



## Worthington Primary School

### Science Policy

Date	Review Date	Subject Leader	Nominated Governor
May 2024	May 2027	Callan Rivers	Barry Brotherton

We believe 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. 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)

Our well-balanced curriculum promotes the spiritual, moral, cultural, cultural, mental and physical development of pupils and prepares them for the opportunities, responsibilities and experiences of later life. We will develop pupils' spoken language, reading and writing in all subjects and will develop pupils' mathematical fluency.

We strive to provide a curriculum that all pupils will find enjoyable with them understanding the relevance of their lessons. This can only be achieved by using the experience, enthusiasm and specialism of individual teachers who provide interesting, relevant, purposeful and differentiated lessons based on real-life experiences, wherever possible, in a structured well-ordered classroom environment.

Annually we undertake a subject evaluation that is based on the following questions:

- How do we design and provide a curriculum that is broad and balanced for all pupils? (Curriculum Intent)
- How do we deliver our curriculum through teaching, assessment and feedback? (Curriculum Implementation)
- How do we assess pupil achievement through external tests/exam results and by our own school data? (Curriculum Impact)

We all have a responsibility to ensure equality permeates in to all aspects of school life and that everyone is treated equally. We want everyone connected with this school to feel safe, secure, valued and of equal worth.

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.



## **Worthington Primary School**

### **Aims**

- 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 nature, 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 that all pupils are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

(The National Curriculum in England Framework Document (DfE) 2014)

- To promote the teaching of numeracy and literacy within all subjects.
- To evaluate the school curriculum by focusing on curriculum intent, implementation and impact.
- To share good practice within the school.
- To work with other schools to share good practice in order to improve this policy.

### **Roles and Responsibility for the Policy**

#### **Role of the Governing Body**

The Governing Body has:

- appointed a member of staff to be responsible for the curriculum leadership of Science;
- delegated powers and responsibilities to the Headteacher to ensure all school personnel and stakeholders are aware of and comply with this policy;
- responsibility for ensuring compliance with the legal requirements of the National Curriculum;
- responsibility for ensuring that the school complies with all equalities legislation;
- responsibility for ensuring funding is in place to support this policy;
- responsibility for ensuring this policy and all linked policies are maintained and updated regularly;
- responsibility for ensuring all policies are made available to parents;
- nominated a link governor to:
  - visit the school regularly;
  - work closely with the Headteacher and the coordinator;
  - ensure this policy and other linked policies are up to date;
  - ensure that everyone connected with the school is aware of this policy;
  - attend training related to this policy;
  - annually report to the Governing Body on the success and development of this policy.
- responsibility for the effective implementation, monitoring and evaluation of this policy.



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### Role of the Headteacher

The Headteacher will:

- work in conjunction with the Senior Leadership Team to ensure all school personnel, pupils and parents are aware of and comply with this policy;
- ensure teachers:
  - 'have good knowledge of the subject(s) and courses they teach;
  - have effective support for those teaching outside their main areas of expertise;
  - present subject matter clearly, promoting appropriate discussion about the subject matter they are teaching;
  - check learners' understanding systematically, identify misconceptions accurately and provide clear, direct feedback and in doing so, they respond and adapt their teaching as necessary, without unnecessarily elaborate or differentiated approaches;
  - design their teaching to help learners to remember in the long term the content they have been taught and to integrate new knowledge into larger concepts;
  - use assessment well in order to help learners embed and use knowledge fluently or to check understanding and inform teaching;
  - create an environment that allows the learner to focus on learning;
  - develop a rigorous approach to the teaching of reading in order to develop learners' confidence and enjoyment in reading;
  - use reading materials at the early stages of learning to read that are closely matched to learners' phonics knowledge'.

(Amended from the 'Education Inspection Framework' (Ofsted 2019))

- work closely with the curriculum leader, subject leaders and the link governor;
- ensure compliance with the legal requirements of the National Curriculum;
- consider disapplying a pupil from all or part of the National Curriculum for a period of time if this will benefit the child;
- encourage parents to take an active role in curriculum development;
- provide leadership and vision in respect of equality;
- provide guidance, support and training to all staff;
- monitor the effectiveness of this policy by:
  - observing teaching and learning
  - planning scrutinies and work trawls
  - discussions with pupils and members of the school council
- annually report to the Governing Body on the success and development of this policy.



