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**Riverside Junior School Maths Policy**

Rationale

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history’s most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary in most forms of employment. A high-quality mathematics education, therefore, provides a foundation for understanding the world, the ability to reason mathematically and a sense of enjoyment and curiosity about the subject.

Mathematics is a skill which involves confidence and competence with numbers and measures. It requires an understanding of the number system, a range of computational skills and an ability to solve number problems in a variety of ways in which information is gathered by counting and measuring and is presented in graphs, diagrams, charts and tables.

At Riverside Junior School Mathematics gives our children a way of coming to terms with their environment. Practical tasks and real-life problems can be approached from a mathematical point of view. Mathematics provides children with imaginative areas of exploration and study and gives them the materials upon which to exercise their mathematical skills. These skills are a necessary tool of everyday life. Mathematics should help children to develop an appreciation of, and enjoyment in, the subject itself; as well as a realisation of its role in other curriculum areas.

Intent

At Riverside, we aim to inspire all children to reach their full academic potential whilst developing an enthusiasm for mathematics. We aim to develop lively, enquiring minds encouraging pupils to become self-motivated, confident and capable in order to solve problems that will become an integral part of their future.

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 have conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems.
* Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
* 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.

Impact

At Riverside Junior School, we aim to sustain and develop in all children:

1. Confidence, understanding and enjoyment in mathematics.
2. An awareness of relationship and pattern, and how these can bring about a clearer understanding of a situation.
3. The ability to work systematically where the task requires a careful accurate approach, as well as the ability to show imagination, initiative and flexibility.
4. Independence of thought and action as well as the ability to co-operate within a group.
5. Develop problem solving skills and strategies.
6. The ability to use mathematics effectively as a tool in a wide variety of situations.
7. The sensible use of factual recall, mental and written methods and other mathematical aids.

Implementation

Children deserve:

* To be set appropriate learning challenges.
* To be taught well and be given the opportunity to learn in ways that maximise the chances of success.
* To have adults working with them to tackle the specific barriers to progress they face.

**Lower Key Stage 2**

The principal focus of mathematics teaching in lower Key Stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This ensures that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers. At this stage, pupils develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching ensures that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It ensures that they can use measuring instruments with accuracy and make connections between measure and number. By the end of Year 4, pupils are expected to have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work. This will further prepare them for the statutory end of year Multiplication Times Tables Check. Pupils are expected to read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

**Upper Key Stage 2**

The principal focus of mathematics teaching in upper Key Stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This develops the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio. At this stage, pupils 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, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures consolidates and extends knowledge developed in number. Teaching also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them. By the end of Year 6, pupils are expected to be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages. Pupils are expected read, spell and pronounce mathematical vocabulary correctly.

**Entitlement**

At Riverside, we teach mathematics to all children, whatever their ability or individual need. Through our mathematics teaching, we provide learning opportunities that enable all pupils to make good progress. Every child has an equal right to receive the maths curriculum in daily maths lessons of approximately one hour. All children are provided with equal access to the mathematics curriculum. We aim to provide suitable learning opportunities regardless of Special Educational needs, gender, ethnicity or home background.

**Lesson Organisation**

The curriculum is delivered by class teachers. All work is differentiated in order to give appropriate levels of work and children are taught in mixed ability groups. There is one form entry with each class teacher taking responsibility for their year. Planning is based upon the National Curriculum (2014). Programmes of Study should inform medium term plans using White Rose Maths overviews, teachers should then use this resource to then adapt and subsequently create their own weekly planning. Class teachers are responsible for the relevant provision of their own classes and individually develop weekly plans which give details of learning objectives and appropriate differentiated activities.

**Cross curricular**

Throughout the whole curriculum, opportunities to extend and promote Mathematics are sought. Within every Science topic, children will also develop their mathematical skills. This will help children appreciate how to Work Scientifically but also practise discrete mathematical skills. Nevertheless, the prime focus is on ensuring mathematical progress delivered discretely or otherwise.

**Differentiation**

In maths lessons, we use a variety of methods to ensure suitable learning opportunities for all pupils. We achieve this by:

* Setting investigative tasks which are open-ended and can have a variety of responses.
* Using differentiated challenge level tasks which pupils are either allowed to choose from or guided towards, as appropriate.
* Supporting groups of pupils during lessons.
* Providing resources of different complexity according to the ability of the pupil.
* All children will have their specific needs met through differentiated work in conjunction with targets. TA support time is planned for and provided in relation to identified needs for individuals and groups.

**Intervention**

Pupils who did not meet the age-related expectations from the previous year group will also be provided with additional support, such as through booster groups or adult support in lessons. Pupils requiring further challenge will be accommodated through Mastery with Greater Depth activities. We have multiple intervention programs running across school including ‘On Track Maths’ and ‘Catch Up Maths’ to identify and address any learning gaps following the pandemic.

**Assessment**

Teachers use a range of methods in order to monitor and assess pupil progress, including:

* High quality questioning and discussion during lessons.
* Observations made from working with focus groups.
* Self, peer and teacher assessment of written work.
* Weekly times tables practise.
* Summative end of unit tests are used to track progress in each year against standardised scores.
* Statutory end of year Multiplication Times Tables Check in Year 4.
* SATs – These take place in Years 2 and 6 and should be analysed to inform planning.

**Calculation Policy**

The calculation policy (see calculations/progression policy) has been updated in light of the new national curriculum programmes of study and discussion with class teachers.

**Monitoring and Evaluation**

The Curriculum leaders, alongside SLT, are responsible for monitoring and evaluating curriculum progress. This is done through book scrutiny, planning scrutiny, lesson observations, pupil interviews, staff discussions and audit of resources.