Mission Statement

"A Caring Christian Family Where We Grow Together"

SCIENCE POLICY

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Review Date	Signed Head Teacher	Signed Director RCSAT
06/01/2020		
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Persons Responsible for Policy:	Executive Headteacher
Approval Date	06/01/2020
Signed:	Director RCSAT
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1. Introduction

1.1. Science stimulates pupils' natural curiosity about phenomena and events in the world around them, satisfying this curiosity with knowledge. As Science links direct practical experience with ideas, it excites and engages learners at many levels. Scientific method is about developing and evaluating explanations through experimental evidence and modelling; this spurs critical and creative thought.

1.2. This policy outlines the teaching, organisation and management of the Science taught and learnt at the Rural Church Schools Academy Trust (RCSAT).

2. Aims and Purposes

RCSAT's schools teach Science so that children will:

2.1. Retain and develop their natural sense of curiosity about the world around them;

2.2. Develop knowledge and understanding of important scientific ideas, processes and skills, through practical experience;

2.3. Come to understand the nature of scientific method, involving: meticulous observation, the making and testing of hypotheses, the design of fair and controlled experiments, the drawing of meaningful conclusions through critical reasoning and the evaluation of evidence;

2.4. Develop scientific ways of thinking, questioning, testing and applying scientific knowledge to new situations;

2.5. Become effective communicators of scientific ideas so they ca talk about their work, present ideas in different ways, e.g. writing, diagrams, graphs whilst using scientific vocabulary approach to their age;

2.6. Develop a set of attitudes which will promote responsibility and an effective learning climate: working co-operatively with others and listening to their ideas with respect, treating the environment and other living things with consideration, developing safety consciousness, when undertaking practical work.

3. Knowledge and Understanding

Pupils will be encouraged to:

3.1. Be curious about things they observe, and experiment/explore the world about them with all of their senses;

3.2. Use this experience to develop their understanding of key scientific ideas, and make links between different phenomena and experiences;

3.3. Begin to think about models to represent things they cannot directly experience;

3.4. Try to make sense of phenomena, seeking explanations and thinking critically about claims and ideas.

4. Processes and Skills

Through teaching and learning, pupils should:

4.1. Acquire and refine the practical skills needed to investigate questions safely;

4.2. Develop skills of predicting, asking questions, making inferences, concluding and evaluating, based on evidence and understanding, and use these skills in investigative work;

4.3. Practise mathematical skills, e.g. counting, ordering numbers, measuring, drawing and interpreting graphs in real contexts;

4.4. Learn why numerical and mathematical skills are useful and helpful to understanding;

4.5. Have the opportunity to develop theories of understanding through the process of investigation, experimentation and evaluation;

4.6. Have the opportunity to ask questions and use their own methods and skills to find answers, thinking about further questions their findings might raise.

5. Teaching and Learning

5.1. The 2014 National Curriculum shall be followed with planning & progression supported by the use of RCSAT Connected Curriculum.

5.2. Long-term planning**:** Objectives are taught in single year format at Bunbury Aldersey; at St. Oswald's Worleston and Warmingham, they are taught over a rolling programme of two years in Key Stage 1 and Key Stage 2, to ensure coverage and yet avoid repetition.

5.3. Medium-term planning**:** Learning objectives and outcomes to be covered in each unit are identified in the unit plans.

5.4. Short-term planning**:**

5.4.1. The objectives include suggested teaching ideas, but it shall be the responsibility of individual teachers to modify these, structuring lessons and choosing appropriate activities, which shall be differentiated to cater for the breadth in age and ability of their classes.

5.4.2. Teachers shall focus upon development of particular investigative skills each lesson or throughout topics as indicated in medium or short-term planning.

5.4.3. At St. Oswald's and Warmingham, pupils in different year groups are taught the same objectives and teachers shall differentiate to ensure that support and expectations facilitate appropriate progress in developing practical investigative skills, throughout their time in each class.

6. Organisation

6.1. All pupils shall receive the equivalent of two hours of science teaching each week so the children can build on the skills each week.

6.2. Lessons should be spread out over the term. If it improves the learning opportunities, individual objectives may be taught more intensively as a block over a few "topic weeks", at the teachers' discretion.

6.3. Pupils shall be taught within their class groups, experiencing working and learning in a range of smaller groups, according to the objectives and planned activities (e.g. year groups, pairs, friendship groups, mixed age/ability groups, whole class teaching and modelling, etc.)

