

Teaching and learning of: Science			
INTENT	At Hook-with-Warsash C of E Academy we aim to ignite a natural curiosity within our pupils for the world around them, starting in Early-Years and continuing through to Year 6. We strive to provide opportunities which excite children and make the fascinating world of science accessible to all. Through experiences, investigations and teaching, children become ambitious, skillful scientists. Pupils practise enquiry skills: starting with, gathering evidence to describe how things change over time; moving on to adapting experiments to produce more precise conclusions. Our curriculum follows the EYFS framework and the National Curriculum via the Hampshire Science scheme of work. Our curriculum provides substantive knowledge broken down into 'knowledge blocks' which then follow a learning journey. Problem-solving ideas and activities are provided to apply both substantive (knowledge of facts) and disciplinary (working scientifically) knowledge throughout the learning journey.		
	Knowledge	Mastery	Vocabulary
Underpinned by	We follow the units of work from the Hampshire planning model via the National Curriculum. Each unit builds on prior learning so that all pupils are able to secure and embed their scientific knowledge as they move up the school. • Biology – Animals (including humans) • Biology – Plants • Biology – Variation and evolution • Chemistry – materials • Physics – Earth and Space • Physics - Electricity • Physics – Energy Pathways • Physics – Forces There is also progression in disciplinary skills (working scientifically) which are applied throughout each unit.	We aim to develop a mastery approach to scientific through acquiring a deep, long-term, secure and adaptable understanding of the subject. There are certain principles and characteristics which characterise this approach. They are: • An expectation that all pupils are capable of achieving high standards in science. Challenge is through extending pupil's thinking and ensuring tasks are accessible for all. • Pupils are able to confidently discuss, and return to, substantive knowledge. Using this knowledge and understanding pupils can respond in more complex terms and make links between facts learned. • Pupils are able to practise disciplinary skills (working scientifically) in multiple contexts and apply enquiry skills to all units.	Pupils will become confident in understanding and using the correct scientific terminology. We achieve this through: • Modelling key vocabulary/scientific terminology through teaching and encouraging pupils to practice through oral and written work. • Vocabulary cards are available on the system and correspond with each knowledge block. • All classroom' book corners/mini libraries are well equipped with books, including non-fiction, to encourage reading in science.

IMPLEMENTATION	In our planning, each unit is planned and taught in a way that is best suited to the year groups' current topic or subject. Within each unit, the substantive knowledge has been broken into knowledge blocks. The knowledge blocks follow one of three topic type- building block, multiple context or big model topic. The Three Types of 'Learning Journey': • The building block topic: Ideas build upon each other sequentially making an increasingly sophisticated model. • The big model topic: An important model is shared at the beginning, but detail and complexity are added through the topic. • The multiple context topic: An important overarching concept or idea is taught at the beginning and then applied in a number of different contexts. Each knowledge block has a range of suggested problem-solving activities when planning lessons and/or investigations and experiments for the unit. These are just some ideas in which the specific powerful knowledge can be taught/ deepened and/or extended, thus allowing our teachers to plan and teach lessons to ignite curiosity and plan experiences. Alongside the problem-solving ideas and activities, the disciplinary skills needing to be instructed or revisited have been identified. This is to ensure focus and consistency of teaching disciplinary knowledge (working scientifically) as well as substantive knowledge (knowledge of facts), or 'key ideas'. Our teaching approach ensures substantive and disciplinary knowledge is taught through enquiry based lessons and investigations, giving the pupils the appropriate experiences to support their learning and understanding. Also, where possible, science lessons have a cross curricular approach. For example in Year 3 children revisit disciplinary knowledge to plan a states of matter investigation (the temperature of Willy Wonka's chocolate river) linked to their writing topic; Year 6 children use their knowledge of evolution to inform (and deepen) their discussions in RE: Evolution and Creation. CPD is via Hampshire training and staff meeting time dedicated to science. There is also guidance given after pupil voice interviews, feedback/discussions from teaching staff and subject monitoring.		
	SEND / Disadvantaged The Science curriculum is adapted to meet the needs and styles of all learners. A variety of teaching and learning strategies are used to ensure that all pupils can achieve, including: • Partner and/or group work, • Breaking down the steps involved • Vocabulary cards, • Instruction support sheets, • Task design - activities are adapted to make accessible for all children, • Whole class, group and individual discussion carried out to assess understanding, • Use of technology to record as an alternative,	EYFS The EYFS long term plan follows the EYFS Framework. We recognise that this is fundamental in order to develop curiosity and welcome questions and ideas which will aid future knowledge. Therefore, activities are designed to support the development and passion of the world around them. Children participate in experiences, such as environmental weeks, to do just that.	Feedback, Questioning and Discussion Questioning and discussion play a vital role in our science curriculum. So much so that some learning journeys are begun with discussing a 'Big Question'. Pupils are encouraged to ask and discuss questions to think deeply about the substantive knowledge (learning journey) they are exploring, yet lending itself to an enquiry based way of learning. An integral part of a science lesson is the discussion around what children already know (assessment) and any misconceptions can be addressed during these discussions. Feedback is given at the point of teaching and may be written or verbal and in a manner which moves learning forward or helps to embed learning and aid retrieval.

	Risk assessments when applicable.		
IMPACT	When children leave Hook-with-Warsash C of E Academy, they will have discussed, challenged and developed the scientific knowledge and skills to help them explore and understand the world around them. Pupils' knowledge and skills will have developed progressively as they move through the school, not only to enable them to meet the requirements of the National Curriculum but to inspire them to develop a curiosity and a deeper understanding about the world they live in. Pupils will be excited and enthused about sharing their learning with others.		
	Pupil Voice	Evidence in knowledge and skills	Breadth and depth
	Pupils will be given opportunities to feedback on their experiences in science through discussions and reflections on their work. Success is judged on whether pupils are positive, confident and actively engaged in science and able to recall prior learning and ask questions to demonstrate deep thinking.	Progress is clear throughout the year as children build on learning from previous year groups. For example, numerous year groups will study the topic, 'Plants' but the knowledge blocks (substantive) within each year group are broadened. Disciplinary (working scientifically) knowledge also progresses and opportunities are planned by teachers for children to practise and demonstrate these skills. Assessment takes place throughout a learning journey and addresses misconceptions. Teachers record assessment at the end of each topic. The assessment carried out looks how the topic went overall, as well as looking at WTS, EXS and GDS pupil attainment.	The curriculum is designed to broaden knowledge, as well as revisiting previous learning. A deeper understanding is shown when pupils are able to respond in more complex terms and make links between the knowledge in previous, and current learning journeys. They will also be able to apply disciplinary knowledge (working scientifically) to discuss, plan, carry out and evaluate investigations.