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| Science Intention St Ignatius*‘ Equipped with his five senses, man explores the universe around him and calls the adventure science’ – Edwin Powell Hubble* | Why are there still so few black scientists in the UK? | Science | The  Guardian |
| Teachers giving clear explanations that build on what pupils already know and explicitly focus pupils’ attention on the content being learned. – OFSTED 2021Ensuring that pupils remember the content that has been taught to them over the long term. It says this is important “because building domain-specific knowledge leads to expertise”. – OFSTED 2021 |
| **Intent**Science provides pupils with the chance to develop an understanding and curiosity about the world around them while they acquire the skills and knowledge to think scientifically. We aim to introduce pupils to the uses and possibilities of science in today’s world and for the future. Throughout our school, science is embedded in each year group. Pupils have the opportunity to use their enquiry skills and develop them as they progress through the school. Combined with specialist vocabulary, the pupils are enabled to communicate their scientific ideas effectively. Pupils are encouraged to question the world around them and develop and use a range of skills including observation, pattern seeking, researching, planning and investigating. This allows them to become independent learners who have the skills to explore possible answers to their science-based questions.The scheme we currently use is Developing Experts and it is based around a knowledge-rich curriculum. We ensure that knowledge is learnt and retained throughout our programmes of study.  In each lesson, pupils are given key facts and knowledge through our storytelling approach to learning.  Further to this, each lesson offers 5 key words and meanings to learn; vocabulary which is then repeated throughout the lesson and quizzed on at the end.All our lessons contain a balance of the different ‘Working Scientifically Skills’ and ‘Scientific Enquiry’ types, so that children practice a broad range of skills throughout the curriculum.Children can access the learnt materials from home, and if they respond incorrectly to a quiz question, the platform takes them back in the presentation to the point that key piece of knowledge can be revisited in context. We are currently implementing a knowledge organiser and knowledge test for each and every unit of work, providing summative feedback for teachers and pupils.**Implementation**Teachers create a positive attitude to science learning within their classrooms and reinforce an expectation that all pupils are capable of achieving high standards in science. Our whole school approach to the teaching and learning of science involves the following;● Science will be taught in planned blocks to have a project-based approach. This is a strategy to enable the achievement of a greater depth of knowledge.● Existing knowledge is checked at the beginning of each topic using the KWL strategy (What I know, What I would like to Know and What I have Learned). This ensures that teaching is informed by the children’s starting points and that it takes account of pupil voice, incorporating children’s interests. These are again revisited at the end of each unit to show the progress made.● Problem solving opportunities are used often to allow children to apply their knowledge, and find out answers for themselves. Children are encouraged to ask their own questions and be given opportunities to use their scientific skills and research to discover the answers. This curiosity is celebrated within the classroom. ● We build upon the knowledge and skill development of the previous years. As the children’s knowledge and understanding increases, they become more proficient in selecting, using scientific equipment, collating and interpreting results, they become increasingly confident in their growing ability to come to conclusions based on real evidence.● Working Scientifically skills are embedded into lessons to ensure that skills are systematically developed throughout the children’s school career and new vocabulary and challenging concepts are introduced through direct teaching. This is developed through the years, in-keeping with the topics.● Teachers demonstrate how to use scientific equipment, and the various Working Scientifically skills in order to embed scientific understanding. Teachers find opportunities to develop children’s understanding of their surroundings by accessing outdoor learning.● Practical activities are only carried out when children have understood the content in lessons and can explain how these activities link with their knowledge. These are only done where it is relevant.● Children are offered a wide range of extra-curricular activities, visits and trips and to complement the curriculum. These are purposeful and link with the knowledge being taught in class/year groups.● Regular events, such as Science Week or project days, such as Nature Day, allow all pupils to take time off-timetable, to provide broader provision and the acquisition and application of knowledge and skills. These will often include student presentations of work or knowledge learned.● At the end of each topic, key knowledge is reviewed by the children and rigorously checked by the teacher and consolidated as necessary. End of unit tests can be accessed to ensure this is done well. **Impact**This approach results in a fun, engaging, high-quality science education, that provides children with the foundations and knowledge for understanding the world. Our commitment to engage with the local environment ensures that children learn through first hand experiences of the world around them. Through various trips and interactions, children have the understanding that science has changed our lives and that it is vital to the world’s future prosperity. Children learn the possibilities for careers in science through the various units taught through developing experts. They will learn about positive role models within the field of science and this exposure will show them a range of different scientists from various backgrounds, and all children will feel they are scientists and capable of achieving. |