



## HCPS Maths Policy and Practice

### Introduction

Mathematics enables children to examine the world through a universal language that entails common concepts, operational skills and symbols. It enables children to predict, describe, explain, investigate and communicate findings. Opportunities are identified which give children the confidence to work in individual and collaborative situations. In particular, children are taught to apply their knowledge and skills to a range of practical, real life contexts, to ensure their learning is both purposeful and meaningful. Skills are linked and taught together to maximise teaching time and to give context to learning. We also emphasise the importance of times tables, mental maths skills and the ability to solve problems through mathematical concepts. Some of our successes have been due to regular use of AFL, teaching with awareness of learning styles, booster classes and team teaching.

### Equal Opportunities

It is recognised that in order for the maths to be meaningful for all children, the examples offered must reflect, but also extend, children's direct experience. Hence it is important to make use of real- life examples, but also be aware of other number systems and the use of symbolism in other cultures. Children who show an aptitude for mathematics are grouped according to ability and may be moved across phase in order to be suitably challenged or inversely, in the case of less able children, supported. Groups at KS2 are flexible and based on assessment results and needs at the time. In KS1 children can move to work with other classes if the need arises, or if extension or extra support is needed.

### Aims

We believe that to raise standards we need to give children opportunities to:

- acquire skills at a level appropriate to their ability and use these skills in cross-curricular situations
- develop independence in the application of their skills to different contexts
- choose to use mathematical strategies, knowledge and equipment in the course of day-to-day activities

- use ICT as a mathematical tool, increasing understanding of mathematical concepts
- appreciate maths as a means of communication
- make links between maths and other curriculum subjects
- work individually and co-operatively to investigate problems, including those with open ended solutions
- mentally calculate solutions in oral and mental warm ups and through the teaching of mental strategies (great emphasis is placed on learning times tables)
- use mathematical vocabulary, in contexts, accurately and with understanding
- have enjoyment of the challenge of working out mathematical investigations
- develop confidence and resilience when applying mathematical concepts

## **Practice**

### **Planning and Delivery**

- The objectives of the Primary Curriculum 2015 form the basis of what is taught in mathematics at HCPS.
- Yr1 – 6 staff plan using HCPS Accelerated Learning planning sheet, Foundation stage plan using the agreed FS planning format.
- FS encourage children to explore mathematics and mathematical ideas through child initiated independent play in a carefully planned and resourced environment.
- At KS1 and KS2 Numeracy is delivered through whole class teaching, targeted group work and careful use of open and closed questioning.
- At KS2 mathematics sets are grouped according to abilities to allow children to be challenged and supported according to their needs.
- AFL informs our teaching and tailors learning to suit the needs of the pupils.
- Numeracy groups are flexible with children moving groups to access support as necessary.

- Skills are taught through meaningful contexts and areas of maths are linked together to maximise learning time and to give context to teaching.

### **Arithmetic**

- The teaching of addition, subtraction, multiplication and division should be introduced through mental strategies which encourage the use of appropriate strategies and jottings. Children are encouraged to choose and use methods that are appropriate for the question/task. Formal written methods are introduced in year 2 and progressed throughout KS2. (see also HCPS Calculation Policy)

### **Times tables**

- The learning of times tables is practiced throughout all year groups as an essential mathematical skill that impacts upon all areas of mathematics. It is expected that all children will know their times tables to 12x12 by the end of Year 4. Times tables are taught through the innovative use of games and interactive activities, aimed at creating mental agility and adaptability. The use of HCPS Times Table cards from Yr2 upwards encourages children to practice at home as well as in school. Those children that have progressed beyond these focus on using and applying their times table knowledge in real life situations. (eg using their times table knowledge to calculate percentages of amounts, and applying their times table knowledge to algebra, exploring tables beyond 12 x 12)

### **Mental skills**

- Mental Arithmetic skills are essential in order for children to apply mathematical concepts to immediate real life problems. Mental warm up sessions rehearse and embed these skills through the use of a range of real life situations and quick recall activities. and focus on teaching a mental skill and applying it through games and problem solving activities.

### **Problem solving**

- This is used as a vehicle for children to apply, rehearse and demonstrate their mathematical skills in real life contexts. The process of solving written problems is taught and the correct use of vocabulary emphasised. Problem solving activities are planned to be open ended to encourage resilience and collaboration. Staff use problem solving activities as an opportunity for children to explain and verbalise their thinking, it is a method of checking understanding and identifying next steps. At HCPS we use real life situations and problems to ensure that the curriculum is engaging and inspiring for all pupils.

## **Assessment and Record-keeping**

- There are a variety of systems in operation, according to the age of the children and the purpose of the assessment. Informal short term assessments and AFL are used formatively to adjust teaching during the lesson. Planning will be annotated to inform subsequent teaching opportunities.
- In Foundation Stage children's progress is recorded through observation and is matched to EYFS age band stages. At the end of FS a judgement is made using the EYFSP profile statements.
- At KS1 & 2 children are assessed termly using the HCAT trackers on their Mathematical understanding to provide information on whether children are acquiring and consolidating concepts so that action can be taken to revisit material if necessary, or next steps planned to move the children on.
- Objectives for each year group are highlighted on the HCPS Mathematics Curriculum document to ensure coverage and inform future teaching.
- At the end of Years 2 and 6 children sit Statutory Assessments and the results are reported to parents at the end of the school year. Year 3, 4 and 5 children are assessed against the HCPS Assessment Trackers (HCAT). Outcomes are entered into Attainment Spreadsheets and tracking of pupil's progress is regularly monitored through use of Assessment Manager. Termly pupil progress meetings analyse data and discuss progress and attainment at individual, class, cohort and groups (PP, SEN, Girl/ boy etc) level. Based on this analysis interventions can be targeted as required.

**Marking** (see separate Marking Policy and Codes).

## **Role of the Leader**

- The quality of learning and teaching of Numeracy is monitored through lesson observation, learning walks, research and development and scrutiny of work. Individual feedback is given as soon as possible after the observation and actions agreed with that member of

staff. These actions then become a focus of future observations. General feedback is given in staff meetings and any whole school issues discussed and actioned.

- The leaders support colleagues as necessary in training needs and planning of appropriate activities.
- To ensure continued development of school mathematical practice and the development of the subject an annual action plan is developed and regularly reviewed, evidenced and updated.
- The leaders scrutinise data to highlight areas of development and action plan to move the subject forwards and continue to raise standards. Again these findings are shared with the Head and staff and areas actioned. Leaders meet with the mathematics governor on a termly basis to discuss progress and attainment and progress towards the mathematics action plan.

### **Conclusion**

This policy and procedure document sets out to acknowledge the central place maths holds, both in education and in later life. It ensures that all aspects of mathematics education at HCPS reflect a shared vision and are consistent with raising standards across the curriculum. It is to be used by all staff.

**See also HCPS Calculation Policy**