

Portobello Primary School

Mathematics Policy



September 2019

* The Mathematics Policy was revised by: Mr Connor Chipchase
* It was approved by the Governors on: ......................................
* The next review date is: July 2020

***Purpose***

Mathematics is a creative and highly inter-connected discipline. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject. (National Curriculum 2014)

The purpose of mathematics in our school is to develop:

- A positive attitude and fascination towards mathematics as well as an awareness of the relevance of mathematics in the real world.

- Competence, confidence and fluency in mathematical knowledge, concepts and skills.

- An ability to solve problems, to reason, to think logically and to work systematically and accurately.

- Initiative and an ability to work both independently and in cooperation with others

- An ability to communicate reasoning in mathematics.

- An ability to use and apply mathematics across the curriculum and in real life.

- An understanding of mathematics through a process of enquiry and experiment.

***Knowledge Skills and Understanding***

At KS1 and KS2 teachers use the national curriculum (2014) for Mathematics to ensure that all programmes of study are taught. Additionally, mastery documents provided by NCETM form an integral part of our teaching of mathematics. Further, curriculum statements provided within Target Tracker are used to scaffold learning.

***Breadth of Study***

Through careful planning and preparation we aim to ensure that throughout the school children are given opportunities to develop their mathematical knowledge and skills through problem solving activities, using and applying their knowledge of number facts and wherever possible using the outdoor learning environment.

***Mastery***

At Portobello Primary School, we inspire our pupils to develop a mastery of all mathematical concepts. Our mathematics curriculum has three key aims. These are to progress our students to become fluent in the fundamentals of mathematics, become confident to reason mathematically and accurately solve problems by applying their conceptual understanding of mathematics.

The curriculum we provide achieves our aims through our purposeful use of tailored and frequent practice with increasingly complex problem solving tasks, which deepen our students understanding by exposing the underlying structure of key principles of mathematics. Additionally, in each session we help our children to make sense of concepts and achieve fluency through carefully structured questions, whole group and individual exercises. These methods use conceptual and procedural variation to provide ‘intelligent practice’, which develops conceptual understanding and procedural fluency in parallel. Further, we provide our pupils with opportunities to follow a line of enquiry so that they learn to connect mathematical relationships and develop their skills to justify their reasoning through use of high quality mathematical language.

***Cross-Curricular Links***

As our school adopts topic based learning, opportunities exist to extend and promote mathematics. Teacher’s planning indicates opportunities to teach mathematics through other subjects. Maths work within topic based activities in fundamental to our schools methods of reinforcing prior learning and scaffolding future progress in taught maths units.

**Use of Computing in Mathematics**

The use of computing skills is strongly encouraged in mathematics lessons. Children have access to use of interactive white boards (IWB) and Ipads (if necessary). Additionally, children have access to software such as My Maths which our teachers are able to use to set activities and challenges across the Mathematics curriculum. Further, teachers use a variety of interactive teaching programmes through their use of an IWB to support their teaching.

***Planning and Organisation***

At Portobello Primary School each class teacher is responsible for the mathematics in their class in consultation with and with guidance from the mathematics subject leader. The approach to the teaching of mathematics within the school is based on three key principles:

* **Problem Solving**
* **Fluency**
* **Mathematical Reasoning**

To provide ample time for the development of mathematical skills each teacher will provide a daily maths session. This may vary in length but will usually last for an hour. Links will also be made to mathematics within other subjects so pupils can develop and apply their mathematical skills (e.g. through topic work) and as often as possible include use of the outdoors.

**Class Organisation**

From Year there will be a good balance between whole-class work, group teaching and individual practice to provide further differentiation within a set.  The maths groupings are flexible dependent on the topic being taught and on children’s different learning needs throughout the year.

A typical lesson will usually be structured as follows:

* *Mental Oral Starter (Prior learning activity)*

This will involve whole-class work to rehearse, sharpen and develop fluency and reasoning skills, often based on a prior learning objective.

* *The main teaching activity (Based on mastery approach)*

This will provide both teaching input and pupil activities and a balance between whole class, grouped, paired and individual work based on ability.

* *Mini Plenaries (Throughout entirety of the lesson)*

This could be with the whole class or a specific group, and can be used to identify misconceptions, ensure progress, summarise key facts, assess against the success criteria for the lesson, to make links to other work and discuss the next steps in learning.

* *Plenary (Assessment for learning activity)*

An opportunity to make links between sequences of sessions, reflect on learning against the success criteria, practise taught skills and increase awareness of next steps in learning.

***Use of Teaching Assistants***

Teaching Assistants are actively involved in teaching small groups within lessons and in providing intervention sessions. They support all groups in the classroom, enabling the teacher to also work with all groups on a weekly basis. They offer sensitive support and are expected to modify tasks, materials and teaching resources as required.

They demonstrate initiative in using practical resources to support learning and help pupils overcome difficulties, for example by using strings of counting beads to aid early multiplication. They are careful not to over-direct pupils’ learning.

