Science Policy
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1. Introduction

1.1. Science is a core subject in the 2014 National Curriculum *'A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science'* National Curriculum 2014.

1.2. Chadsgrove School provides specialist education to pupils with a range of physical, learning and complex needs. We recognise the importance that science education has to play in our school curriculum. We believe that it is important that children are given the opportunity to explore and understand the world in which they live. We will tailor this education to suit the needs of individual pupils in school, whether it be sensory experiences to support pupils to understand the immediate world around them, real world experiences to support independence or gaining accreditations for future study or work.

2. Purpose

- The purpose of this policy is to describe our practice in the teaching of Science and the principles upon which this is based.

3. Aim(s)

3.1. This policy aims to establish an entitlement for all pupils to a science education and to ensure that our science teaching is fully inclusive to all needs. Our aims in teaching science include the following

- Preparing our children for life in an increasingly scientific and technological world
- Fostering concern about, and active care for, our environment
- Helping our children acquire a growing understanding of scientific ideas
- Helping develop and extend our children's scientific concept of their world.

4. Wider school aims/ethos

4.1. This policy supports the core values of Chadsgrove School in striving to ensure our pupils are:

- safe
- healthy and happy
- able to enjoy learning and achieve success
- able to contribute to their school and society
- prepared for a life in the 21st Century

4.2. In addition it supports the following of Chadsgrove School's aims:

- **Achievements and Standards**
  - To offer a broad, balanced and relevant curriculum that meets the needs of all pupils, statutory requirements and allows for flexible approaches to learning
  - To maximise an individual's potential in mobility, physical abilities, communication skills, sensory capabilities and personal independence.
- **Quality of Provision**
  - To provide a pleasant and stimulating learning environment which promotes effective learning and enables pupils to experience a sense of enjoyment and achievement.

5. Consultation

5.1. This policy was written by Amy Hockey, Science Leader, in consultation with:

- Deb Rattley (Head teacher)
- Governors via a review of this policy

6. Sources and References

6.1. The following sources and references were utilised:

- National Curriculum 2014, Department of Education
- STRATA project 2019: Special Educational Needs in Science, Primary Science Teaching Trust
- EQUALS Science: formal subject-specific Schemes of Work for the National Curriculum 2018

7. Roles and Responsibilities

7.1. The following groups of people will be involved in implementing this policy:

- **Governors** are responsible for reviewing this policy every 2 years, and meeting with the Science Leader where necessary to discuss subject strengths and areas for development and reporting these to the governing body
- **The Head Teacher** is responsible for monitoring the work of the Science Leader, through the Performance Management cycle
- **The Science Leader** is responsible for providing Long Term Planning and monitoring Medium Term Planning within the department. The Science leader also provides a list of resources that are available within school and updates this termly (stored on the Staff Shared Drive) ensuring adequate resources are available to support teaching and learning
- **Class Teachers** are responsible for producing Medium Term Planning and implementing this in their classes. They are also responsible for attending curriculum meetings to review Long Term Plans (LTPs), request resources and highlight any CPD they feel they require.
- **Teaching Assistants** are responsible for supporting pupils' learning, by following the guidance of class teachers.

8. Planning

8.1. Planning is outlined in Long Term Plans (LTPs) for each Key Stage (KS) 1-4 which is divided into a formal and semi-formal pathway. This planning is reviewed as needed (at least annually) by the Science Leader. All KS1 classes follow a Semi-Formal pathway. From KS2 onwards, pupils follow either a Semi-Formal or Formal pathway based on their post-16 goal. Class teachers are responsible for writing Medium Term plans from these LTPs which are differentiated and personalised to the learners in their groups.
For classes following the Pre-Formal curriculum, there is no specific science LTP, rather classes follow the planning in place from the PMLD Leader (see 8.2).

8.2. Pre-Formal - Pupils who are following a pre-formal curriculum experience aspects of Scientific enquiry through their 'Thinking Skills' work. The Barrs Court Curriculum and the Equals Pre-Formal Curriculum are used to inform teachers' planning. Learning Objectives are selected which are most relevant to pupils' personalised outcomes, in the areas of Visual, Auditory, Tactile and Cognitive Development.

