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| **The 3 I’s** | **Science** | |
| **INTENT**  **(What we want pupils to learn and why – curriculum design – how and why it is sequenced the way it is)** | **Aims: what big ideas do we want OUR pupils to come out with from this subject.** | *Our aim is to deliver a science curriculum that fosters a love of learning and encourages curiosity, exploration, and independent thinking. We believe that children learn best through inquiry and hands-on experiences, which is why our lessons focus on practical, first-hand activities that inspire and engage. By offering experiments, outdoor education, and investigations, we help pupils make real-world connections and see the relevance of science in their lives.* |
| **Organisation of curriculum and sequencing:** | * *Grammarsaurus Scheme – The Grammarsaurus science scheme offers high-quality, in-depth lessons paired with structured activity sheets to assess pupils' understanding.* * *Working in cycles - Over the course of a 2-year cycle, 10 topics cover the content of the National curriculum as seen below.*  |  |  | | --- | --- | | *Cycle A* | *Cycle B* | | *KS1*  *Everyday material (Y1)*  *Plants (Y1)*  *Everyday material (Y2)*  *Plants (Y2)*  *Seasonal changes*  *LKS2*  *Animals including Humans (Y3)*  *Animals including Humans (Y4)*  *States of matter*  *Living things and their habitats*  *Sound*  *UKS2*  *Animals including Humans (Y5)*  *Evolution and inheritance*  *Animals including Humans (Y6)*  *Light*  *Electricity* | *KS1*  *Animals including Humans (Y1)*  *Living things and their habitats*  *Animals including Humans (Y2)*  *Seasons*  *LKS2*  *Rocks*  *Electricity*  *Forces and magnets*  *Plants*  *Light*  *UKS2*  *Forces and magnets*  *Living things and their habitats (Y5)*  *Earth and Space*  *Materials*  *Living things and their habitats (Y6* |  * *Declarative Knowledge – Pupils develop a deep understanding of scientific concepts, knowing what something is and how it fits into the broader context of science.* * *Procedural Knowledge – Explicit planning in each unit ensures that pupils not only know what to do but also how to carry out scientific processes and experiments effectively.* * *Lesson Structure – Science lessons are delivered weekly in focused, one-hour sessions, providing consistent opportunities for engagement and progress.* * *Progression Maps – Detailed learning progression maps, key vocabulary, and assessment questions are available through Grammarsaurus, ensuring structured development across year groups.* * *Flexible Activities – Teachers have the flexibility to adapt and differentiate activities to meet the needs of all learners while maintaining the lesson's core objectives and success criteria for consistency in learning outcomes.* |
| **IMPLEMENTATION**  **(How the curriculum - inc. cultural capital - is taught and assessed so our children develop knowledge, skills, understanding & SHINE)** | **Teaching & adapting to learners needs:** | * *Differentiated Tasks – Each lesson includes tiered activities designed to cater to different ability levels, ensuring all pupils are appropriately challenged and supported. Grammarsaurus provided acitivities are sometimes adapted further to support SEN children.* * *SEN Support – Tailored provisions are in place to ensure children with special educational needs receive the additional support required for understanding and engagement.* * *Varied Questioning – A wide range of questioning techniques is used throughout lessons to continuously check for understanding and encourage deeper thinking.* * *Modelling – Teachers provide clear demonstrations and modelling of answers enabling pupils to apply their learning with confidence. Investigations are also modelled to ensure safe practises are being followed.* * *Diverse Resources – A variety of resources are utilised across topics to enhance both investigative learning and knowledge retrieval, ensuring a rich and interactive learning experience.* * *Retrieval Practices – A range of retrieval strategies are embedded within lessons to help pupils recall and consolidate prior knowledge.* * *Assessments – Assessments include a variety of question types, designed to measure pupils’ understanding and depth of scientific knowledge effectively.* * *Targeted Adult Support – Adult support is distributed strategically throughout lessons to ensure all pupils receive the guidance they need, particularly during independent and group tasks.* |