They spot misconceptions and gaps in learning, and take responsibility for assessing pupils in their groups, and help to identify the next steps and plan subsequent activities with the class teachers. They participated in reviewing pupils’ progress and were particularly effective in identifying and supporting personal problems that presented barriers to learning.

***EYFS***

Teachers of Foundation Stage base their teaching on objectives in the Early Years expectations framework. This ensure that they are working towards the ‘Early Learning Goals for Mathematical Development’. Although Mathematics is still taught using the play based approach in Foundation Stage, opportunities are still given for the children develop their problem solving and reasoning skills about numbers through a series of subject specific activities. Additionally, problem solving is addressed using a variety of context planned around the use of the key learning areas and the outdoor environment. For example: The use of role play areas as a shop, or using the sand to hide shapes which the children must locate and state their properties. Simple decision making is also a key part of the EYFS curriculum we provide. This can be done simply by the children choosing their own criteria when sorting objects or shapes and later on it can be linked to activities which develop their creative and critical thinking.

***Special Educational Needs & Inclusion***

At Portobello Primary School we have the highest expectations for all children. We act early to secure the essential knowledge and skills of the least able. In conjunction with the leadership team, notably the SENCO and Maths Subject Leader, staff are encouraged to reflect on why these barriers exist in the first place, what can be done to prevent them arising in future. Where gaps need to be closed for individuals or groups, we run a wide range of interventions throughout the school. The intervention used will depend on the nature of the difficulty for the child/ren. The impact of these is monitored and regularly reviewed.

***Gifted and Talented***

Within a daily mathematics lesson teachers provide appropriate challenges for children who are exceeding the expectation of their year group specific targets. Similar to SEN children, their provision is carefully mapped out and monitored to ensure successful challenge and provision. Mastery and deepening learning are critical to our mathematics pedagogy and the curriculum provided to our students.

***Equal Opportunities***

At Portobello Primary School we incorporate mathematics into a wide range of cross-curricular subjects and seek to take advantage of multi-cultural aspects of mathematics. We ensure that all children are able to fulfil their potential regardless of race, religion, disability or gender. When teaching mathematics to children with English as an additional language children would be supported by; repeating instructions, emphasising key words, using visual representations, playing mathematical games and encouraging children to learn key principles of mathematics.

***Marking and Presentation***

Marking of children’s work is essential to ensure they make further progress. All work is marked against success criteria, in line with the school marking policy. Work is to be marked once completed, before the next piece of work. However, it is recognised that it is not always necessary to mark every piece of work in depth. The children can be involved in instant feedback through use of peer marking schemes and can be supported in setting realistic targets for future activities. Children are encouraged to correct any errors made and to reflect on comments left by teachers. The quality of marking is crucial and therefore teaching staff should use marking as both a diagnostic and summative tool. The school policy believes that it is best done through highlighting an objective in pink if achieved, green if not accomplished and boxed in pink if the pupil is striving towards achieving it. Additionally ticking is to be used to indicate correct answers, a small circle in green is to indicate to a child to attempt the question again (wherever possible) and a green ‘X’ is to specify an incorrect answer. ‘Even better if’ (EBI) statements are to be used to deepen learning or address pupil misunderstandings.

***Assessment***

Teachers make regular formative and summative assessments of each child’s progress and record these systematically. A record of each child’s attainment against key objectives for the appropriate year group is recorded through use of the tracking system Target Tracker and the testing schemes provided via Rising Stars.

**Short Term**

Children’s class work is assessed frequently through

* + Regular marking
	+ Analysing errors
	+ Questioning
	+ Discussion
	+ Plenaries

This is used to inform future planning and teaching. Lessons are adapted readily and short term planning is evaluated and often annotated in light of these assessments.

**Medium Term**

Termly assessments are to be carried out across the school using the assessment materials for each year group. These materials are to be used alongside judgments from class work to form a teacher assessment for each child. These judgements are then passed onto the senior leadership team to monitor whole school tracking.

**Long Term**

Year 2 and Year 6 are to complete SATs assessments every May. Years 3, 4 and 5 are to complete optional testing papers during summer term.

***Monitoring***

The maths leader regularly carries out monitoring of planning and book scrutinies, There is also the opportunity to observe lessons throughout the school. At the beginning of the year the leader carriers out an audit and produces a subject improvement plan outlining actions for the academic year. Termly reports are given to the governors indicating objectives achieved linked to the School Improvement Plan. Additionally, the maths leader is to frequently inspect data linked to the subject and report findings to the Senior Leadership Team.

***Home Learning & Parent Involvment***

Homework is used to provide opportunities for the children to practice and consolidate their skills and knowledge, to develop and extend their techniques and strategies and to prepare for future learning. Home Learning is set at the discretion of the class teacher.  Home learning may take form through use of topic projects. However, Children are expected to practise counting and times tables at home every week.

Parents are encouraged to share in children’s mathematical development wherever possible through:

* Open evenings
* Numeracy workshops
* After school maths clubs
* Maths information evenings
* Parents are provided with homework support packs and revision guides in order to enable them to assist their child at home.