



## Maths at Hillstone

### Aim

Our aim is to equip all pupils with the skills and confidence to solve a range of problems through fluency with numbers and mathematical reasoning. Children are encouraged to see the mathematics that surrounds them every day and enjoy developing vital life skills in this subject.

Carefully planned activities encourage children to work mentally, observe patterns, make predictions and discuss relationships. Mathematics skills are also used in other subjects such as science, ICT and art.

### EYFS

Maths in the Early Years is evident in daily activities, independent learning and taught sessions. Children are exposed to maths at all times and mathematical vocabulary and cross curricular opportunities are seized upon daily. Children use a range of concrete resources to explore maths practically. Learning is primarily focused on number but also ensures a good understanding of shape, space and measure. Children also investigate a problem a day to develop these crucial skills.

### Key Stage One

In KS1 we follow Maths No Problem which is a scheme based on the Singapore approach to the teaching of mathematics. All children have a work book, textbook and a Maths Journal to complete maths learning. Lessons start with a problem which the children investigate as a class using concrete equipment. Children are actively involved in this and physically manipulate resources themselves and explore outcomes and investigations. When children have a secure understanding of this they move on to the pictorial stage of the lesson where their learning is presented in different ways. This may be through the part part whole model or the bar model but many other pictorial representations for all areas of maths will also be evident in their Journal's. It is only when a child has fully understood this concept that they move on to the abstract stage and actually write number sentences and show their learning in different ways. Questioning is used very effectively throughout the lesson to ensure that the children can explain reasons for their answers and therefore show a mastery understanding of the topic.



## Key Stage Two

In KS2 a variety of resources are used to ensure that high quality learning and mastery is taking place. We follow the medium term planning set out by the White Rose Hub but alongside this use resources published by the NCETM such as the mastery assessment materials and the reasoning guidance. Lessons follow a similar structure to KS1 and start with a problem which often involves the use of concrete resources. In most lessons, children then demonstrate their learning pictorially before then completing the abstract task. At the end of the lesson the children will refer back to their learning slip and complete a 'Prove it' task to show that they have fully succeeded in mastering the objective. A weekly arithmetic lesson is also taught to develop children's knowledge and understanding of number and the associated methods.

## Mental Maths

Children are encouraged to develop their mental maths skills every day throughout the curriculum. Times tables are explicitly taught giving children the knowledge of what they actually are and how they are formed and also the opportunity to spot patterns and make links. Target Tables are used to assess children's fluency in recall and also their problem solving and reasoning skills. For each times table there are three tests which show a build-up in skills. Test one assesses the child's basic counting skills, test two assesses fluency and recall and test three ensures that the child has fully mastered the times table. These tests also give the child a clear maths target and end goal.

## Gifted and Talented

Gifted and talented children will be challenged further in lessons through questioning and explanations. A 'Going Deeper' activity will also be planned for in each lesson to enable pupils to take their learning further forward. These will not involve bigger numbers or concepts from a year above but instead will ensure that a child has fully mastered an abstract idea by asking them to explain it in a different way or look at things a little bit differently. Skills in problem solving, reasoning and fluency will be developed even further with 'Going Deeper' tasks.

## SEN

Personalised provision will be provided for children with SEN in maths. This may involve children spending a longer time on a concept or using concrete resources to aid understanding throughout the lesson. In some cases, children may be working on objectives from previous year groups. Specific interventions will need to be planned for some children in line with the SEN policy.



## Planning

Planning will follow KS appropriate medium term planning and be presented on the agreed school's planning format. All lessons will have a clear Learning Ladder target and will follow the problem, pictorial and abstract approach using suitable concrete apparatus. Mental maths activities will also be planned for using children's personalised targets. SEN children may have a separate target for a lesson based on their needs but apart from that the whole class will work towards one target with the rapid graspers being challenged further with going deeper tasks.

## Teaching

In the EYFS, children are given the opportunity to develop their understanding of number, measurement, pattern and shape and space through a combination of short, formal teaching as well as a range of planned structured play situations, where there is plenty of scope for exploration. Children will become very competent 'counters' so that their fluency with the number system provides a foundation for mathematical understanding. Counting forwards and backwards in many different sized steps as well as from different starting and ending points is essential.

Maths learning builds from a concrete understanding of concepts where children are manipulating objects. When children are able to see concepts this way, they then need to understand the same concepts represented pictorially. Children are then ready for abstract representation before being able to apply their knowledge to different situations.

Children should be encouraged at all times to communicate their understanding of maths so that it clarifies their thoughts. They should also be able to discuss their mathematical findings and explain answers.

Children's mental maths is of great importance, with number bonds, times tables facts and various strategies for calculation taught and practiced at school with support sought from parents through homework activities. A progression towards efficient written calculations should be developed and applied consistently in each year-group. The school Calculation Policy should be followed.

## Assessment

Assessment for learning should occur throughout the entire maths lesson, enabling teachers to adapt their teaching/input to meet the children's needs. This feedback should be incisive and regular. On a daily basis children should self-assess against the learning objective and success criteria, giving them a sense of success. Children will complete a '*Prove it*' activity to show that they have fully mastered the objective of the lesson.



Pupil's work should be marked in line with the Marking Policy. '*Pink for Think*' should be used for children to look at incorrect answers again, correct misconceptions, to show mastery of the objective or to '*go deeper.*' Teachers will decide if a child has achieved an objective and input this on Learning Ladders. Future lesson design should depend on class success evaluated through marking and observations made during the lesson. Summative assessments occur termly based on medium term planning to ensure a more rounded judgement of a child's abilities.

### Display and Resources

In the classrooms there should be, either on display or easily accessible to children, age appropriate resources, particularly concrete and pictorial apparatus to support children to grasp concepts. Mathematical vocabulary should be displayed so that children use this in the communication of their understanding. There should be maths work on display on Maths Working Walls in classrooms and in other areas of the school in order to encourage a positive attitude and enthusiasm towards mathematics for all groups of children

### Parental Engagement and Homework

We recognise that parents make a significant difference to children's progress in maths and encourage this partnership. The homework policy and curriculum information leaflets outline how parents can support with the subject at home.