



Trimley St Mary  
PRIMARY SCHOOL

## Trimley St Mary Primary School – Science Policy

### National Curriculum Purpose of Study

The National Curriculum states that 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. 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”.

### National Curriculum requirements for subject content at KS1 and KS2:

	Key Stage 1	Key Stage 2
Working scientifically	Across all year groups scientific knowledge and skills should be learned by working scientifically. (This is documented in the Essentials for progress section.)	
Biology	Plants <ul style="list-style-type: none"> <li>• Identify, classify and describe their basic structure.</li> <li>• Observe and describe growth and conditions for growth.</li> </ul> Habitats <ul style="list-style-type: none"> <li>• Look at the suitability of environments and at food chains.</li> </ul> Animals and humans <ul style="list-style-type: none"> <li>• Identify, classify and observe.</li> <li>• Look at growth, basic needs, exercise, food and hygiene.</li> </ul> All living things* <ul style="list-style-type: none"> <li>• Investigate differences.</li> </ul>	Plants <ul style="list-style-type: none"> <li>• Look at the function of parts of flowering plants, requirements of growth, water transportation in plants, life cycles and seed dispersal.</li> </ul> Evolution and inheritance <ul style="list-style-type: none"> <li>• Look at resemblance in offspring.</li> <li>• Look at changes in animals over time.</li> <li>• Look at adaptation to environments.</li> <li>• Look at differences in offspring.</li> <li>• Look at adaptation and evolution.</li> <li>• Look at changes to the human skeleton over time.</li> </ul> Animals and humans <ul style="list-style-type: none"> <li>• Look at nutrition, transportation of water and nutrients in the body, and the muscle and skeleton system of humans and animals.</li> <li>• Look at the digestive system in humans.</li> <li>• Look at teeth.</li> <li>• Look at the human circulatory system.</li> </ul> All living things <ul style="list-style-type: none"> <li>• Identify and name plants and animals</li> <li>• Look at classification keys.</li> <li>• Look at the life cycle of animals and plants.</li> <li>• Look at classification of plants, animals and micro-organisms.</li> <li>• Look at reproduction in plants and animals, and human growth and changes.</li> </ul>

Chemistry	<b>Materials</b> <ul style="list-style-type: none"> <li>Identify, name, describe, classify, compare properties and changes.</li> <li>Look at the practical uses of everyday materials.</li> </ul>	<b>Rocks and fossils</b> <ul style="list-style-type: none"> <li>Compare and group rocks and describe the formation of fossils.</li> </ul> <b>States of matter</b> <ul style="list-style-type: none"> <li>Look at solids, liquids and gases, changes of state, evaporation, condensation and the water cycle.</li> </ul> <b>Materials</b> <ul style="list-style-type: none"> <li>Examine the properties of materials using various tests.</li> <li>Look at solubility and recovering dissolved substances.</li> <li>Separate mixtures.</li> <li>Examine changes to materials that create new materials that are usually not reversible.</li> </ul>
Physics	<b>Light*</b> <ul style="list-style-type: none"> <li>Look at sources and reflections.</li> </ul> <b>Sound*</b> <ul style="list-style-type: none"> <li>Look at sources.</li> </ul> <b>Electricity*</b> <ul style="list-style-type: none"> <li>Look at appliances and circuits.</li> </ul> <b>Forces</b> <ul style="list-style-type: none"> <li>Describe basic movements.</li> </ul> <b>Earth and space</b> <ul style="list-style-type: none"> <li>Observe seasonal changes.</li> </ul>	<b>Light</b> <ul style="list-style-type: none"> <li>Look at sources, seeing, reflections and shadows.</li> <li>Explain how light appears to travel in straight lines and how this affects seeing and shadows.</li> </ul> <b>Sound</b> <ul style="list-style-type: none"> <li>Look at sources, vibration, volume and pitch.</li> </ul> <b>Electricity</b> <ul style="list-style-type: none"> <li>Look at appliances, circuits, lamps, switches, insulators and conductors.</li> <li>Look at circuits, the effect of the voltage in cells and the resistance and conductivity of materials.</li> </ul> <b>Forces and magnets</b> <ul style="list-style-type: none"> <li>Look at contact and distant forces, attraction and repulsion, comparing and grouping materials.</li> <li>Look at poles, attraction and repulsion.</li> <li>Look at the effect of gravity and drag forces.</li> <li>Look at transference of forces in gears, pulleys, levers and springs.</li> </ul> <b>Earth and space</b> <ul style="list-style-type: none"> <li>Look at the movement of the Earth and the Moon</li> <li>Explain day and night</li> </ul>

