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Date approved by the full Governing body-

St Mary's Catholic Primary School

Science policy

School Mission Statement

At St. Mary's Catholic School we:

Live our lives as Jesus taught us
Work hard together to achieve our best
Respect each other and the world around us
Have fun and enjoy learning!

Loved and inspired by Mary… We shine and learn as a family of God.

Introduction

This policy sets out St Mary's aims and strategies for the successful delivery of science. This policy should be read in conjunction with other relevant school policies such as the Equal Opportunities, Curriculum, Teaching & Learning, SEND and Assessment policies.
The policy has been developed by the Science Leader (Mr Taylor) in consultation with the SENCO, Leadership Team and teachers. Guidance from consultants and pupil, parent and staff voice questionnaires have shaped and will continue to help shape this policy. This policy is based on government recommended/statutory programmes of study.
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Our aims:
St Mary's school believes that every child should have the right to a curriculum that champions excellence; supporting children in achieving their very best. We understand the immense value that a high-quality science education can play in enriching pupil's lives. Science at St Mary's school aims to provide our pupils with the understanding, knowledge and skills to question and understand concepts. Our pupils will understand the impact science has at a global, national and personal level.
We aim that-

- Pupils will be competent in planning and carrying out scientific investigations.
- Pupils will be inspired to be scientifically inquisitive with a thirst for learning new concepts.
- Pupils can evaluate evidence and present findings accurately and clearly.

Curriculum

As a school, we have created our own bespoke overview from Reception to Year 6. The overview supports our teachers in delivering fun and engaging lessons which help raise the standards and allow all pupils to achieve their full potential. The overview ensures that we more than adequately meet the national vision for science whilst providing immense flexibility through contextualised and cross curricular learning opportunities. The recently updated overviews include links to key skills

which should be taught in each unit. They are colour coded to show the coverage of the SC1 thinking scientifically objectives.

Early Years

We aim to teach science as an integral part of topic work. We believe the following:

- Pupils must be supported in developing knowledge, skills and understanding hat helps them make sense of the world.
- Pupils should be given many opportunities to encounter creatures, people, plants and objects in the natural environment.

Ks1 Outcomes

Working scientifically

The pupil can, using appropriate scientific language from the national curriculum:

ask their own questions about what they notice
use different types of scientific enquiry to gather and record data, using simple equipment where appropriate, to answer questions: observing changes over time
noticing patterns
grouping and classifying things
carrying out simple comparative tests
finding things out using secondary sources of information
communicate their ideas, what they do and what they find out in a variety of ways

The pupils can:

name and locate parts of the human body, including those related to the senses (year 1), and describe the importance of exercise, a balanced diet and hygiene for humans (year 2)
describe the basic needs of animals for survival and the main changes as young animals, including humans, grow into adults (year 2)

describe the basic needs of plants for survival and the impact of changing these and the main changes as seeds and bulbs grow into mature plants (year 2)
identify whether things are alive, dead or have never lived (year 2)
describe and compare the observable features of animals from a range of groups (year 1)
group animals according to what they eat (year 1), describe how animals get their food from other animals and/or from plants, and use simple food chains to describe these relationships (year 2)
describe seasonal changes (year 1)
name different plants and animals and describe how they are suited to different habitats (year 2)
distinguish objects from materials, describe their properties, identify and group everyday materials (year 1) and compare their suitability for different uses (year 2)

KS2 Outcomes

Working scientifically

The pupil can, using appropriate scientific language from the national curriculum:

describe and evaluate their own and others' scientific ideas related to topics in the national curriculum (including ideas that have changed over time), using evidence from a range of sources
ask their own questions about the scientific phenomena that they are studying, and select the most appropriate ways to answer these questions, recognising and controlling variables where necessary (i.e. observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests, and finding things out using a wide range of secondary sources)
use a range of scientific equipment to take accurate and precise measurements or readings, with repeat readings where appropriate
record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs

draw conclusions, explain and evaluate their methods and findings, communicating these in a variety of ways
raise further questions that could be investigated, based on their data and observations.

The pupil can:

name and describe the functions of the main parts of the digestive (year 4), musculoskeletal (year 3) and circulatory systems (year 6); and describe and compare different reproductive processes and life cycles in animals (year 5)
describe the effects of diet, exercise, drugs and lifestyle on how the body functions (year 6)
name, locate and describe the functions of the main parts of plants, including those involved in reproduction (year 5) and transporting water and nutrients (year 3)
use the observable features of plants, animals and microorganisms to group, classify and identify them into broad groups, using keys or other methods (year 6)
construct and interpret food chains (year 4)
describe the requirements of plants for life and growth (year 3); and explain how environmental changes may have an impact on living things (year 4)
use the basic ideas of inheritance, variation and adaptation to describe how living things have changed over time and evolved (year 6); and describe how fossils are formed (year 3) and provide evidence for evolution (year 6)
group and identify materials (year 5), including rocks (year 3), in different ways according to their properties, based on first-hand observation; and justify the use of different everyday materials for different uses, based on their properties (year 5)

