Westleigh Methodist Primary School

Science Policy

Written by:	K Rigby
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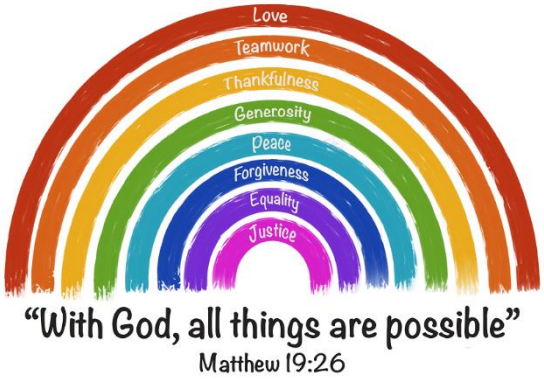
Chairs Signature	

Mission Statement

Our Vision:



We are a loving, inclusive family, rooted in our Christian Values and nurturing ethos. We provide a positive learning environment where all children can achieve their full potential.

Our Mission:
Westleigh Methodist is a family in which everything we do is built upon our Christian values and ethos.

We endeavour to create a place where everyone feels happy, nurtured, safe and valued. We will foster a sense of high-self-esteem, love of learning and enquiring minds. We aim to equip pupils to become good citizens with high aspirations and an understanding of the part they play in our society. Our creative and exciting curriculum will lead to achievement for all and children reaching their full potential and becoming life-long learners.

Safeguarding Statement

At the Westleigh Methodist Primary School we recognise our moral and statutory responsibility to safeguard and promote the welfare of all children.

We work to provide a safe and welcoming environment where children are respected and valued. We are alert to the signs of abuse and neglect and follow our procedures to ensure that children receive effective support, protection and justice.

The procedures contained in the Safeguarding Policy apply to all staff, volunteers and governors

Contents:

Statement of intent

Here at Westleigh Methodist Primary school, we endeavour to provide a Science Curriculum that not only follows National Curriculum guidance, but develops innovative, forward-thinking pupils who are curious about the world around them.

Within our teaching of Science, we ensure our children gain a greater understanding of the knowledge they develop in lessons by providing them with opportunities to explore scientific theories and processes linked to real world experiences. Through this, they begin to understand how Science can be applied by real Scientists and become exposed to potential future career paths.

Children frequently plan and carry out Science experiments which often lead to further investigations. When asked about the subject children say that they love Science because they feel like *real* scientists during their lessons.

Here are some of the scientific questions that children decided to investigate and evaluate this year.

The aims of this policy include:

- Developing pupils' interest in, and enjoyment of, science. By building on children's curiosity, the science curriculum will help to instil a positive attitude towards science in pupils.
- Delivering all the requirements of the national curriculum in relation to science and covering major scientific concepts.
- Ensuring science lessons are purposeful, accurate and imaginative.
- Ensuring pupils have sufficient scientific knowledge to understand both the uses and implications of science, today and in the future. This will also give pupils an appreciation of the changing nature of scientific knowledge.
- The development of pupils' ability to pose questions, investigate these using correct techniques, accurately record their findings using appropriate scientific language and analyse their results.
- Helping pupils develop the skills of prediction, hypothesising, experimentation, investigation, observation, measurement, interpretation and communication.
- Making pupils aware of and alert to links between science and other school subjects, as well as their lives more generally.
- Regularly delivering lessons with a real world context so that pupils can begin to aspire to follow a particular career path.

1. Legal framework

1.1. This policy has due regard to statutory legislation and guidance including, but not limited to, the following:

- DfE (2013) 'Science programmes of study: key stages 1 and 2'
- DfE (2014) 'Statutory framework for the early years foundation stage'
- The Control of Substances Hazardous to Health Regulations (COSHH) 2002
- The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) 2013

2. Roles and responsibilities

2.1. The subject leader is responsible for:

- Preparing policy documents and curriculum plan.
- Reviewing changes to the national curriculum and advising on their implementation.
- Monitoring the learning and teaching of science, providing support for staff where necessary.
- Encouraging staff to provide effective learning opportunities for pupils.
- Helping to develop colleagues' expertise in the subject.
- Organising the deployment of resources and carrying out an annual audit of all science resources.
- Liaising with teachers across all phases.
- Communicating developments in the subject to all teaching staff.
- Leading staff meetings and providing staff members with the appropriate training.
- Organising, providing and monitoring CPD opportunities in the subject.
- Ensuring common standards are met for recording and assessment.
- Advising on the contribution of science to other curriculum areas, including cross-curricular and extra-curricular activities.
- Collating assessment data and setting new priorities for development of science in subsequent years.

