Subject on a Page:

Science

Waddesdon Village Primary School- Pathway to Excellence

At Waddesdon Village Primary School, we aim to provide a creative, vocabulary rich curriculum that challenges and inspires our children, in preparation for life in a culturally diverse and ever-changing world.

Whole School Curriculum Drivers: **Excellence** **Community** **Growth**

Intent - we aim to…

1. Provide an enriched and broad primary science curriculum to give all pupils the skills, knowledge and cultural capital they need to understand our world.

2. Support all children in confidently thinking and working scientifically so they can apply their knowledge to other subjects and in everyday life.

3. Deliver high-quality teacher-directed instruction and enquiry-based learning with a focus on vocabulary, methods and explanations linked to knowledge and conceptual understanding.

4. Provide challenge for all children and develop understanding of how misconceptions and mistakes build learning.

5. Share work, successes and enthusiasm for Science with the school and wider-school community.

6. Develop all children's understanding and skills in Science as to how to be a scientist

Implementation - How do we achieve our aims?

1. Follow the WVPS comprehensive, sequential and progressive primary science curriculum overview.

In line with National Curriculum, as a school we look at the skills needed for each year group and follow our Curriculum Policy. We map these skills out across the primary age range building on the foundations established in our Early Years. The concepts for each year group are regularly monitored and reviewed with the aim of enriching learning further and building on skills and understanding, sequentially teaching all the scientific components appropriately.

2. Embed learning by applying skills in a variety of ways across primary science and other subjects

Activities are wide and varied – examples include: observing changes to plants over a period of time, grouping and classifying animals, identify that light is reflective from surfaces, explaining that unsupported objects fall towards earth, recognising that living things have changed over time. Technology is used to record and research, topic-songs are sung, mathematical skills are used to calculate, record and present observations and language development via class core and topic-based texts are read to embed reading and vocabulary understanding.

Implementation continued…

3. Consistent high-quality teaching and enquiry learning

Teaching and learning is broken into small chunks to support children's conceptual development. Each time a scientific skill is being used - modelling, teacher demonstration, explanation and feedback are provided to increase the children's working memory capacity and success. Practical work is used in line with curricular goals and retrieval practice identified to reinforce conceptual understanding. Year groups are using the White Rose Science scheme, which works alongside the National Curriculum. - September 2023. In Key Stage 2, children will take end of unit tests (summative test) to make a judgement, alongside teacher judgement. In Key Stage 1, children will be assessed through using the White Rose end of unit tests, alongside teacher judgement.

4. Provide challenging lessons and a questioning environment

Lessons are built on prior-knowledge and learning. Science often contradicts the observations we make in daily life – learning will enforce understanding so these misconceptions can be considered and more progressively discussed over time.
Engaging starters. (using a fluent in five style approach) children will be asked questions from previous topics so that the children can consolidate the scientific knowledge they have acquired and develop this further. Teachers will use the starter questions developed by the White Rose Science scheme or if their topic has not yet been created, staff will plan their own questions to support and further enhance the children's learning.

Developing STEAM opportunities via discrete and sequential lessons, British Science Week and other deeper challenges, such as UKS2 'Crumble'.

5. Celebrate our achievements

Share work within and across classes as well as with Governors, parents and carers through open afternoons, school displays, digital platforms and parents' evenings. Developing links with our local schools and networks allow for deepening children's knowledge and understanding around 'working and thinking' scientifically along with investigative experiences.

6. Develop scientific skills to think like a scientist

Teacher-directed examples into how scientists think and behave will progressively help children develop curiosity to explore how the world works or find answers to questions no one has answered yet, help build their confidence, encourage them to be themselves and embrace misconceptions (science is a system of trial and error).

✓ Impact - How we know we achieved our aims?

1. Children progress through WVPS thresholds and milestones: working and communicating scientifically.

2, 4 & 6. Children are learning to think like scientists: they are confident and capable in selecting the scientific skills (and other subject skills) and scientific vocabulary needed to tackle a problem, task or question.

With time, questions are confidently posed and answered to overcome problems and misconceptions with willingness, excitement and curiosity. Most children will accept mistakes and know that they can learn from them.

3. Children make good progress with a high percentage reaching age-related expectations. They can retrieve conceptual understanding and scientific skills needed to tackle any given task or problem. Children can explain their thinking and apply this to the practical and theoretical elements of science.

5. Children are proud and able to confidently share their successes and achievements with their class, school and wider community.