of high quality to provide the best learning possible for children.

Policy completed by Mrs Emily Quinn
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