## Maths at Newington



Yearly overview for each year group: Following White Rose small steps















## Our planning towards mastery:

- We follow White Rose for our small step objectives these form our learning intentions.
- From this we use a range of resources, including White Rose and Power Maths to support our approach to maths: Fluency, Varied Fluency, Reasoning and Problem Solving.
- KS1 follow White Rose schemes of learning and KS2 use Power Maths Practice books (which are aligned to White Rose) to form the basis of their learning.
- Our plans are a step-by-step conceptual journey through the mathematics, engaging children in reasoning and the development of mathematical thinking.
- We use the **CPA approach** (Concrete Pictorial Abstract); children are taught through problem-solving contexts (linked to real-life situations). Pupils start exploring the maths area using 'concrete' methods. As understanding progresses, the context is then represented in a 'pictorial' state. Finally, 'abstract' refers to the more formal methods of calculation.
- We then create weekly plans, which include key questions, vocabulary and when possible stem sentences (to develop understanding, model and support children in using mathematical vocabulary).
- Our effective teachers choose the numbers or examples used in discussions and tasks carefully, thinking about which will create valuable learning experiences, valuable discussion and opportunities for children to develop their understanding.
- On the spot, in class interventions are encouraged to quickly address misconceptions.

## <u>Our lessons:</u>

- Maths starters are used to elicit recall and allow children to apply previous knowledge, which helps teachers assess understanding.
- Include daily opportunities for children to practice their arithmetic these are in the form of daily Tough Ten.
- Manipulatives and pictorial representations are chosen carefully to help build fluency and conceptual knowledge.
- Possible solutions are shared, analysed and discussed to deepen understanding.
- **Precise questioning** during lessons ensures children develop fluent proficiency and think deeply about concepts.
- Children are encouraged to use precise mathematical vocabulary and answer in full sentences. This is supported through stem sentences, which we have planned and modeled.
- Conceptual variation (Varied fluency) look at the concept through **different representations** and also look at examples and non-examples of concepts.
- Reasoning & Problem solving- Teachers ensure that all children have an opportunity to reason and problem solve in each lesson.

## How we support children:

- Differentiation happens through the support and intervention given to children, not in the topic taught.
- Support students are challenged through **more demanding problems to deepen** their knowledge of the same content. Differentiation by depth.

• Immediate formative assessment - **rapid intervention** should lead to less gaps to close. Rapid intervention - in the lesson (led by teacher), or that afternoon (by class TA). Questions and tasks within lessons are used as assessment opportunities.

All this leads towards when our children leave year 6. We aim that they...

- Will have a good understanding of numbers including times table and number facts.
- Will be fluent in calculations they will have efficient, accurate methods for calculating.
- Will be flexible, they will be able to choose from a range of approaches when approaching a problem.
- Will be able to make connections, they will be able to link learning and apply learning in a new situation.
- Can find patterns and relationships, they will be able to explain what is the same/different.
- Can reason If I can do ...., then I can do.....
- Can problem solve.