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### Role of the Senior Leadership Team

The Senior Leadership Team will:

- provide strategic leadership and direction;
- provide a curriculum that provides pupils with the essential knowledge they need to be educated citizens in democratic Britain;
- coordinate a number of working parties in order to explore ways of improving the curriculum and the way in which we deliver it with a view of ensuring the highest standards of delivery and consistency in pupil's learning and teaching experiences and opportunities throughout the school;
- provide an environment that is fun, stimulating and challenging to all pupils;
- promote an awareness of and respect for a diversity of cultures, values, beliefs and abilities;
- equip children with a range of skills and a desire for lifelong learning;
- ensure appropriate coverage of the curriculum;
- provide support and advice;
- monitor pupil progress;
- ensure sufficient and up to date resources are in place.

### Role of the Subject Leader

The Subject Leader will:

- lead the development of this policy throughout the school;
- work closely with the Headteacher, SLT, the nominated governor and SENCO;
- promote the teaching of numeracy and literacy within all subjects;
- be accountable for standards in this subject area;
- monitor standards by:
  - auditing the subject area
  - review of the scheme of work
  - monitoring teachers planning
  - lesson observations
  - scrutinising children's work
  - discussions with pupils
- work in conjunction with the Headteacher, Senior Leadership Team, Subject Leaders, teaching and support personnel to provide statements on each of the following:

We ...		Evidence
Intent	<ul style="list-style-type: none"><li>▪ have constructed a 'curriculum that is ambitious and designed to give all learners the knowledge and cultural capital they need to succeed in life'</li></ul>	



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	<ul style="list-style-type: none"> <li>provide a curriculum that is 'coherently planned and sequenced towards cumulatively sufficient knowledge and skills for future learning and employment'</li> </ul>	
	<ul style="list-style-type: none"> <li>have the 'same academic, technical or vocational ambitions for almost all learners and we have designed an ambitious curriculum to meet the needs of some learners with high levels of SEND'</li> </ul>	
	<ul style="list-style-type: none"> <li>ensure 'learners study the full curriculum 'specialising' only when necessary'</li> </ul>	
<b>Implementation</b>	<ul style="list-style-type: none"> <li>ensure 'teachers have good knowledge of the subject(s) and courses they teach'</li> </ul>	
	<ul style="list-style-type: none"> <li>provide 'effective support for those teaching outside their main areas of expertise'</li> </ul>	
	<ul style="list-style-type: none"> <li>ensure 'teachers present subject matter clearly, promoting appropriate discussion about the subject matter they are teaching'</li> </ul>	
	<ul style="list-style-type: none"> <li>ensure teachers 'check learners' understanding systematically, identify misconceptions accurately and provide clear, direct feedback'</li> </ul>	
	<ul style="list-style-type: none"> <li>ensure teachers 'respond and adapt their teaching as necessary, without unnecessarily elaborating differentiated approaches</li> </ul>	
	<ul style="list-style-type: none"> <li>ensure 'over the course of study, teaching is designed to help learners to remember in the long term the content they have been and to integrate new knowledge into larger concepts'</li> </ul>	
	<ul style="list-style-type: none"> <li>ensure assessment is used well in order to 'help learners embed and use knowledge fluently or to check understanding and inform teaching'</li> </ul>	
	<ul style="list-style-type: none"> <li>'understand the limitations of assessment and do not use it in a way that creates unnecessary burdens for staff or learners'</li> </ul>	
	<ul style="list-style-type: none"> <li>ensure 'teachers create an environment that allows the learner to focus on learning'</li> </ul>	



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<b>Impact</b>	<ul style="list-style-type: none"> <li>▪ ensure ‘the resources and materials that teachers select reflect the provider’s ambitious intentions for the course of study and clearly support the intent of a coherently planned curriculum, sequenced towards cumulatively sufficient knowledge and skills for future learning and employment’</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ ensure ‘a rigorous approach to the teaching of reading develops learners’ confidence and enjoyment of reading’</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ ensure that ‘at the early stages of learning to read, reading materials are closely matched to learners’ phonics knowledge’</li> </ul>	
<b>Impact</b>	<ul style="list-style-type: none"> <li>▪ ensure ‘learners develop detailed knowledge and skills across the curriculum and, as a result, achieve well’</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ ensure ‘learners are ready for the next stage of education, employment or training’</li> </ul>	

(Quotes taken from the Education Inspection Framework (Ofsted 2019))

- 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;
- review and monitor;
- annually report to the Governing Body on the success and development of this policy.

