



Town Junior School

Maths Policy

Adopted: January 2016

To be reviewed on: January 2017

Purpose of study (taken from New Mathematics Curriculum September 2014):

Mathematics is a creative and highly inter-connected discipline. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. 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.

Aims

The national curriculum for mathematics aims to ensure that all pupils:

- become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Lower Key stage 2

The principal focus of mathematics teaching in Years 3 and 4 is to ensure that children become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that children develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers. At this stage, children should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that children draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of year 4, children should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

Upper Key Stage 2

The principal focus of mathematics teaching in Years 5 and 6 is to ensure that children extend their understanding of the number system and place value to include larger integers. This should develop the connections that children make between multiplication and division with fractions, decimals, percentages and ratio.

At this stage, children should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, children are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that children classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of year 6, children should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.

The approach to calculation:

(Please see separate calculation policy)

Mental mathematics

Mental methods will be emphasised throughout the school. Children will be directly taught and provided with regular opportunities to develop the different skills involved. These skills include:

- Remembering number facts
- Using known facts to work out new facts
- Developing a repertoire of mental strategies
- Solving problems
- Weekly mental maths and arithmetic tests

Written work

Written recordings will be used to:

- Informally support a mental calculation
- Develop the skill of explaining the method used
- Help someone else follow the method or assess the work
- Practise writing and using the correct symbols and notation
- Help remember or practise the recall of number facts
- Carry out the working of a standard written method of calculation

The role of calculators

Calculators should not be used as a substitute for good written and mental arithmetic. They should therefore only be introduced near the end of key stage

2 to support children's' conceptual understanding and exploration of more complex number problems, if written and mental arithmetic are secure (taken from the new national Curriculum September 2014).

Calculators will be used in the school for two purposes:

- as a teaching aid in all year groups
- as a calculating aid in years 4, 5 and 6. Here children will be directly taught, and given opportunities to develop the technical skills involved along with the correct vocabulary, and also to make decisions about when it is best to use a calculator. Calculators are no longer allowed in the Key Stage 2 SATS but the skill of using them will still be taught as it is an important life skill.

Special Needs

The aim is to ensure that all children make progress and gain positively from each mathematics lesson. All teachers aim to:

- Plan lessons so that all children can be included.
- Use a range of resources effectively to allow access to whole class or group work
- Differentiate tasks or activities
- Organise the class and deploy staff to support group or individual needs

Targets for children with a special need in maths will be included on the group plan. Intervention groups will be put in place for children who need extra support.

Homework

Opportunities will be provided for children to practise and consolidate their skills and knowledge, to include times tables and to develop and extend their techniques and strategies. This may not always be written work, but it will be set weekly, in accordance with the school's homework policy.

Planning and Assessment

Teachers are responsible for maths planning, which will be completed on a weekly basis. This will outline the learning objectives, activities and strategies for differentiation for each lesson. Daily assessment of each lesson will help to plan/change future lessons.

Alongside daily assessments, children's attainment and progress will be regularly assessed, formally. This will aid teacher assessments and allow a picture of attainment and progress to be built overtime. Evidence in the children's books will also aid the teachers' final decision on progress and attainment.

Assessment data and regular analysis will be used to inform future learning and possible intervention strategies and will also be discussed with the receiving teacher at end of year transition.

Monitoring and review

The coordination and planning of the mathematics curriculum is the responsibility of the subject co-ordinator. They also:

- support colleagues in their teaching, keep colleagues informed about current developments in mathematics, and by providing a strategic lead and direction for the subject;
- utilises specially allocated regular management time to review and monitor the evidence of children's work.

The quality of teaching and learning in mathematics is monitored and evaluated by the SLT as part of the school's agreed cycle of monitoring and evaluation.

A named member of the school's governing body is briefed to oversee the teaching of numeracy. The numeracy governor meets regularly with the subject leader to review progress.

Ratified by governors January 2016 -----

Review

Ratified by governors January 2016 -----

Review Date January 2017 -----