8.3. Semi-Formal - The semi-formal curriculum follows National Curriculum topics with a primary focus on real world experiences and how science impacts on their daily lives. In Upper School this will take a particular focus on independence skills. The LTPs are

supported by planning and resources from STRATA and EQUALS which enable appropriate delivery based on pupil's p-levels.

8.4. Formal – The formal curriculum follows the National Curriculum more closely but at an appropriate level to pupil's abilities. These lessons are still supported by planning and resources from STRATA and EQUALS. The focus still remains on practical science but with greater emphasis on scientific enquiry and understanding scientific theory that underpins our real world experiences.

9. Teaching

9.1. The teaching of science should be integrated across the curriculum to support pupils to make links, understand the world around them and gain wider experience of scientific principles. Where possible all classes across school should have access to a Forest School session each week. All semi-formal and formal groups will have a weekly discreet science lesson, focusing specifically on the curriculum outlined in the LTP.

9.2. Pre-Formal - A holistic approach to learning takes place within the PMLD department, so personalised objectives may be taught in a variety of sessions, including Sensory Stories, TACPAC, Messy Food Play/Sensory Cooking and Creative Arts. Learning will also take place in a variety of settings, such as the classroom, Multi Sensory Room, Art Room and in the sensory garden or forest school areas.

9.3. Semi-Formal - The teaching in these groups will be holistic where possible, often focusing around a termly overall 'topic'. Opportunities will be made for pupils to learn through exploring, play and practical activities in a variety of environments across school.

9.4. Formal – The teaching of these classes will focus on scientific knowledge and enquiry and will use a higher level of science equipment such as Bunsen burners, chemicals and specialist equipment requiring the regular use of the Science Room for some lessons. These groups will also use additional resources across school to broaden their knowledge and understanding.

10. Communication

10.1 Communication is integral to all areas of our curriculum at Chadsgrove, and this should be a primary consideration in teachers planning of their science topics. Science lessons should adopt a total communication approach and pupils should have access to personalised communication strategies including Aided Language Displays, use of Signalong (including topic vocabulary) and individual high tech and paper-based communication aids.

Recent research conducted within school has highlighted that pupils participating in enquiry based science activities benefit from developing much wider skills than simply their science skills and /or knowledge. This includes the ability to make choices, work as a member of a team and develop their confidence to communicate with both peers and staff. This highlights the important role that science can have in developing pupils communication skills and wider personal development.

11. Organisation

11.1. Formal and Semi-Formal groups all have a clearly timetabled Science lesson each week. The nature and organisation of these lessons depends upon the age and ability of the pupils. Science is highly differentiated and personalised so that all pupils can access their lessons appropriately. In Upper School, where possible, the pupils following the formal pathway should be 'set' into groups which enable further differentiation of the curriculum to meet their needs to prepare them for accreditation.

12. Training/ CPD

12.1. Internal and external training opportunities are offered to all staff, in order to develop their expertise in teaching and supporting pupils. The impact of this is that pupils will

experience a rich diverse curriculum resulting in improved outcomes. The Senior Leadership Team ensure good practice is disseminated and staff skills enhanced.

13. Equal Opportunities

13.1. Chadsgrove School seeks to create a supportive environment which is free from discrimination and which encourages all pupils and staff to participate fully in the life of the school:

- The school curriculum should be broad, balanced and relevant to all pupils
- Varied teaching styles should be incorporated to suit pupils' learning styles
- Discrimination or stereotyping should be challenged in all areas of the curriculum

14. Health and Safety

14.1. In addition to the general health and safety practices of the school all teachers of Science should promote safe practice at all times and where necessary teachers should complete or refer to specific school risk assessments (e.g. handling guinea pigs, use of the pond etc.).

