

The Science Curriculum

“Somewhere something incredible is waiting to be known.”

Carl Sagan

Motcombe School



Flying high together

The Science curriculum at Motcombe has taken many of the content and principles of 'Mastery' in mathematics. We have developed a curriculum which ensures children spend longer being taught the common features and skills in order to have a more coherent Science curriculum and therefore be able to develop mastery in the subject.

INTENT

End Point

To know that Science helps us learn about the natural world through observation and experimentation.

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The aims of Science teaching at Motcombe:

- To develop a positive attitude to Science
- To develop strong scientific enquiry skills, knowledge of animals including humans, understanding of materials as well as season changes
- To ensure that all children will be given the opportunities to develop their Science skills regardless of gender, race, ability, culture or ethnicity
- To explore and enjoy the language and enquiry in Science and begin to transfer this into their vocabulary and thinking including other subjects

IMPLEMENTATION

Organisation of the Curriculum

The National Curriculum forms the basis for our long-term planning; setting out the expectations in each year group. The medium-term planning organises the topics systematically term by term. Short term unit plans are prepared for daily teaching. Children are taught in mixed ability classes. The curriculum is taught through a carefully chosen progression of skills.

Teaching

Teaching of Science at Motcombe uses a whole class approach involving small steps. We have embedded an 'I do, We do, You do' approach to lessons. All concepts are introduced through carefully designed lessons for children to explore and understand. As their conceptual understanding develops, they move towards reasoning and applying the skills and concepts to real life situations. Children are not pushed to move through these stages until they have shown understanding, gained by the teacher through skilful assessment. Further intervention can also be given for those who need more intensive support for Science.

The teacher's role in lessons is to:

- demonstrate a clear model using an 'I do, We do, You do' approach using small steps
- allow time for discussion and pair work
- continually assess children's understanding using multiple hinge questions
- provide support or scaffolding when needed
- present challenge and to develop understanding through expert questioning.

Teachers provide many opportunities for children to explain their understanding by writing, demonstrating or explaining what they understand. Teachers use this to uncover misconceptions, assess and then challenge children. In addition to this, teachers use 'immediate application' to embed concepts. Each lesson is delivered through a variety of vehicles/variation of materials/images and ensures children are applying instantly.

Developing a reasonable sense is a vital part of our Science curriculum. Children are always asked to explain how they know something, either verbally or any other suitable form.

During each lesson, teachers create AFL (assessment for learning) opportunities to ensure the inclusion and challenge is right for all. Assessing independent work regularly, questioning and then providing additional support, no hands up, 'I do, We do, You do' are strategies embedded in the school to continually check children's understanding.

Marking

Our dynamic marking takes place during lessons for all children giving frequent assessment opportunities to monitor children's progress. When children need further support with a concept, the teacher will support them 1-1 or in a small group. Assessment by the teacher diagnoses errors, and sets further questions to address a misconception if appropriate.

Resources

Children have a wide range of resources to help them develop their Science skills and knowledge including videos, images, as well as many hands-on equipment to use within scientific enquiry.

Monitoring, Evaluation and Review

Leaders will monitor the planning to ensure the objectives for each year group are planned in accordance to the mastery approach. There will be regular drop-ins of lessons, review of weekly plans and work scrutinies to ensure continuity, progression and quality marking. Data analysis will inform intervention planning for year groups, groups and individual children.

Parental Involvement

We encourage parents to be involved in their child's learning by:

- publishing information about the Science curriculum for each year group on our school website
- supporting their child at home with basic skills such as predicting, testing, evaluating, classifying and naming things.

Science Curriculum Map



IMPACT

End Point

To know that Science helps us learn about the natural world through observation and experimentation.

Conclusion

It is the aim of the school, to raise levels of achievement in Science by promoting a positive attitude and providing rich science experiences. Children should view themselves as scientists who are able to apply knowledge, skills and understanding to everyday life, but to also enjoy and appreciate the excitement and wonder of science.

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