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| Policy title | : | Science Curriculum Policy |
| Date approved | : | September 2022 |
| Review date* | : | September 2023 |

*Please note that should any further national guidance be issued by external agencies that are relevant to this policy, it will be updated accordingly prior to the review date shown above and re-circulated.

Introduction

At Tollgate Primary School we run a mastery curriculum. This means that all curriculum areas are a progressive model where pupils build on previous learning through their knowledge and application of clear and concise composite goals. Pupils know more and remember more through rehearsal, which leads to a deep and secure knowledge of the key components.

We at Tollgate Primary School believe science education 'provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science is a fundamental part of our lives and is vital to the world's future prosperity, all pupils should be taught essential aspects of the knowledge, methods, processes and applications of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.' (The National Curriculum in England Framework Document (DfE) 2014)

We have a duty to ensure compliance with the revised National Curriculum and with the application of the new programmes of study and attainment targets. We understand that 'the National Curriculum provides pupils with an introduction to the core knowledge that they need to be educated citizens.'

Our well-balanced and cross-curricular programme of study promotes the spiritual, moral, cultural, mental and physical development of pupils. Preparing them for the opportunities, responsibilities and experiences they will face in later life. Through the curriculum and all subjects, we will develop pupils' spoken language, reading and writing and develop pupils' mathematical fluency.

We as a school community have a commitment to promote equality. Therefore, an equality impact assessment has been undertaken and we believe this policy is in line with the Equality Act 2010.

We believe it is essential that this policy clearly identifies and outlines the roles and responsibilities of all those involved in the procedures and arrangements that is connected with this policy.

This policy is to be read in conjunction with the following documents:

- Designing and Timetabling the Primary Curriculum - a practical guide for Key Stage 1 and 2
- National curriculum in England: Science programmes of study
- Statutory framework for the early years foundation stage Setting the standards for learning, development and care for children from birth to five 2021

Aims and objects

- To ensure that all pupils develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.
- To ensure that all pupils develop understanding of the processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.
- To ensure the curriculum is continually revised and updated
- To ensure the curriculum is sequenced, progressive and has clear and concise composite goals.
- To ensure that all pupils are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.
- To promote the teaching of spoken language, reading, writing and mathematical thinking within all subjects.
- To continue an ethos of sharing good practice within the school.
- To work with other schools to share good practice in order to improve this policy.

Roles and Responsibility

The Subject Leader will:

- Lead the development of this policy throughout the school;
- Work closely with the Headteacher, the nominated governor and SENCO;
- Be accountable for standards in Science;

Monitor standards by:

- Auditing the subject area
- Review medium term planning
- Monitoring teachers planning
- Lesson observations
- Scrutinising children's work
- Discussions with pupils
- Learning walks
- Ensure continuity and progression throughout the school;
- Devise a subject improvement plan;
- Provide guidance and support to all staff;
- Provide training for all staff on induction and when the need arises regarding;
- Attend appropriate and relevant INSET;

- Keep up to date with new developments;
- Undertake an annual audit and stock take of resources;
- Purchase new resources when required and in preparation for the new academic year;
- Manage the subject budget effectively; - Undertake risk assessments when required; Devise medium term planning.

The Link Governor will:

- Work closely with the Headteacher and the School Leader for Science;
- Ensure this policy and other linked policies are up to date;
- Ensure that everyone connected with the school is aware of this policy and where to locate it;
- Attend training related to this policy;
- Annually report to the Governing Body on the success and development of this policy

Teachers will:

- Comply with all aspects of this policy;
- Work closely with the School Leader for Science to develop this policy;
- Devise medium and short term planning;
- Develop mathematical fluency, numeracy and mathematical understanding in all subjects;
- Develop pupils' spoken language, reading, writing and vocabulary in all subjects;
- Plan and deliver good to outstanding lessons;
- Plan differentiated lessons which are interactive, engaging and of a good pace
- Have high expectations for all children and will provide work that will challenge and extend them;
 - Assess, record and report on the development, progress and attainment of pupils;
- Achieve high standards;
- Celebrate the success of pupils in lessons
- Implement the school's equalities policy and schemes;
- Report and deal with all incidents of discrimination;
- Attend appropriate training sessions on equality;
- Report any concerns they have on any aspect of the school community

Achieving Mastery

At Tollgate Primary School we run a mastery curriculum. This means that all curriculum areas are designed as a progressive model where pupils build on previous learning through their knowledge and application of clear and concise composite goals. Pupils know more and remember more through rehearsal, which leads to a deep and secure knowledge of the key components. At Tollgate we strive to deliver exceptional lessons where all children are expected to meet the learning objective and achieve mastery. We recognise the fact that there are children of widely different artistic abilities in all classes and we provide suitable pathways for all children to achieve the learning objective. These pathways include:

- Adaption
- Support
- Deepening Understanding
- Lowest 20% Toolkit

Adaption: is the altering or changing of the task so it is accessible for SEND children. The adaption of task should take into consideration the learning objective, stage of scientific learning the child is at and barriers to learning a child may encounter

Support: Support is any resource which may assist a pupil in achieving the learning objective. This may take the form of assistance from an adult (teacher or teacher or assistant), a modelled example of what is needed to succeed in the lesson or any other pictorial or concrete resource that can help the children achieve mastery

Deepening Understanding: Children who have met the objective of the lesson can deepen their understanding of the component or composite goal by completing a task that encourages a child to apply or explain the knowledge and skills they have acquired.

