St Michael and All Angels Catholic Primary School

Science

Curriculum Rationale

Intent	The curriculum at St Michael and All Angels Catholic Primary School promotes curiosity and a love and thirst for learning. It is ambitious and empowers our children to Believe, Achieve and Belong. At St Michael and All Angels, we are scientists! Kapow's Primary Science curriculum aims to develop a sense of excitement and curiosity about natural phenomena and an understanding of how the scientific community contributes to the past, present and future. The curriculum aims for pupils to develop a complex knowledge of biology, chemistry and physics but also adopt a broad range of skills in working scientifically and beyond. The scheme of work is inclusive and meaningful so all pupils may experience the joy of science and make associations between their science learning and their lives outside the classroom. Our curriculum aims to encourage critical thinking and empower pupils to question the hows and whys of the world around them. The curriculum encourages: ● A strong focus on developing knowledge alongside scientific skills across biology, chemistry and physics. ● Curiosity and excitement about familiar and unknown observations. ● Challenging misconceptions and demystifying truths. ● Continuous progression by building on practical and investigative skills across all units. ● Critical thinking, with the ability to ask perceptive questions and explain and analyse evidence. ● Development of scientific literacy using wide-

	ranging, specialist vocabulary
Implementation	In the Early Years it is the first opportunity to see how a child interacts with their environment and how the environment influences them. Staff follow the Early Years Foundation Stage (EYFS) Statutory Framework which aims to guide children, to make sense of their physical world and their community by allowing them to explore, observe and find out about people, places, technology and the environment – this is the first step of becoming a scientist. Our Science curriculum is a spiral curriculum, with essential knowledge and skills revisited with increasing complexity, allowing pupils to revise and build on their previous learning. A range of engaging recall activities promotes frequent pupil reflection on prior learning, ensuring new learning is approached with confidence. Each unit is based on one of the key science disciplines: biology, chemistry and physics. The National curriculum content has been grouped into six key areas of science to show progression throughout the school: Plants. Animals, including humans. Living things and habitats. Materials. Energy. Forces, Earth and space. The working scientifically skills are integrated with conceptual understanding rather than taught discretely to provide frequent but relevant opportunities for developing scientific enquiry skills.

	Accessibility and Equal Opportunities Please refer to the school's Equal Opportunities Policy, Accessibility Policy and Special Educational Needs Policy for further information. All pupils have equal rights to access learning opportunities across the whole curriculum irrespective of ethnicity, religion, gender, disability or social circumstances. A wide variety of strategies can be used to ensure that teaching meets the needs of different groups of pupils. These include: • Differentiating lessons (through use of resources, tasks, level of support, outcome); • Using a range of teaching styles to match the range of learning styles represented in a typical class; • Ensuring the classroom environment is safe and secure and accessible for all.
	Each unit has a unit quiz and a knowledge and skills catcher, which can be used at the beginning or end of the unit to provide a summative assessment. Opportunities for pupils to communicate using scientific vocabulary will also form part of the assessment process in each unit. The expected impact of is that pupils will: ● Develop early scientific thinking skills through hands-on exploration and sensory experiences in EYFS (Reception). ● Develop a body of foundational knowledge for the biology topics in the National curriculum: Plants; Animals, including humans; Living things and their habitats; and Evolution and inheritance.

Impact	● Develop a body of foundational knowledge for the chemistry topics in the National curriculum: Everyday materials; Uses of everyday materials; Properties and changes of materials; States of matter; and Rocks. ● Develop a body of foundational knowledge for the physics topics in the National curriculum: Seasonal changes; Forces and magnets; Sound; Light; Electricity; and Earth and space. ● Evaluate and identify the methods that 'real world' scientists use to develop and answer scientific questions. ● Identify and use equipment effectively to accurately gather, measure and record data. ● Be able to display and convey data in a variety of ways, including graphs. ● Analyse data to identify, classify, group and find patterns. ● Use evidence to formulate explanations and conclusions. ● Demonstrate scientific literacy through presenting concepts and communicating ideas using scientific vocabulary. ● Understand the importance of resilience and a growth mindset, particularly in reference to scientific enquiry. ● Meet the end of key stage expectations outlined in the National curriculum for science. After implementing our curriculum, pupils should leave school equipped with the requisite skills and knowledge to succeed in science at Key stage 3. They will have the necessary tools to confidently and meaningfully question and explore the world around them and critically and analytically experience and observe phenomena. Pupils will understand the significance and impact of science on society.

	Monitoring The Subject Leader will monitor progress according to the monitoring timetable. Subject leaders are expected to monitor in the following way over the course of the academic year: • Learning Walks; • Co-coaching; • Pupil Voice; • Book scrutiny including learning logs; • Planning scrutiny; • Lesson drop ins Adequate notice should be given and provide a clear focus for any activity that is due to be undertaken. The outcomes of any monitoring activity is fedback to the SLT and staff through the relevant meetings. Progress should be clear over the course of each topic. We believe that our children will: • have a love of science and an inquisitive mind to continue to ask questions about the world they live in; • understand and use scientific vocabulary as a tool for explaining their ideas and reasoning about the world; • have a good base of disciplinary skills in order to carry out scientific enquiries; • be clear in their substantive knowledge and able to make links to real life contexts; • have the confidence to have no limits to what their ambitions are if they are considering a future in the field of science; At St Michael and All Angels Catholic Primary School our children are scientists who can Believe-Achieve-Belong in the local and global world now and in the future.