2.2. The classroom teacher is responsible for:

- Acting in accordance with Westleigh Methodist Primary School Science Policy, ensuring that lessons are taught in line with the school's Health and Safety Policy at all times.
- Liaising with the science coordinator about key topics, resources and supporting individual pupils.
- Ensuring that all of the relevant statutory content is covered within the school year.
- Monitoring the progress of pupils in their class and reporting this on an annual basis.
- Reporting any concerns regarding the teaching of the subject to the subject leader or a member of the strategic leadership team (SLT).
- Undertaking any training that is necessary in order to effectively teach the subject.

3. The national curriculum

3.1. The national curriculum is followed and provides a full breakdown of the statutory content to be taught within each unit.

3.2. During **nursery** and **reception** classes, in accordance with the 'Statutory framework for the early years foundation stage', focus will be put on the seven areas of learning, with the scientific aspect of pupils' work relating to the objectives set out within the framework. E.g., understanding of the world.

3.3. During **years 1 and 2**, pupils will be taught to:

- Ask simple questions and recognise that they can be answered in different ways.
- Observe closely, using simple equipment.
- Perform simple tests.
- Identify and classify.
- Use their observations and ideas to suggest answers to questions.

3.4. During **years 3 and 4**, pupils will be taught to:

- Ask relevant questions and use different types of scientific enquiries to answer these questions, setting up simple practical enquiries, comparative and fair tests.
- Make systematic and careful observations and, where appropriate, take accurate measurements using standard units and a range of equipment, including thermometers and data loggers.

- Gather, record, present and classify data in a variety of ways to help answer questions.
- Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.
- Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
- Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.
- Identify differences, similarities or changes related to simple scientific ideas and processes.
- Use straightforward scientific evidence to answer questions or to support their findings.

3.5. During **years 5 and 6**, pupils will be taught to:

- Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
- Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
- Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
- Use test results to make predictions to set up further comparative and fair tests.
- Report and present findings from enquiries, including conclusions, causal relationships and explanations of the results and the degree of trust in them. This should be in oral and written forms such as displays and other presentations.
- Identify scientific evidence that has been used to support or refute ideas/arguments.

4. Cross-curricular links

4.1. Wherever possible, the science curriculum will provide opportunities to establish links with other curriculum areas through the use of Cornerstones materials as part of Creative Curriculum.

4.2. **English**

- Pupils are encouraged to use their speaking and listening skills to describe what is happening.
- Pupils' writing skills are developed through recording their planning, what they observe and what they found out.
- Science based texts are sometimes used in Reading comprehension lessons.

4.3. **Mathematics**

- Science will involve a degree of mathematics at all levels.
- Pupils use their knowledge and understanding of measurement and data handling.
- Pupils will record and present data using the appropriate methods for their year group

4.4. **ICT**

- Pupils will use ICT to locate and research information.
- ICT will be used to record findings, using text, data and tables.

4.5. **PSHE**

- Health education is taught as part of the science unit about ourselves, which covers:
  - Health and growing
  - Teeth and eating
  - Moving and growing
  - Keeping healthy
  - Life cycles

4.6. **History**

- Scientific discoveries and the contribution of individuals to science will be studied.

4.7. **Spiritual development**

- Pupils' development will be focussed on the vastness of science and the natural world, encouraging a sense of awe.
- Pupils are encouraged to think about the effect of scientific discoveries on the modern world.
- Current scientific developments and issues will be discussed in the classroom, where appropriate.

5. Teaching and learning

5.1. Pupils will be taught to describe associated processes and key characteristics in common language.

5.2. The use of correct vocabulary will be encouraged throughout all lessons so that children acquire the ability to describe scientific processes in a sophisticated manner

5.3. Lessons will allow for a wide range of scientific enquiry, including the following:

- Questioning, predicting and interpreting
- Pattern seeking

- Practical experiences
- Collaborative work
- Carrying out investigations
- Carrying out time-controlled observations
- Classifying and grouping
- Undertaking comparative and fair testing
- Researching using secondary sources

5.4. Opportunities for outdoor learning will be provided wherever possible.

5.5. Each year group will be encouraged to collaborate with local ambassadors and other key scientific figures

Planning

5.6. Throughout Westleigh Methodist Primary School, science is taught as a core subject; cross-curricular units such as STEM projects should be used where possible to deepen pupil understanding.

5.7. Bespoke knowledge organisers will be used to determine intended end points for each unit, possible experiences and key vocabulary.

5.8. Teachers will use the key learning content in the DfE's 'Science programmes of study: key stages 1 and 2' and the national curriculum as a starting point to ensure full coverage of content.

5.9. Long-term planning will be used to outline the units to be taught within each year group as well as stand-alone investigations where necessary.

