Science at Blaydon West Primary School

At Blaydon West Primary School, we place a great emphasis on teaching science; our *curriculum is high quality, well thought out and is planned to demonstrate progression.* Within science, we strive to create a supportive and collaborative ethos for learning by providing opportunities for children to question and investigate, to discover answers for themselves and take their learning in a direction they are interested in. Children start school with a natural curiosity and fascination in learning about themselves, others and the world around them. They should be encouraged to explore their own ideas about the natural and man-made world, while developing an awareness of how to respect the environment.

Intention

- In our **Early Years Foundation Stage**, we aim to:
- *Develop curiosity and wonder through first-hand experiences.*
- *Provide children with opportunities to explore, observe and find out about themselves and the world around them.*
- *Develop children's ability to notice patterns, make comparisons and talk about change.*
- *Follow the children's interests to ensure they have opportunities to explore and develop their own ideas.*

- In **Key Stage 1 and Key Stage 2**, children study the National Curriculum for Science and we aim to:
- *To engage, inspire and challenge pupils, equipping them with the knowledge and skills to experiment, investigate and think critically about the world around them.*
- Enable children to develop their skills of co-operation through working with others, and to encourage, where possible, ways for children to explore science in forms which are relevant and meaningful to them.
- Encourage and enable pupils to offer their own suggestions, and to be creative in their approach to science; devising their own investigations, asking relevant questions and using different types of scientific enquiries to answer them.
- Equip children with the language to be able to discuss their learning and confidently explain their scientific understanding.

Implementation

- The Science subject leader is responsible for the curriculum design, delivery and impact in this subject. This includes regular reviews to ensure that it is being implemented well and coverage and breadth and balance is adequate.
- To ensure high standards of teaching and learning in science we implement a curriculum that is progressive throughout the whole school.
- Teachers plan lessons for their class using bespoke knowledge organisers, which incorporate the Working Scientifically skills set out in the National Curriculum's science programmes of study.
- *Knowledge organisers also include such elements as the following: key vocabulary, substantive concepts, previously skills gained, what they should know, as well the "big 3" (KS1) and "big 5" (KS2) knowledge facts that we expect children to be able to retrain/retrieve following coverage of said topic/unit. Extended knowledge is also included for those children working at greater depth.*
- *Retrieval questions are used at the beginning of each lesson, which not only provide opportunities to address misconceptions, but to also extend the children's knowledge, understanding and thinking.*
- *Teachers make effective use of the programme, Developing Experts to enhance the children's teaching and learning experiences, as well as to support their continuous professional development and subject knowledge.*
- *Cover posters are utilised at the beginning of each new topic and added to the children's books. These are for the children's reference and include key vocabulary, accompanied with symbols/images, along with a progression timeline, which includes the enquiry questions that are the focus of each lesson, along with the overarching enquiry question for the whole unit of work.*
- We provide a variety of opportunities for science learning inside and outside the classroom. Learning outside of the classroom is an essential part to learning science. It is essential children observe and immerse themselves in their local environment to apply their learning practically to real-life situations, particularly nature and wildlife preservation, given our current climate.
- *Children explore different ways in which to experiment including: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources,* with the aim that by KS2 children should be equipped to devise their own investigations.
- Children carry out an investigation at least once per topic. Each year group follows a particular investigative format to help enable a natural progression of skills across the school.
- Opportunities for children to apply their mathematical knowledge in science- including collecting, presenting and analysing data are incorporated into lessons.
- *Lessons are linked to other areas of the curriculum where appropriate i.e. design and technology, computing, history and geography, to ensure cross curricular learning.*
- Teachers present key knowledge and vocabulary clearly, and effectively model and teach skills.
- Lessons are exciting and engaging and *where possible are relevant and meaningful to the children of Blaydon West.*
- Teachers make good use of 'big questions' as a stimulus *to provoke curiosity and intrigue.*
- Misconceptions are addressed through marking, verbal feedback, and adapting planning.
- CPD is used to support teacher knowledge and pedagogy.
- *Activities such as clubs, workshops, and whole –school science weeks are regularly organised in order to expose children to experts/professionals in STEM.*

Impact

- *Inspired, engaged and excited learners*
- *Children who are confident and capable of exploring their own ideas*
- *Children who have a better understanding of the world around them*

We will measure the impact of our science curriculum through the following methods:

- *Images and videos of children's practical learning.*
- *Termly reporting of standards across the curriculum i.e. cohort trackers.*
- *Children completing end of unit assessments.*
- *Tracking and monitoring end of unit assessment data i.e. to address misconceptions/inform retrieval questions etc.*
- *Regular moderation tasks to monitor the impact of the knowledge and skills that are being taught i.e. coverage of topic objectives and working scientifically objectives, termly investigations, opportunities to explore the five lines of scientific enquiry etc.*
- *Evidence of subject knowledge being taught through planning and books.*
- *Reflection on standards achieved against the planned outcomes i.e. annual school improvement plan.*
- *Pupil discussions about their learning.*

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