## CURRICULUM INTENT

### Trimley St Mary Primary School - VISION & VALUES



**OUR VISION** - We provide an environment that allows children to thrive, developing the independence and resilience needed to reach their full potential, while becoming active members of the wider community.

OUR DRIVERS			
At the heart of Trimley St Mary School, lies clearly defined and understood "curriculum drivers" that are the guiding principles that accurately shape the personality of our curriculum. These drivers underpin our curriculum and drive the teaching and learning in our school and therefore the pupil's experiences.			
COMMUNITY	EMOTIONAL WELLBEING	ENQUIRY	POSSIBILITIES
Our school is a friendly and welcoming setting, with a strong sense of belonging, care and support. We recognise parents and the wider community as active partners in the education process and life of the school. By fostering strong community links, and working closely with families, local businesses, and other agencies, we support, motivate, and inspire all children to achieve and be successful in their own right.	As a THRIVE school, we provide a powerful way of working with children to support optimal social and emotional development. The way we interact with our children has a huge impact on the way they think about themselves and their levels of personal resilience. We improve empathy or the ability to understand what another person is thinking or feeling, which improves children's awareness of others and helps them to build positive relationships. We develop happy, healthy confident children who are ready and open to learning.	We recognise the importance of fostering an enquiring mind and love of learning by choosing the right context to engage our children in their learning. Our curriculum uses engaging topics and open-ended questions to promote curiosity, interest, and motivation. Children are encouraged to develop and deepen their understanding as well as drive their learning forward by questioning, investigating and solving problems.	Through our broad and balanced curriculum, we recognise the importance of providing our pupils with knowledge and experience of the wider world. We encourage them to develop self-belief, ambition, and the sense of what it is possible for them to achieve.

<b>OUR GOALS</b>	To ensure that pupils are fully active citizens within the school community.	To ensure all pupils are reflective, analytical and active independent learners.	To ensure that staff subject knowledge and pedagogy builds over time, translating into improvements in the teaching of the curriculum.	To ensure all pupils achieve highly in order to fulfil interests, aspirations for the future and meet their academic, sporting & creative potential.	To ensure that pupils acquire a wide vocabulary, communicate effectively and acquire a knowledge of phonics, giving them the foundations for future learning.
	PERSONAL DEVELOPMENT	BEHAVIOURS & ATTITUDES	LEADERSHIP & MANAGEMENT	QUALITY OF EDUCATION	EARLY YEARS



- To ensure pupils have learned the knowledge and skills set out in the National Curriculum.
- To instil the ability to think independently and raise questions about working scientifically and the knowledge and skills that it brings.
- To give pupils the confidence and competence in the full range of practical skills, taking the initiative in, for example, planning and carrying out scientific investigations.
- To nurture excellent scientific knowledge and understanding which is then demonstrated in written and verbal explanations, solving challenging problems and reporting scientific findings.
- To achieve high levels of originality, imagination or innovation in the application of skills.
- To encourage the ability to undertake practical work in a variety of contexts, including fieldwork.
- A passion for science and its application in past, present and future technologies.

## CURRICULUM IMPLEMENTATION.

### Sequence

Science is a core subject in the National Curriculum. Our school uses the objectives from The National Curriculum as a basis for planning Science alongside the Chris Quigley Essentials Curriculum, which exceeds new national curriculum expectations. Planning is progressive and skills & learning is revisited from Years 1 to 6 to ensure children have deeper understanding of concept. Knowledge, skills and understanding are progressively built upon through each of the areas of experience working Scientifically, Biology, Chemistry

and Physics, gradually extending the breadth of content, increasing the depth of knowledge and understanding and focusing on opportunities to work in an increasingly independent way in order to improve thinking and working scientifically.