14.2. With reference to specialist science equipment and chemicals, CLEAPSS student 'hazards' should be referred to by staff and pupils and the staff member working directly with pupils is responsible for ensuring that both they and the pupil is able to use the equipment safely. Any concerns should be raised immediately with the class teacher.

15. Including Parents

15.1. Parents and carers have an important role to play in helping their children learn about science and the world around them. Families will be informed through the curriculum newsletter of science topics each term and where appropriate will be encouraged to complete tasks at home and to talk to their children about their learning.

16. Resources:

16.1. Pupils have access to a wide range of whole school resources which support their learning of science, including the multi-sensory room, forest school, sensory garden, greenhouse, tiny forest area, school library and science room.

16.2. We also have a wide range of science equipment which is stored in the cupboard within the science room. An inventory of these is available on the staff shared drive and is updated termly or as new resources are purchased. The Science Leader is responsible for the overall organisation and maintenance of these resources, but class teachers and teaching assistants are responsible for their day to day care, keeping resources tidy and reporting any damaged or missing resources.

17. Assessment and Moderation

17.1. Teachers will generally use continuous assessment to monitor pupils progress and may also do end of topic assessments, which where appropriate may be summative. Across school pupils are always encouraged to give their own feedback on their learning through personalised methods (e.g. facial expressions, pointing to emotion faces, verbal feedback or using our traffic light recording system).

17.2. **Pre-formal** - Pupils are assessed using Routes for Learning, which enables pupils to follow a range of pathways that focus on both early communication skills and cognitive development. Teachers also use MAPP (Mapping and Assessing Pupil Progress) to record pupils' progress in the areas of Prompting, Fluency, Maintenance and Generalisation. Video and photographic evidence, alongside written recorded evidence, informs future

planning and target setting. As pupils progress through each Routes for Learning Band, they are set more challenging targets which encourage them to develop in their Thinking Skills work. These targets are also set in line with their individual EHCP outcomes in the area of Cognition and Learning.

17.3. **Semi-Formal –** Pupils progress is assessed and recorded using SOLAR which is updated at least termly. Where appropriate pupils may also have electronic learning journeys which are used to record progress being made. In the KS4 class pupils work towards OCR Life and Living Skills units, many of which relate to science in pupils everyday lives.

17.4. **Formal –** Pupils progress is assessed and recorded using SOLAR which is updated at least termly. In the KS4 class progress will be recorded by the completion of the WJEC Pathways 'Science Today' units.

18. Monitoring and evaluation

18.1. Class teachers' Medium Term Plans are monitored by the Science Leader. Evidence of this monitoring is recorded and stored in the Science Curriculum Leader's File.

Termly meetings are held with all teachers delivering science lessons, providing an opportunity for reviewing LTPs, supporting teachers with MTPs and curriculum delivery in addition to ensuring all necessary resources are available. These meetings also provide the Science Leader with the opportunity to monitor and evaluate pupils learning and progress across the school and address any concerns. Where possible each year the Science Leader will observe another science lesson across school to provide support and feedback to teachers, to inform planning and to monitor curriculum delivery.

The Science Leader will work together with the Curriculum Leader to complete work scrutiny for all science groups across school over the year. Annual moderation meetings will also be held for each key stage, again in collaboration with the Curriculum Leader. Work scrutiny and moderation will enable pupil progress to be effectively and consistently recorded across school whilst also giving feedback and support to teaching staff.

19. Linked policies

19.1. The Science policy should be read in conjunction with our policies for:

- Assessment, recording and reporting (Policy No. 43)
- Health & Safety (Policy No. 44)
- Outdoor Learning environment (Policy No 70)
- Marking and feedback policy (Policy No. 98)
- Homework (Policy No. 35)
- AAC (Policy No. 39)

20. Monitoring and Review

20.1. The governor with responsibility for Science is primarily responsible for monitoring the implementation of this policy. This will be through annual discussion with the Subject Leader and consideration of the evidence included in the Subject Leader's portfolio. The governor will report on this to the curriculum committee annually. The work of the Subject Leader will also be subject to review by the headteacher as part of our performance management arrangements.