

## Curriculum Subject Statement: Maths

The principles for River Bank Primary school's curriculum design follows Dylan William's *Principled Curriculum Design* (2013), which are:

- *Balanced*
- *Rigorous*
- *Coherent*
- *Vertically Integrated*
- *Appropriate*
- *Focused*
- *Relevant*

Details of how these have been incorporated into our overall curriculum design can be found on the *River Bank Primary Curriculum Intent Statement document*.

In specificity to maths, some of the applications are further explained, below.

### **A 'Balanced' Maths Curriculum**

At River Bank Primary School this is evident in our curriculum design in the following ways:

1. All learning content for maths is taken from the National Curriculum programme of study and all statutory objectives are covered throughout KS1 and KS2.
2. Maths in our school follows the long-term plan from White Rose Maths. This long-term plan is broken down into specific topics (such as: place value, addition and subtraction and shape) to be covered throughout the year. Each of these topics is broken down into small steps when they are first introduced.

### **A 'Rigorous' Maths Curriculum**

At River Bank Primary School this is evident in our curriculum design in the following ways:

1. Maths is taught throughout the school from foundation through to year 6.
2. In maths, we have adopted principles from NCTEM maths mastery (fluency, variation, coherence, representation and structure and mathematical thinking) and implement aspects of these within every lesson across all year groups.
3. Using the NCETM maths mastery, in conjunction with White Rose Maths, children are encouraged to work with concrete and pictorial resources in order to be able to solve problems practically in addition to recognising patterns within a range of mathematical concepts.
4. PDRs for curriculum leaders often focus on the area for which they are leading, which helps to raise the expertise of leaders. The maths subject lead's PDR was to develop a calculation policy that would allow for consistency of methods taught and clarity on what knowledge has previously been taught and what will be taught in the future. Stem sentences was the focus of another PDR, detailing the importance of using stem sentences within all maths lessons.

### **A 'Coherent' Maths Curriculum**

At River Bank Primary School this is evident in our curriculum design in the following ways:

1. The maths curriculum follows White Rose Math's long-term plan. With each year group using White Rose Maths, this creates coherence throughout the school in terms of the methods and vocabulary that we use.

2. The curriculum is structured so that relevant topics are covered before the children progress. For example, year groups will begin with place value before moving on to addition and subtraction so that they have the knowledge needed to complete the next sequence. Another example would be the teaching of division before covering fractions to allow children to understand that fractions are equal parts and also help them understand how to find fractions of objects or amounts.
3. Foundation and years 1-3 are using the NCETM mastering number project. The aim of this is to develop a good number sense for the children so that they have the numeracy knowledge needed to tackle new mathematical topics.

### **A 'Vertically Integrated' Maths Curriculum**

At River Bank Primary School this is evident in our curriculum design in the following ways:

1. Maths material taught in each year group builds on knowledge taught earlier and feeds what is due to be taught in the future. An example of this would be: adding and subtracting one-digit numbers in year 1 will then allow children to progress to adding two-digit numbers in year 2, 3-digit numbers in year 3, 4-digit numbers in year 4 and numbers with more than 5 digits in years 5 and 6. Another example of this would be shape. In year 1, the children will recognise, name and sort 2D shapes. In year 3, they begin looking at perimeter and they need the prior knowledge of 2D shapes to do this. In year 5, children will need to work out the area of rectangles and use their knowledge of the properties of shapes to solve problems.
2. Sequences from White Rose Maths will be taught in small steps in order to reduce the cognitive load and help the children to remember more. Sequences from WRM will be broken down in to multiple lessons to ensure that the small steps can be achieved.
3. Maths lessons will feature a teacher turn and my turn element so that the independent tasks will closely match the teacher's input and allow the children to consolidate and apply their learning. The independent tasks will be given ensuring there is a slope of difficulty. This means that the questions will become gradually more challenging. Using the White Rose Maths scheme will allow teacher inputs to use consistent vocabulary to ensure consistency throughout the school.

### **An 'Appropriate' Maths Curriculum**

At River Bank Primary School this is evident in our curriculum design in the following ways:

1. Maths material is sequenced and taught from the National Curriculum on a 'year by year' basis.
2. Children are not set according to ability in maths.
3. In maths, independent learning tasks are set by the teachers using the 'slope of difficulty' approach. The use of a CPA (Concrete, Pictorial, Abstract) approach will be used to secure an understanding of the mathematical concepts. Within a place value unit, it is important that children understand the value of each digit within a number. In order to develop this understanding, base ten will be used so that the children see the different values clearly. Once they have this concrete understanding, pictorial resources such as place value charts and counters can be used to represent the values of digits. Finally, this process can move onto the abstract where the children will identify the value of digits just by reading the number written in numerals or words.

4. At the end of each topic from the White Rose Maths scheme, an end of unit test will be completed to check the understanding of the pupils. The results of these tests will be used in two ways. Firstly, they will assist the teacher with assessment. Secondly, they will inform future teaching – if there are common questions answered incorrectly, they will be addressed through feedback in following sessions. If it is specific children who have struggled, interventions will be put in place.

### **A 'Focused' Maths Curriculum**

At River Bank Primary School this is evident in our curriculum design in the following ways:

1. The maths long term plan comes from the White Rose Maths scheme which breaks down further into structured medium-term plans and individual lesson plans.
2. The essential maths arithmetic knowledge (specific for each year group) makes up much of the retrieval practice that takes place at the start of each session.
3. The Mastering Number project from NCETM is designed for EYFS, year 1 and year 2 and is organised into long, medium and even short-term plans. This is used by the teachers from EYFS to year 3 and it is also used as an intervention tool for teaching assistants in upper ks2 if children are lacking an understanding of number.

### **A 'Relevant' Maths Curriculum**

At River Bank Primary School this is evident in our curriculum design in the following ways:

1. The maths curriculum is designed to offer clear links between the maths that is taught and how it can be used outside of school. This includes: measurements, timetables and scaling. In addition to these topics, the children will be exposed to word problems that use real life contexts.