7. Inclusion and S.E.N.D.

7.1. All pupils, regardless of gender, race, cultural background, ability, physical or sensory disability, shall be included in science lessons.

7.2. The practical nature of science engages pupils on many levels.

7.3. Teacher assessment shall determine the depth to which individuals and groups go during each unit of work and lessons shall be differentiated carefully to provide appropriate levels of challenge.

7.4. Pupils shall work and learn in groups of varying number, gender, age and ability, according to their needs and activity objectives and shall be encouraged to use a variety of means for recording and communicating their work.

8. Foundation Stage

8.1. Reception pupils access Science topics through specially planned practical experiences and play-based activities.

8.2. Observation of pupil's involvement in activities and any work produced, shall provide evidence for pupil's assessment against development bands and Early Learning Goals.

9. Cross-curricular links

9.1. Science contributes to many subjects within the primary curriculum and opportunities shall be sought to draw scientific experience out of a wide range of activities. This allows pupils to begin to use and apply scientific skills and knowledge in real contexts.

9.2. Scientific knowledge underpins many aspects of Maths, D.T., P.E., R.S.H.E. and Geography. Most science objectives provide opportunities for pupils to develop and use mathematical skills, measuring and working with numerical data, relating to real situations.

9.3. Pupils develop language skills through talking about their science work and presenting ideas in different written, verbal and visual ways.

9.4. The nature of science work also encourages pupils to develop responsible attitudes to the world around them and good social integration, through collaborative situations.

10. ICT

10.1. Information Technology is a resource, which is used in science for: locating and researching information (on laptops or I-pads), recording and presenting findings (word-processing, spreadsheets, graphs, databases, simulations). Wherever applicable, ICT is used to enhance science teaching and learning.

11. Assessment

11.1. Pupils' knowledge and understanding shall be assessed at the beginning of each topic, by questioning, discussion, creation of mind maps or concept maps, enabling teachers to identify a starting point and set suitable challenges.

11.2. Teacher assessments shall be an informal part of every lesson, to check pupils understanding, often involving listening, questioning and observing. This evidence may be noted on planning and used to target support and adjust future lessons.

11.3. Teachers may set an assessment activity or test at the end of each unit, to identify those pupils performing above, below and at expected levels, as laid down in the scheme of work. These end of topic assessments shall be drawn upon at the end of the term, when pupils are given overall 'best fit' National Curriculum levels, which shall be recorded on the school data management system, to enable monitoring of progress.

11.4. Teachers should use exit quizzes to help assess the children progress at the end of each concept.

12. Resources

12.1. Each school has built up a bank of science resources and equipment to meet the teaching and learning requirements.

12.2. Where safe to do so, pupils shall be taught to choose, locate and replace resources independently and to use equipment responsibly.

12.3. It shall be the teachers' responsibility to check equipment before starting and report damages, or insufficiencies to the co-ordinator, so replacements/more equipment can be ordered.

12.4. Science equipment is stored in a designated area within each school.

12.5. The teacher shall be responsible for ensuring that all resources are returned to the correct storage area at the end of a topic.

13. Health and Safety

13.1. In their planning of activities, teachers shall anticipate likely safety issues and shall explain the reasons for safety measures and shall discuss implications with the pupils.

13.2. Pupils shall always be encouraged to consider safety for themselves, others, the environment and the resources they use, when undertaking scientific activities.

13.3. Teachers shall have access to the ASE publication 'Be Safe' which is stored centrally and adhere to the school's Health and Safety policy.

14. Subject Management

14.1. The Science Leads shall be responsible for the direction of the subject across RCSAT. The primary aspects of this role are:

14.1.1. To take the lead in policy development and the production and monitoring of a scheme of work designed to ensure progression and continuity in science throughout each school;

14.1.2. To support colleagues in their planning, assessment and implementation of the scheme of work;

14.1.3. To support colleagues in their teaching, by keeping informed about current developments in science and by providing a strategic lead and direction for this subject;

14.1.4. To give the Executive Head teacher and Trustees a termly summary report in which s/he evaluates the strengths and weaknesses in Science and indicates areas for further improvement;

14.1.5. To use any management time beyond normal teacher subject leader expectations to monitor and review evidence of the children's learning across the school via learning walks, book scrutiny, pupil interviews, lesson observation and planning scrutiny;

14.1.6. To take responsibility for the purchase and organisation of resources for science.

15. Review

15.1. This policy shall be reviewed biennially.