

**Science Policy**

Science teaches an understanding of the world around us. It aims to stimulate a child’s excitement and curiosity in finding out why things happen in the way they do. It teaches methods of enquiry and investigation to stimulate creative thought. Children learn to ask scientific questions and understand how science can predict, explain and analyse observations made about their world. Throughout their learning, the children develop an appreciation of the past and current role of science in the world and the way in which science will affect the future on a personal, national, and global level.

Our curriculum is knowledge engaged and is built from within to meet requirements of the National Curriculum 2014.

**Aims (Intent)**

Living

We encourage the children to be curious about the world around them and ask/answer scientific questions. We enable pupils to be creative, independent, inquisitive, enquiring and confident to develop their scientific skills to the full. We enable our pupils to apply their learning in order to understand the uses and implications of science, today and for the future. We provide opportunities for increasing awareness and inspiration for further study and careers in science.

At Grange, using scientific language is crucial to developing scientific thinking and deepening conceptual understanding. Our classrooms are language rich with emphasis given to sharing key vocabulary which is referred to throughout. Whilst children unravel scientific problems they will articulate their thinking. Questions are carefully planned for key points in the lesson to deepen scientific reasoning and understanding.

Learning

At Grange our curriculum is knowledge engaged and cumulative; with core skills and knowledge secured first, we then use connections to develop conceptual understanding. Our pupils plan and carry out scientific investigations, using a range of types of enquiry and know how to develop a fair test, recognising the different variables that need to be taken into account. Our pupils learn how to evaluate evidence and present their conclusions clearly and accurately.

Grange promotes confidence and competence with our pupils understanding of the life processes of living things, the physical processes of materials, electricity, light, sound, and natural forces, the nature of our planet and the wider solar system.

Laughing

At Grange we believe children learn best when the lesson is adapted to their learning style. We endeavour to enthuse and inspire future scientists through outdoor learning, the imagination station, our school STEM lab and trips. Our learning does not stop, further opportunities to explore science is provided through university workshops and whole school experiences.

**Teaching and Learning (Implementation)**

Grange Primary School follows the National Curriculum 2014 objectives for Science, using Focus Education to support our implementation. This is achieved through the use of a range of teaching strategies, including whole-class teaching, cross-curricular learning, problem solving activities, small group enquiry-based activities as well as research activities, supporting all types of learning. We encourage the children to lead the learning by having a question based approach to encourage curiosity. Our Science curriculum is knowledge engaged and builds on the knowledge from previous years.

The Science curriculum is delivered through an ‘I wonder…’ enquiry approach, ensuring that the National Curriculum 2014 content is covered. These topics have been carefully planned to ensure that skills and knowledge are built upon across all year groups.

Science in EYFS

The teaching and learning of science in EYFS comes under ‘Understanding the world’. This area of the curriculum is split into three sections – people and communities, the world and technology. Through teaching of the world children are encouraged the ask questions about their environment. They learn about animals and plants in their familiar world and talk about why things happen and how things work. Children develop an understanding of growth, decay and how things change over time. They are taught to show care and concern for living things and the environment.

At Grange, Science is delivered weekly and each lesson has a clear learning objective which is differentiated using a must, should and could statement. The Science in the classroom, is adapted to meet the needs of all learners, we challenge through mastery, which means we want to deepen their understanding through development of higher order questioning. As support, we scaffold the learning but always ensure we are still encouraging independence. ‘I wonder’ question boards are used in the classroom to support and facilitate learning, these aid retention, encourage independence and support the development of vocabulary. Wherever possible the Science curriculum is enriched through the use of the STEM lab to aid the exploration of scientific concepts practically.

**Assessment (Impact)**

Summative assessments

We use summative assessments to accurately assess pupil progress towards their end of year targets three times a year. This is recorded on Science year group trackers. This information is analysed to determine any gaps in content domain as well as misconceptions. It also allows identification of any pupils who are not meeting expectations and this is recorded at the end of each summative assessment. This information informs future teaching and learning.

Formative assessments

Within a lesson, AFL is used to identify pupils that need challenge and support within the learning objective. This is done through precise questioning, carefully planned tasks and plenaries and targeted teacher support. Pupils receive verbal feedback and written feedback to encourage next steps where appropriate.

Assessment within EYFS

Upon entry to the setting children are observed and assessed using statements from the development matters. These judgements by staff form the baseline assessment which takes place within the first half term of school. These judgements are made by staff and include in-depth discussions with the team about observations they have made of each child in each area of learning. Analysis of the baseline will enable staff to identify any groups of children who may need extra support in specific areas and allows staff to accurately plan next steps for learners.

During the year, the children are assessed four times; the end of the first half term - the baseline, at the end of the Autumn term, at the end of the Spring term and at the end of the Summer term. For Reception children, the assessment that comes during the summer term, is the profile assessment, here children are assessed against all the early learning goals to establish whether they have made a good level of development during their time in FS2.

During these four assessment periods, summative judgements are uploaded on to Tapestry where teachers analyse the data and spends time with each teacher discussing the progress each child has made. These pupil progress meetings enable staff to identify children or groups of learners who may need extra support in school and at home.

During the school day, the EYFS are constantly assessing using the online tool Tapestry. Tapestry is an online learning journey system where staff can take photographs and videos of activities and observations they have made of the children and upload them into a child’s specific learning journey, linking them to different skills the children are developing. These learning journeys can be accessed and added to by parents at home. These continual assessments feed into weekly planning.

**Home/ Community**

At Grange, we believe that having a good relationship between home and school is vital. Parental workshops are carried out yearly to encourage, enthuse and support parents/ carers with different aspects of Science. During curriculum showcase events, parents are given opportunities to engage in the learning that takes place in school. Each half term, practical Science investigations are shared with families to encourage discussion and exploration of scientific concepts. Once a year, there is a whole school Science celebration week with a competition.