describe the characteristics of different states of matter and group materials on this basis; and describe how materials change state at different temperatures, using this to explain everyday phenomena, including the water cycle (year 4)

identify and describe what happens when dissolving occurs in everyday situations; and describe how to separate mixtures and solutions into their components (year 5)
identify, with reasons, whether changes in materials are reversible or not (year 5)
use the idea that light from light sources, or reflected light, travels in straight lines and enters our eyes to explain how we see objects (year 6), and the formation (year 3), shape (year 6) and size of shadows (year 3)
use the idea that sounds are associated with vibrations, and that they require a medium to travel through, to explain how sounds are made and heard (year 4)
describe the relationship between the pitch of a sound and the features of its source; and between the volume of a sound, the strength of the vibrations and the distance from its source (year 4)
describe the effects of simple forces that involve contact (air and water resistance, friction) (year 5), that act at a distance (magnetic forces, including those between like and unlike magnetic poles) (year 3), and gravity (year 5)
identify simple mechanisms, including levers, gears and pulleys, that increase the effect of a force (year 5)
use simple apparatus to construct and control a series circuit, and describe how the circuit may be affected when changes are made to it; and use recognised symbols to represent simple series circuit diagrams (year 6)
describe the shapes and relative movements of the Sun, Moon, Earth and other planets in the solar system; and explain the apparent movement of the sun across the sky in terms of the Earth's rotation and that this results in day and night (year 5).

Assessment

Formative assessment is undertaken each session in science and pupils are very much encouraged to be involved in the process.

Summative assessment is undertaken in line with the assessment cycle (See Assessment Policy).
Work from a range of classes and abilities is shared in staff meetings and through work scrutiny.
Science assessment and predictions are undertaken termly using the teacher assessment exemplification for science.

Resources:

- All resources are procured with the underling considerations of value: The extent at which the resource impacts on learning and the material cost of this. Protocol details for procurement can be found in the school finance policy.
- A range of resources is available which successfully supports delivering the science curriculum and enables all learners to reach their full potential.
- Resources are suitably maintained and replenished when needed, which is overseen by the Science Leader.

Inclusion

At St Mary's, we aim to enable all children to achieve to their full potential. This includes children of all abilities, social and cultural backgrounds, those with disabilities, EAL speakers and SEN statement and non-statemented.
We place particular emphasis on the flexibility technology brings to allowing pupils to access learning opportunities, particularly pupils with SEN and disabilities. With this in mind, we will ensure additional access to technology is provided throughout the school day and in some cases beyond the school day.

Monitoring, Evaluation and Feedback

Monitoring standards of teaching and learning within science is the primary responsibility of the Science Leader. Details of monitoring and evaluation schedules can be found in the Science Action Plan and School Monitoring Schedule.

Monitoring will be achieved through:

- Work scrutiny.
- Learning walks.
- Observations.
- Pupil voice.
- Teacher voice.
- Reflective teacher feedback.
- Learning environment monitoring.
- Dedicated Computing Leader and Assessment Leader time.

Evaluation and Feedback will be achieved through:

- Dedicated Computing Leader and Assessment Leader time.
- Using recognised standards documentation for end-of-year expectations.
- Written feedback on evaluation of monitoring activities to be provided by the Computing Leader in a timely manner.
- Feedback on whole school areas of development in regard to Computing to be fed back through insets/AOB/staff meetings.

Roles and Responsibilities

Due to the importance of Science which can extend into many different areas of learning.

Head Teacher

- Monitoring the implementation of the Science Policy and its associated policies such as the Safeguarding and SEND Policies.
- Ratifying (in conjunction with the Governing Body) the Science policy.
- Approving CPD and training which is in line with the whole school's strategic plan.
- Approving budget bids and setting them.
- Creating in conjunction with the Science Leader, a long-term vision for Science which includes forecasted expenditure and resources.
- Monitoring the performance of the Science Leader in respect to their specific job role description for Science.

- Ensuring any government legislation is being met.

Science Lead

- Raising the profile of Science.
- Monitoring the standards of Science and feeding back to staff in a timely fashion so they can act on areas for development.
- Ensuring assessment systems are in place for Science.
- Maintaining overall consistency in standards of Science across the school.
- Reporting on Science at specific times of the year to the Governing Body/Head/Staff.
- Auditing the needs of the staff in terms of training/CPD.
- Actively supporting staff with their day-to-day practice.
- Seeking out opportunities to inspire staff in developing their practice through modelling and sharing new ideas, approaches and initiatives.
- Attending training and keeping abreast with the latest educational technology initiatives.
- Using nationally recognised standards to benchmark Science.
- Creating Action Plans for Science and supporting a long-term vision which feeds into the whole school development plan.
- Creating bids for the annual budgets and monitoring budget spend.
- Keeping an up-to-date log of all resources available to staff.
- Reviewing the Science curriculum and developing it as needed.

Health and Safety

- St Mary's takes all necessary measures to ensure both staff and pupils are aware of the importance of health and safety.