### Teaching and Learning

Science is a core subject, and as such it is taught on a weekly basis across all year groups. Long term plans ensure that that children experience key skills in the 4 main areas of Science across all Year Groups. Science teaching within our school maximises the use of a 'creative, cross-curricular' approach, and all Science units are linked to each phase's termly topics, clearly shown on Medium Term plans. This provides a comprehensive guide on scientific key areas and the corresponding progression of skills that need to be taught. We aim to plan for strong cross-curricular links in order to maximise scientific learning opportunities, while ensuring that lessons are meaningful and purposeful for the children. Long and medium term plans are available for parents to view on the school website, and addition to this, parent leaflets are posted termly. The planning process involved in developing this scheme of work has ensured a progression and continuity of learning experiences from Year 1 to Year 6.

### Extra-Curricular Science Opportunities

Children are offered a range of extra-curricular Science opportunities at Trimley St Mary.

These may include:

- Volunteering for the gardening club, run after school by skilled teaching assistants.
- Taking part in a variety of sports clubs to promote the importance of keeping fit, healthy living etc.

### Special Educational Needs

All Science opportunities are tailored to the needs of the children in the class or group. The adults model activities as well as providing different levels of support to those less able, activities are adapted to be inclusive of physical disabilities.

### Spiritual, Moral, Social and Cultural Development

We promote spiritual development by:-

- Demonstrating openness to the fact that some answers cannot be provided by Science.
- Creating opportunities for pupils to ask questions about how living things rely on and contribute to their environment.
- Using tools such as Star Walk which allow pupils to plot the stars in relation to their location and open up questions about the size of the universe and how it might have been formed.

We promote moral development by:-

- Offering pupils the chance to consider the wonder of the natural world and the inventions which have made the world a better place.
- Considering that not all developments have been good because they have caused harm to the environment and to people.
- Encouraging pupils to speculate about how science can be used both for good and evil.

We promote social development by:-

- Using opportunities during Science lessons to explain how to keep other people safe and how they might
- protect a younger or vulnerable young person.
- Exploring the social dimension of scientific advances e.g. environmental concerns, medical advances, energy processes.

We promote cultural development by:-

- Asking questions about the ways in which scientific discoveries from around the world have affected our lives.
- Understanding that there is a rich heritage of scientific discoveries from Hindu, Egyptian and Muslim traditions.

### Health and Safety

It is the responsibility of the Science subject leader to pass on any relevant health and safety information to all staff who teach Science. It is the responsibility of each individual member of staff to ensure that they have read and understood the information passed onto them and act accordingly.

Our curriculum incorporates new online safety guidelines. These are outlined in the Department for Education's new guidance document 'Teaching online safety in school' (DfE, June 2019). We recognise the importance of helping children and young people not only use the internet safely, but also give them opportunities to learn how to behave online. Throughout, the guidance emphasises the importance of teaching that is always age and developmentally appropriate, regardless of the curriculum subject that is being taught. The "Teaching online safety in school" guidance, reminds us that when teaching about various safeguarding topics, staff should be mindful that there may be a child or young person in the lesson who is or has been affected by these harms. We recognise that it is good practice to consult the Designated safeguarding Lead when considering and planning any safeguarding related lessons or activities (including online) as they will be best placed to reflect and advise on any known safeguarding cases, and how to support any pupils who may be especially impacted by a lesson'.

The guidance 'Teaching online safety in school' can be downloaded here:

<https://www.gov.uk/government/publications/teaching-online-safety-in-schools>

## CURRICULUM IMPACT

### Assessment and Recording

Core subjects are assessed as per the school policy (see individual subjects). Teachers update Science data on Insight Tracker regularly, these levels are included in progress reports sent home to parents. Monitoring takes place on a regular basis by the Science subject lead through pupil perceptions, book looks and gathering of photographic evidence. The Science Governor also takes part in pupil perceptions, learning walks, and book scrutinies, to assess the impact and consistency of Science work across the school. Photographic evidence is stored on Seesaw.

### External Verification

After taking part in the 'Talking, Thinking Doing Science' through the Education Endowment Fund, we received positive about the effect implementing the strategies and pedagogy across the school. We are very proud of our Science and welcome visitors to come and see for themselves.

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