### **Role of Teachers**

Teachers will:

- comply with all aspects of this policy;
- work closely with the subject leader 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;



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- plan differentiated lessons which are interactive, engaging, of a good pace and have a three-part structure;
- have high expectations for all children and will provide work that will 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.

### **Role of Pupils**

Pupils will:

- be aware of and comply with this policy;
- be encouraged to work in partnership with the school by making decisions and exercising choice in relation to their educational programme;
- listen carefully to all instructions given by the teacher;
- ask for further help if they do not understand;
- participate fully in all lessons;
- participate in discussions concerning progress and attainment;
- treat others, their work and equipment with respect;
- support the school Code of Conduct and guidance necessary to ensure the smooth running of the school;
- liaise with the school council;
- take part in questionnaires and surveys

### **Role of Parents/Carers**

Parents/carers will:

- be aware of and comply with this policy;
- be encouraged to take an active role in the life of the school by attending:
  - parents and open evenings
  - parent-teacher consultations
  - curriculum development workshops
- be encouraged to work in school as volunteers;
- be encouraged to respond to curriculum information newsletter;
- be informed via termly newsletters of their child's topics;
- asked to provide suggestions and ideas for improving this subject;
- be asked to take part periodic surveys conducted by the school on curriculum development;
- be invited to make presentations to pupils on aspects of this subject area;



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- encourage effort and achievement;
- encourage completion of homework and return it to school;
- provide the right conditions for homework to take place;
- expect their child to hand in homework on time;
- join the school in celebrating success of their child's learning.

## **Policy Procedure**

### **Teaching and Learning Style**

We use a variety of teaching and learning styles in order to develop children's knowledge, skills and understanding.

### **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 over the year
- provides teaching guidelines and overall objectives for each year group for the whole year

#### **Medium Term Planning**

- organises the subject into termly or 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
- sets individual learning goals for each pupil

## **Links with ICT**

The use of information and communication technology will promote, enhance and support the teaching of this subject area.

## **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.





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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 recognise that within the school we have more able, gifted and talented children. We believe that:

- more able children demonstrate a higher ability than average for the class and often require differentiated tasks and opportunities to learn through challenges;
- gifted children are those who have the ability to do well in more than one subject;
- talented children demonstrate an innate talent or skill in creative, cultural or sporting fields

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.

### **Differentiation**

Differentiation is best defined as 'the process by which differences between learners are accommodated so that all students in a group have the best possible chance of learning.'  
(Geoff Petty)

The main purpose of differentiation is to challenge and raise standards of learning by ensuring that curriculum objectives are accessible to all our children despite their backgrounds or abilities. We see differentiation as a form of integration and not exclusion.

Differentiation must reflect the learning objective and can be achieved in a variety of ways either by task, by support or by outcome and should be chosen by fitness for purpose.

We want all children to achieve success, therefore we will ensure they are given differentiated tasks that are matched to their level of attainment so that they can demonstrate successfully what they know, understand and can do.

The main feature of effective differentiation is good planning resulting in effective teaching and learning with children making good progress. Also, we expect to see in all classes interested well motivated children responding to challenges, children working productively on task and being aware of their own progression.



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### **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 short-term assessments matched to the teaching objectives to adjust their planning;
- make comments in pupil's books related to the teaching objective;
- carry out medium-term assessments to measure progress against key objectives to adjust planning;
- carry out long-term assessment to assess progress against school and national targets;
- administer national tests and assessment in Y2 and Y6;
- use long-term assessments to help them plan for the next academic year;
- inform parents and carers of their child's progress and targets.

### **Monitoring and Review of the Subject**

Monitoring of standards of children's work and the quality of teaching is the responsibility of the subject coordinator supported by the Headteacher and the SLT.

Standards will be monitored by:

- looking at pupils work
- subject observations
- pupil discussions
- audit of subjects
- scrutiny of planning
- general curriculum discussions

### **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**



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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 subject coordinator in the summer term in preparation for the next academic year.

#### **Training**

We:

- ensure the content of all training is correct, delivered well and engages staff as we believe that the more engaging training is, the better the outcomes that we need to measure;

#### **Monitoring the Implementation and Effectiveness of the Policy**

The practical application of this policy will be reviewed annually or when the need arises by the coordinator, the Headteacher and the nominated governor.

A statement of the policy's effectiveness and the necessary recommendations for improvement will be presented to the Governing Body for further discussion and endorsement.

<b>Headteacher:</b>		<b>Date:</b>	
<b>Chair of Governing Body:</b>		<b>Date:</b>	