

## THOMAS RUSSELL INFANTS' SCHOOL

### MATHEMATICS POLICY

As a result of the New National Curriculum the mathematics curriculum has been reviewed and adapted in light of these changes.

The main changes to mathematics include:

- Fluency and mastery is a key part of the new curriculum
- To develop our children's mathematical reasoning and appreciation for the importance of mathematics as a life skill.
- Having a deeper understanding of mathematics through using concrete, pictorial and abstract representations.

#### Rationale

Mathematical skills are essential to everyday life. Our aim is to maximise the individual potential of children's understanding and knowledge. Teachers encourage children to develop skills using an interactive approach, providing opportunities for them to experiment with their ideas, test the reasonableness of their answers and to question what they do not understand. We believe in developing the children's fluency and mastery of the mathematics curriculum.

#### Aims

We aim to:

- Develop a positive approach to the learning of mathematics by providing challenge, personal attainment and a sense of achievement;
- Have confidence to express, question and discuss ideas when undertaking activities;
- Develop skills of mental arithmetic in order to speed up calculations, check answers and foster an understanding of relationships in mathematics;
- Use a practical/investigative approach where possible, in order to strengthen understanding of patterns and relationships;
- Provide a range of pictorial, concrete and abstract representations in all year groups and for all abilities to enhance learning;
- Use mathematics to explore the environment/everyday situations and to communicate with others;
- Develop mathematical vocabulary and use equipment;
- Develop a sense of pride in the presentation of work.

## **Inclusion for all**

We respect the fact that children have -

- Different educational and behavioural needs and aspirations.
- Require different strategies for learning.
- Acquire, assimilate and communicate information at different rates.
- Need a range of different teaching approaches.

We embrace the principles of the Dyslexia Friendly Initiative at Thomas Russell Infants' and cater for dyslexia students at all times.

Teachers respond to children's needs by -

- Providing support for children who need help with communication, language and literacy.
- Planning to develop this understanding through the use of all available senses and experiences.
- Planning for children's full participation in learning and in physical and practical activities.
- Helping children to manage their behaviour and to take part in learning and in physical and practical activities.
- Helping individuals to manage their emotions, particularly trauma or stress and to take part in learning.

## **Teaching and learning style**

We use a variety of teaching and learning styles in mathematics. Our principal aim is to develop children's knowledge, skills, application and understanding. During our daily sessions we encourage children to talk about their learning by asking how they have solved a problem to reach their answer. They have the opportunity to use a wide range of resources such as Numicon, number lines, number squares, digit cards and small apparatus to support their work. Wherever possible we encourage the children to apply their learning to everyday situations.

In all classes children have a wide range of mathematical abilities. We recognise this fact and provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies - through differentiated group work, organising children to work in pairs or mixed ability groups on open-ended investigations or games, or by utilising adults with the class to support or extend groups of children. We ensure that work is matched to the needs of individual children. The opportunity for independent challenge is provided frequently.

## **Mathematics curriculum planning**

Mathematics is a core subject, therefore, Years One and Two follow the National Curriculum in mathematics. We carry out the curriculum planning in mathematics in three phases (long-term, medium-term and short-term).

Years One and Two use the National Curriculum and Staffordshire's yearly teaching programme to plan objectives across the year.

Year Groups work together to complete weekly plans, (short-term), for the teaching of mathematics. These weekly plans list the specific learning objectives for each session, and a brief outline of suggested learning activities /challenges. The class teacher uses these plans, to evaluate lessons. These plans are kept and reviewed by the subject leader.

Mathematics activities are planned so that they build on the children's prior learning. We ensure children of all abilities are given the opportunity to develop their skills, knowledge and understanding. Progression and challenge are an important aspect of our scheme of work, so that every child can make individual progress to achieve their full potential.

## **Assessment and recording**

We assess children's work in mathematics from three aspects (long term, medium term and short term). We make short term assessments which we use to help us adjust our daily plans. These short term assessments are closely matched to the teaching objectives.

We use the National Curriculum to make medium term assessments to measure progress against the key objectives, and to help us plan the next unit of work.