| **What, How and When we assess learning** | * *Recap of Prior Learning – Lessons begin with questions that revisit previous learning, helping to reinforce understanding and create links between concepts.* * *Low-Stakes Quizzes – Each lesson concludes with low-stakes quizzes to assess knowledge in a stress-free environment, promoting retention without pressure.* * *End-of-Unit Assessments – Unit front covers are used to gauge progress, with clear assessment questions provided to evaluate knowledge and understanding at the end of each topic.* * *Vocabulary Mastery – Key vocabulary is highlighted on front cover sheets, ensuring that pupils have a strong grasp of essential scientific terms, which is also assessed during lessons.* |
| **How and when we make links to other subjects:** | * *Cross-Curricular – The science curriculum is intentionally aligned with History and Geography topics, following the Grammarsaurus curriculum map to create meaningful connections between subjects and deepen pupils' understanding.* * *Data Handling – The use of tables, graphs, and charts in science lessons is directly connected to the Maths curriculum, reinforcing pupils' ability to present and interpret data effectively.* * *Instructional Reading and Writing – Instruction reading and report writing are embedded within the English curriculum, equipping pupils with the skills needed to present evidence clearly when writing up scientific investigations. The ‘Burger Paragraph’ model is utilised in science to structure their writing logically and coherently.* |
| **Cultural capital – visit / visitors / clubs** | * *It is expected that 1 visit/visitor should be made per Key stage per year.* * *1 STEM/Science club to be provided for each key stage per year.*   *Regular visits*  *KS1*   * *Skegness aquarium (Living things and their habitats)*   *LKS2*   * *The Deep (Living things and their habitats)* * *Cregswell kraggs (Rocks)*   *UKS2*   * *National space museum (Earth and Space)* |
| **IMPACT**  **(Key impact and how we will measure and monitor)** | **Monitoring and evaluating outcomes** | *By the end of KS1 the children will be proficient in:*   * *asking simple questions and recognise that they can be answered in di­fferent ways* * *observing closely* * *performing simple tests, using simple equipment* * *identifying and classifying* * *using their observations and ideas to suggest answers to questions* * *gathering and record data to help in answering questions.*   *By the end of LKS2 the children will be proficient in:*   * *Setting up simple practical enquiries, comparative and fair tests* * *Reporting on findings from enquiries, including oral and written explanations, displays or presentations of* * *results and conclusions* * *Using results to draw simple conclusions, make predictions for new values, suggest improvements and* * *raise further questions* * *Making systematic and careful observations and, where appropriate, taking accurate measurements* * *Using standard units, using a range of equipment, including thermometers and data loggers*   *By the end of KS2 the children will be proficient in:*   * *Designing and planning a range of scientific investigations to explore key questions.* * *Identifying, controlling, and manipulating variables to ensure fair and accurate testing.* * *Accurately measuring and collecting data using a variety of scientific tools and equipment.* * *Organising, recording, and presenting data effectively using different formats such as charts, graphs, and tables.* * *Formulating logical predictions based on prior knowledge and evidence.* * *Analysing and evaluating scientific evidence to draw conclusions and support findings.*   *We will monitor this via:*   * *Pupil Voice – Pupil voice feedback is gathered twice a year, once in the Spring term and again in the Summer term, providing valuable insights into students’ experiences and learning in science.* * *Book Looks – Book looks are conducted biannually, in both the Spring and Summer terms, to monitor progress and ensure high-quality work is being produced across the curriculum.* * *Assessment Data – OTRACK is used to track age-related progress and attainment for KS1 pupils, offering a clear picture of how students are performing relative to expectations.* * *Staff Surveys – Staff surveys are conducted twice a year, once in spring and again in summer to highlight strengths and positive aspects of the curriculum while identifying areas for development and addressing any weaknesses.* |