

## The Maths Curriculum

*“Maths teaches us that there is every reason to believe that every problem has a solution.”*

Unknown

*Motcombe School*



*Flying high together*

When developing the Maths curriculum at Motcombe, we have taken much of the content and principles of 'Mastery' taken from the National Curriculum, which reflects the teaching found in high performing education systems internationally, particularly those of east and south-east Asian countries such as Singapore, Japan, South Korea and China. We have carefully considered the impact of the cultural differences and the specific needs of our children. Through work with the NCETM and other local schools we have put together a plan that has led to us developing a curriculum that provides the children with a greater mastery in Maths.

## **INTENT**

### End Point

To know that Maths will help us solve real life problems for the rest of our lives.

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The aims of Maths teaching at Motcombe:

- To develop a positive attitude to Maths
- To develop a strong understanding of number and calculation
- To develop children's reasoning, logical thinking and problem-solving skills
- To ensure that all children will be given the opportunities to develop their Maths skills regardless of gender, race, ability, culture or ethnicity
- To provide rich mathematical experiences, where children can apply their knowledge of Maths to everyday life
- To explore and enjoy the patterns in Maths and to solve a wide range of puzzles and problems including those in 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 the units as follows with all year groups teaching the same units at similar times. Number and place value, addition and subtraction, multiplication and division, fractions, measurement, geometry, statistics.

### Teaching

Teaching of Maths at Motcombe uses a whole class approach involving small steps. We have embedded the CPA (concrete, pictorial, abstract) approach to lessons. All concepts are introduced with concrete resources for children to feel and manipulate. As their conceptual understanding develops, they move towards the pictorial and abstract stages. These are recorded in their books as 'the real story' and 'the maths story'. Children are not pushed to move through these stages until they have shown understanding gained by the teacher through skilful assessment.

The teacher's role in lessons is to:

- demonstrate a clear model using an 'I do', 'We do' and '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.

Visualisation is a core mathematical skill. Teachers provide many opportunities for children to explain their understanding by writing or drawing 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 keen number sense is a vital part of our maths curriculum. Children are always asked to explain how they know an answer, if they can show it a different way/an easier way to build upon their conceptual understanding.

During each lesson, teachers create AFL (assessment for learning) opportunities to ensure the inclusion and challenge is right for all. Marking 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 and this evidence will be recorded in books. Marking by the teacher diagnoses errors and sets further questions to address a misconception, if appropriate. Where children can offer verbal feedback to questions then this will be recorded by the teacher in note form, usually the letter 'R' to acknowledge their reasoning.

### Resources

Children are all trained in the use of Numicon, Dienes and double-sided counters to support their learning. These resources are always at hand in the classroom and the children are trained to have the initiative to use them when they feel they need to.

### Monitoring, Evaluation and Review

Leaders will monitor the planning to ensure the objectives for each year group are planned in accordance with 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 maths curriculum for each year group on our school website
- supporting their child at home with basic skills such as counting, number recognition and basic operations.

# Maths Curriculum Map



Place value



Addition  
And subtraction



Multiplication  
and division



Fractions



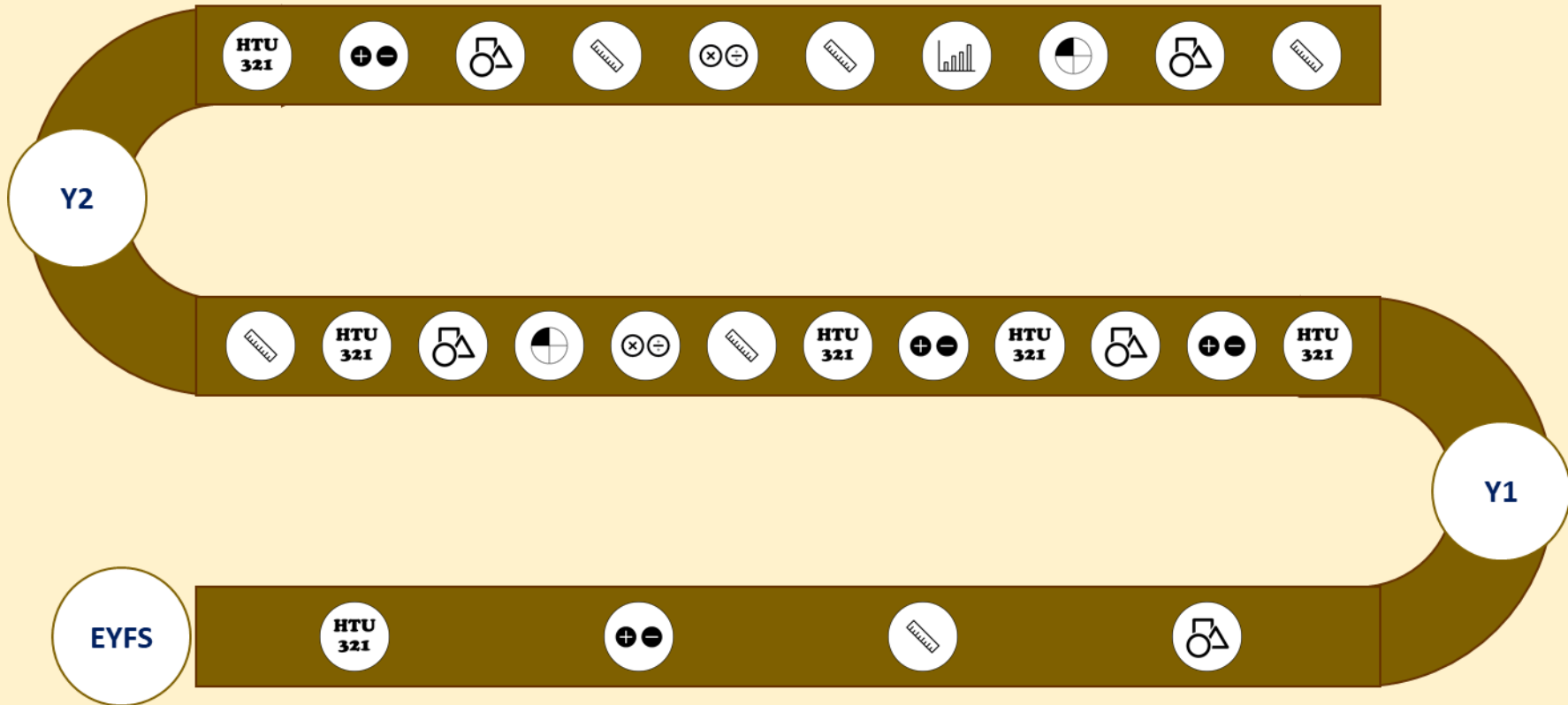
Measurement



Geometry



Statistics





## **IMPACT**

### End Point

To know that Maths will help us solve real life problems for the rest of our lives.

### Conclusion

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

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