| **Rationale for Science** |
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| Science at primary level helps develop a sense of excitement and curiosity about natural phenomena. It involves understanding and growing knowledge and how it can be used to explain what is occurring, predict how things will behave, and analyse causes . Through science, we use different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. In Science children will learn to explore, talk about, test and develop ideas. Throughout the school children will build on scientific knowledge and skill and work towards drawing conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings. |
| **Knowledge**  Knowledge in Science refers to the understanding and interpretation of key concepts taught within different scientific contexts. This includes the understanding and deployment of key scientific vocabulary.  The key concepts consist of:  Year 1:   * working scientifically * plants * animals including humans * everyday materials * seasonal change   Year 2:   * working scientifically * living things and their habitats * plants * animals including humans * uses of everyday materials   year 3:   * working scientifically * plants * animals including humans * roakcs * light * forces and magnets   Year 4:   * working scientifically * living things and their habitats * animals including humans * states of matter * sounds * electricity   Year 5:   * working scientifically * living things and their habitats * animals including humans * properties and changes of material * earth and space * forces   Year 6:   * working scientifically * living things and their habitats * animals including humans * evolution and inheritance * light * electricity |
| **Substantive knowledge**  In science, this is the knowledge and understanding of the key concepts taught  within scientific contexts including the key vocabulary. The substantive knowledge is progressive through conceptual development from Reception to year 6. alongside substantive knowledge ‘working scientifically’ should be taught through and clearly related to knowledge and skill of key concepts.  **Disciplinary knowledge**  In science children will need scientific knowledge and skill to collect, understand and evaluate scientific evidence – scientific method. To understand and evaluate the impact of variables and investigate and interpret results and findings. |
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| **Working scientifically**  ‘Working scientifically’ specifies the understanding of the nature, processes and methods of science for each year group. It should not be taught as a separate strand. The notes and guidance give examples of how ‘working scientifically’ might be embedded within the content of biology, chemistry and physics, focusing on the key features of scientific enquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions. These types of scientific enquiry should include: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources. Pupils should seek answers to questions through collecting, analysing and presenting data. |