We make long term assessments towards the end of the school year and we use these to assess progress against school and national targets. We can then set targets for the next school year and make a summary of each child's progress before discussing it with parents. We pass this information on to the next teacher at the end of the year, so that they can plan for the new school year. We make end of key stage 1 assessments with the help of the end of year tests and teacher assessments. We use the national tests for children in Year 2.

## **The Early Years Foundation Stage**

We teach mathematics in our reception classes using the Mathematical Development aspects of the EYFS curriculum. As our Reception classes are part of the Early Years Foundation Stage we relate the mathematical aspects of the children's work to the objectives set out in the Early Years Guidance, which underpins the curriculum opportunities for children aged birth to five. All children participate in a variety of learning activities aimed at providing them with the skills needed to achieve the Early Learning Goal in both Number and Shape, Space and Measures. We give all the children ample opportunity to develop their understanding of number, measurement,

pattern, shape and space, through varied activities inside and outside, that allow them to enjoy, explore, practise and talk confidently about mathematics.

### **Contribution of mathematics to teaching in other curriculum areas**

#### **English**

The teaching of mathematics contributes significantly to children's understanding of English in our school by actively promoting the skills of reading, writing, speaking and listening. For example, we encourage children to read and interpret problems in order to identify the mathematics involved. The children are also improving their command of English when they explain and present their work to others. Younger children enjoy stories and rhyme that rely on counting and sequencing, while older children encounter mathematical vocabulary, graphs and charts when reading non-fiction texts.

#### **Personal, social and health education (PSHE) and Citizenship**

Mathematics contributes to the teaching of PSHE and Citizenship. The work that children do outside their normal lessons encourages independent study and helps them to become increasingly independent learners. The planned activities that children do within the classroom encourage them to work together and respect each other's views. We try to present older children with real-life situations in their work, such as, the spending of money.

#### **Spiritual, moral, social and cultural development**

The teaching of mathematics supports the social development of our children through the way we expect them to work with each other in lessons. We group children so that they work together, and we give them the chance to discuss their ideas and results.

#### **Mathematics and Computing**

Computing enhances the teaching of mathematics significantly, because computing is particularly useful for mathematical tasks. It also offers ways of impacting on learning which are not possible with conventional methods. Teachers can use software to present information visually, dynamically and interactively, so that children understand concepts more quickly. Younger children use computing to communicate results with appropriate mathematical symbols. Older children use it to produce graphs and tables when explaining their results, or when creating repeating patterns, such as tessellations. When working on control, children can use both standard and non-standard measures for distance and angle. They can also use simulations to identify patterns and relationships.

### **Home-school links**

As a school we recognise and value the contribution parents can make in their child's learning and encourage parents to be involved in their child's mathematical education. The home environment can provide a wealth of opportunities to mirror, reinforce and extend skills and

concepts introduced in school (see maths information for parents, maths new curriculum Y1 and Y2, useful maths vocabulary documents on the school website).

Homework is set in Years 1 and 2 on a fortnightly basis to reinforce concepts taught.

### **Resources**

There is a range of resources to support the teaching of mathematics across the school. All classrooms have appropriate resources and a wide range of appropriate small apparatus. Larger mathematical apparatus is available from the central storage area.

### **Monitoring and review**

Monitoring of the standards of children's work and of the quality of teaching in mathematics is the responsibility of the mathematics subject leader. The work of the mathematics subject leader also involves supporting colleagues in the teaching of mathematics, being informed about current developments in the subject and providing a strategic lead and direction for the subject in the school. The mathematics subject leader meets with the Headteachers each term to summarise findings and together evaluate the strengths and weaknesses in the subject and indicate areas for further improvement.

The quality of teaching and learning in mathematics is monitored and evaluated by the Headship team as part of the school's agreed cycle of lesson observations.

A named member of the school's governing body is briefed to oversee the teaching of mathematics. The mathematics governor meets regularly with the subject leader to review progress and keep up to date with mathematics teaching in our school.

Reviewed: May 2016

Next review due: May 2017