Science: Intent, Implementation and Impact (July 2020)

Intent

Bayford's vision is to distil a lifelong love of science within our pupils, we want them to be inquisitive, explore and question the world around them. Science has changed our lives and is vital to the world's future prosperity therefore we are developing our STEM curriculum so that there are strong links between Science, Technology, Engineering and the Maths curriculum. We believe that Computer Science has a large part to play in our curriculum and the children's understanding of the world around them. The children will have a clear understanding of what is meant by Biology, Chemistry and Physics and how they fit with our everyday understanding of the world. We work hard to provide a rich and varied curriculum to challenge and meet the needs of our children. We believe all pupils should be taught the skills of working scientifically and the essential aspects of the knowledge, methods, processes and uses of science. From EYFS up to KS2 our pupils will build up a body of key foundational knowledge and concepts, pupils are encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. We provide our children with wider opportunities in science with educational visits and make links to other subjects. We challenge pupils on a weekly basis to develop the progressive working scientifically skills to explore and embed the knowledge and is unique to our school and our needs. We monitor our schools progress in science regularly in line with our science policy.

The national curriculum for science aims to ensure that all pupils:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future

<u>Implementation</u>

We are developing a high level of subject knowledge of science in our school by introducing training and professional development. In our school we strongly encourage all pupils to use specific topic related vocabulary. Through effective teaching of science, we develop children's knowledge and key skills during each topic. With effective subject management we are a well-equipped and resourced school. Regular monitoring shows that our children are developing an understanding of key scientific principles within their work which they are starting to apply. Children are provided with regular opportunities to develop strategies for questioning and thinking. In our school we have a rigorous monitoring process which is kept up to date and works towards our school improvement plan.

Children will be provided with a broad and balanced science curriculum which reflects the equality and diversity practice in school. Teachers will ensure

the children are exposed to at least one Science based trip within each year and a Science day will be planned each year for the children to show their scientific understanding through fun activities and experiments. Children will be immersed in key scientific vocabulary which supports them in their scientific knowledge and understanding in all topics covered across the school.

How are lessons taught?

All children will be introduced to the scientific vocabulary for the area of science that is about to be taught. Upper Key Stage 2 will use the vocabulary grid provided. Lower Key Stage 2 will use the vocabulary quizzes on Developing Experts for their current topics.

KS1 and EYFS will have their vocabulary displayed in the classroom for them and these will be referred to regularly in lessons.

Children will review the area of Scientific Enquiry that they are using during each lesson and record this on the science enquiry wheel in the front of their book, this may be adult led in Key

| d) — | Word | I have never heard the word before. | I have heard the word but can't remember its meaning | I can use the word in the right way when I am talking | I can give a definition of this word/ phrases or use it correctly in writing. (Write it in a sentence below.) |
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Stage 1. Teachers will be encouraged to plan for extended writing opportunities within Science.

Resources

Planning will be supported by the use of Developing Experts and various other resources deemed to be appropriate for the teaching and learning of a particular strand or topic. Teachers are prompted to complete online CPD prior to teaching a new topic using ReachCPD.

Assessment

Formative assessment involving questioning, in the moment marking, observation, challenge and questioning will be used in every lesson. At the end of each half term the children will complete a peer assessment grid to check their understanding and self-evaluation of the topic covered. Teachers will then complete an overview assessment grid for each cohort on the topic covered which will follow the cohort as they move up the school.

Monitoring

Science will be monitored via 'Book Looks', planning and feedback, learning walks and observations and pupil voice. Each classroom should have an up to date Science display with vocabulary for the current topic.

Staff Development

Staff training during staff meetings, mentoring, peer observations, training courses and online CPD through ReachCPD. Science lead attends regular Ogden Trust meetings and cluster meetings to keep up to date with changes to the curriculum. Teachers are placed on relevant training courses and have received free resources through these meetings.

Impact

Science resource cupboard is kept tidy and up to date with a current list of resources provided. Teachers are asked prior to each year for any new resources they may need to effectively teach their topics.

Teaching of Science results in a fun, engaging, high quality science education which provides children with the foundations for understanding the world around them.

Children will be able to articulate their understanding of different scientific concepts and can reason scientifically using appropriate scientific vocabulary. They will demonstrate a love in science work and retain their knowledge of Science throughout the school, referring back to previous learning where suitable.