5.10. Medium-term plans will identify learning objectives, main learning activities and differentiation and will follow the Trust's Teaching and Learning Model (see Teaching and Learning Policy).

5.11. Medium-term plans will be shared with the subject leader to ensure there is progression between years.

5.12. All lessons will have clear learning objectives, which are shared and reviewed with pupils.

5.13. Where appropriate, pupils will be asked to identify and talk about the way in which they will be working scientifically within their lessons.

6. Assessment and reporting

6.1. Pupils will be assessed and their progression recorded in line with the school's assessment Policy**.**

6.2. Pupils progress and understanding will be assessed throughout and at the end of a topic. This will be through both formative assessment and, where applicable, an endpoint task – in order to gauge whether pupils have achieved the key learning objectives.

6.3. Assessment in science is based upon scientific knowledge and understanding, rather than achievement in English or maths.

6.4. Assessment will be undertaken in various forms, including the following:

- Talking to pupils and asking questions
- Discussing pupils' work with them
- Marking work against the learning objective
- Specific assignments for individual pupils
- Observing practical tasks and activities
- Pupils' self-evaluation of their work

6.5. Formative assessment, which is carried out informally throughout the year, enables teachers to identify pupils' understanding of subjects and informs their immediate lesson planning.

6.6. Parents will be provided with a written report about their child's progress during the summer term every year. These will include information on the pupil's attitude towards science, progress in understanding scientific methods, ability to investigate, and the knowledge levels they have achieved.

6.7. Verbal reports will be provided at parent-teacher interviews during the Autumn and Spring terms.

6.8. Pupils with special educational needs and disabilities (SEND) will be monitored by the special educational needs coordinator. Teachers will ensure lessons are accessible to all learners.

7. Equipment and resources

7.1. Science resources for each unit are stored in the science cupboard in the hall. A comprehensive list of equipment and resources can be found on the back of the cupboard door.

7.2. The subject leader, in liaison with the teachers, is responsible for ensuring that all resources and equipment are sufficiently maintained.

7.3. Equipment will be checked prior to each use and any damages or defects must be reported to the subject leader immediately.

7.4. The subject leader is responsible for maintaining an inventory of resources.

7.5. Staff members must inform the subject leader of any changes regarding science resources, such as broken items or when new resources are required.

7.6. Any equipment or resources which are a cause of concern will be removed from the science cupboard immediately.

7.7. The subject leader will carry out an annual audit of the science resources, reordering any consumables when necessary.

7.8. Class teachers can discuss the need for new resources with the subject leader.

7.9. The subject leader is responsible for negotiating requests from staff members and ensuring resources are bought within the amount allocated in the annual budget.

8. Health and safety

8.1. Staff members will act in accordance with the school's Health and Safety Policy at all times.

8.2. Accidents and near-misses will be reported following the procedure outlined in the school's Accident Reporting Procedure Policy.

8.3. A risk assessment will be carried out by teachers before conducting an experiment or undertaking practical activities.

8.4. All pupils will be shown how to correctly use equipment and will be monitored by staff members whilst using equipment.

8.5. All pupils will be made aware of how they are expected to behave, ensuring that they show respect to other people and the environment.

8.6. Pupils are made aware of the personal safety protocols and equipment needed when using different equipment or carrying out different tasks.

8.7. Staff members will be made aware of the COSHH and RIDDOR regulations as part of their induction training and will act in accordance with these whilst undertaking activities.

8.8. Any 'new' experiments or activities which a teacher has not used in the classroom before will be trialled prior to being performed with pupils.

8.9. At the beginning of any experiment, the teacher will outline the purpose of the experiment to the class, and all hazards and safety precautions will be thoroughly outlined.

9. Equal opportunities

9.1. All pupils will have equal access to the entire science curriculum, including practical experiments.

9.2. Gender, learning ability, physical ability, ethnicity, linguistic ability and/or cultural circumstances will not impede pupils from accessing all science lessons.

9.3. Where it is inappropriate for a pupil to participate in a lesson because of reasons related to any of the factors outlined above, the lessons will be adapted to meet the pupil's needs and alternative arrangements involving extra support will be provided where necessary.

9.4. All efforts will be made to ensure that cultural and gender differences will be positively reflected in all lessons and teaching materials used.

9.5. Westleigh Methodist Primary School aims to provide more academically able pupils with the opportunity to extend their scientific thinking through extension activities such as problem solving, investigative work and research of a scientific nature.

10. Monitoring and review

10.1. This policy will be reviewed by the subject leader every 3 years, in collaboration with the Headteacher.

10.2. The subject leader will monitor teaching and learning in science at Westleigh Methodist Primary School, ensuring that the content of the national curriculum is covered.

Any changes made to this policy will be communicated to all teaching staff.