Lowest 20% toolkit: These are strategies aimed at the lowest 20% children in your class. They are strategies to enable children working within the lowest 20% to access and meet the demands of our mastery curriculum. These strategies include; Live Modelling, Support or scaffold, varied questions, setting the 'Bigger Picture', key vocabulary, 1:1 support, 1:2 Support and carefully planned independent learning time.

We plan the topics in Science so that they build upon prior learning. Children of all abilities have the opportunity to develop their skills and knowledge in each unit and, through planned progression built into the scheme of work, we offer them an increasing challenge as they move up the school.

Policy Procedure

The direction set out in this policy will be used to guide the planning, delivery and the teaching of the Science curriculum across the school.

Teaching and Learning Style

We use a variety of teaching and learning styles in order to develop children's knowledge, skills and understanding. The topics we teach have been selected in order to enable meaningful and creative links to be made across curriculum areas and ensure that all areas of the Science Curriculum can be covered. Each half term there is a different topic focus for each year group.

At Tollgate Primary School, we also understand the value of extended learning through educational trips, visits and experts visiting our school.

Curriculum Planning and Organisation

Teachers collaborate on the planning of the subject to ensure parity in provision and to share expertise. Curriculum planning is managed in three phases namely:

Long Term Planning

- Details what is to be taught in each topic over the year
- Provides overall objectives for each year group for the whole year
- Is developed by the School Leader for Science in conjunction with the school's team of middle and senior leaders.

Medium Term Planning

- Organises the subject into half-termly sections
- Is more detailed and the objectives are more specific in nature
- Is developed by the teachers, who respond to the needs of their pupils
- Ensures a balanced distribution of work is undertaken across each term

Short Term Planning

- Details the subject curriculum over the week
- Plans lessons in detail with specific class objectives

Inclusion

We believe that we are an educationally inclusive school as we are concerned about the teaching and learning, achievements, attitudes and well-being of all our pupils. We aim to provide places for all pupils who express a preference to join this school.

We work hard to offer equality of opportunity and diversity to all groups of pupils within school and promote an inclusive educational setting for all irrespective of:

- Gender
- SEND
- Pupil Premium Grant
- LAC

We believe we have a duty to ensure that all children have equal rights to the opportunities offered by education and that all children will be encouraged to fulfil their potential in their academic, physical and creative achievements.

We want to give all children the right to access high quality educational experiences, to take part in a broad and balanced curriculum and to be part of the social life of the school.

We have an even greater obligation to plan and deliver well-structured lessons with appropriate assessment plus ambitious targets for pupils who have low levels of prior attainment or come from disadvantaged backgrounds.

Also, we have a duty to cater for pupils whose first language is not English by planning teaching opportunities to help them develop their English and to gain full access to the National Curriculum.

Special Educational Needs

We want pupils with identified special educational needs to have full access to all subjects of the National Curriculum with teachers planning lessons that have no barriers to pupils achieving and with appropriate targets relating to the subject.

Assessment for Learning

Teachers will:

- Carry out continuous assessment;
- Use formative assessments within lessons matched to the learning objective to adjust their teaching and future planning;
- Make comments in pupil's books related to the learning objective;
- Carry out mid-term assessments to measure progress against key objectives, adjust future planning in line with pupils' curiosity and address misconceptions;
- Carry out termly assessment to assess progress against targets;
- Inform parents and carers of their child's progress and targets
- Implement quizzes for each topic and identify any key knowledge that has not been retained and reteach if necessary.

Contribution of the Subject to other Areas of the Curriculum

Science contributes to many subjects within the primary curriculum and every opportunity is sought to draw scientific experience out of a wide range of activities. This allows children to begin to use and apply scientific skills and knowledge in real contexts.

Resources

The school has a full range of resources to support the teaching of this subject throughout all year groups. Resources are upgraded and replenished when the need arises. An annual stock take and audit is undertaken by the School Leader for Science/Learning Resource Assistant in the summer term in preparation for the next academic year.

Training

Tollgate Primary School will provide opportunities for all employees to have access to the information, instruction, supervision and training required to enable them to discharge their responsibilities.

Equality Impact Assessment

Under the Equality Act 2010 we have a duty not to discriminate against people on the basis of their age, disability, gender, gender identity, pregnancy or maternity, race, religion or belief and sexual orientation. As such, we believe that it is in line with the Equality Act 2010 as it is fair, it does not prioritise or disadvantage any pupil and it helps to promote equality at this school.