Approach to Maths

Our approach is underpinned by the Journey To Mastery model, where all students are fluent in the unfamiliar and can apply their skills in any new situation. Mastery of the curriculum requires that all pupils:

- *Use mathematical concepts, facts and procedures appropriately, flexibly and fluently;*
- *Recall key number facts with speed and accuracy and use them to calculate and work out unknown facts;*
- *Have sufficient depth of knowledge and understanding to reason and explain mathematical concepts and procedures and use them to solve a variety of problems.*

5 Minutes Maths

Each morning, all children complete a two part **5 Minutes Maths** sheet. The first part focuses on developing fluency in a particular arithmetic skill through the use of **intelligent practice**. The same skill is practised over the course of a week, becoming increasingly challenging but structured so as to enable all children to access the activity independently. The second part of the task focuses on a range of arithmetic questions that are linked to the year group's National Curriculum objectives.

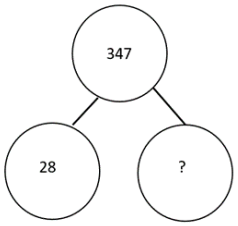
DNA task

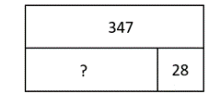
At the beginning of each Maths lesson, all children complete a **Do Now Activity** (DNA). The DNA revisits and embeds previous learning and consists of four core question strands: **last session; last week; last topic; and last year**. There is also space on the sheet to practise other key skills such as times tables, identifying shapes, and reading from clocks.

Starter activities

All lessons begin with a five minute starter. Starters can focus on **previous learning**, for example practising a previously taught arithmetic skill; they can be linked to **current learning**, or to the current learning objective; and they can be used as **pre-learning** for future objectives. In each instance, a key arithmetic skill should be identified with tasks that enable the children to practise this skill independently.

- If a **previously taught arithmetic skill** is being practised, the question should be represented in a variety of ways. For example 347 – 28 could be represented as:

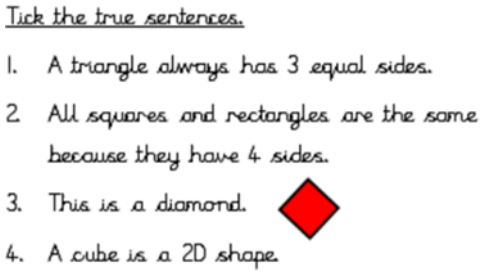




347 = 28 + ___

347
– 28

- If the starter is linked to **current learning**, it should be used as an initial small step, which can be used to develop learning later in the lesson. For example, when teaching time it is important that children know their number bonds to 60 and so this could be the starter activity; when teaching rounding to the nearest 100, children need to be able to quickly identify the surrounding hundreds and so a starter activity could be to find the proceeding and preceding hundred for a given number; or when teaching shape, the starter could be used to clarify vocabulary that is essential for later in the lesson, as in this example from Year 1:



- If the starter is being used as a **pre-learning activity** for future learning, it should be skill-focused, rather than the explicit teaching of a new concept. For example, if measurement is being taught in Key Stage 1, starters in the weeks leading up to this unit could focus on drawing and measuring lines using a ruler. Similarly, if measurement is being taught in Key Stage 2, then the starter activities in the upcoming weeks could involve estimating on number lines or using containers.
- Occasionally, starters can be used for **new learning** but the objectives should be as narrow as possible. Examples could include reading from clocks, or identifying shapes, where children might have a basic understanding but are unable to identify time intervals or name five sided polygons. In these examples, starters are used to teach and then practise specific learning points, which can then be revisited and practised frequently.

Main lesson

The Lancashire Grid is used to map out long and medium term objectives for each year group. The Grid is sequenced to ensure continuity between topics and enables topics to be revisited over the course of the academic year.

The Lancashire Grid provides objectives that form the basis of each year group's weekly plan. Teachers must then consider the small steps that are required for the children to meet each objective. Teachers are expected to make use of the **NCETM Curriculum Prioritisation** documents as within these are the key small steps for each objective along with accompanying slides and teacher guides.

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The NCETM Curriculum Prioritisation documents should be used alongside high quality resources from **White Rose Premium, I See Reasoning** and **Test Base** when teachers are designing tasks. Tasks should focus on developing fluency; variation of representation; and reasoning and problem solving.

At Moorside, we use a **Concrete, Pictorial, Abstract** approach to new learning in Maths. High quality manipulatives should initially be used to show the concept being taught and to expose the structure of the topic. Pictorial representations further embed understanding before the abstract method is introduced. By following this sequential approach to learning, it is expected that children will eventually be able to complete the mathematical problem without the representation.

In line with our Mastery approach to teaching Mathematics, children are taught in **mixed ability settings** which expose all children to high expectations. The use of **precise and accurate mathematical language** is modelled by the teacher to the pupils, and lessons consist of a well-considered balance between teacher input and children working. Teachers use **mini-plenaries** throughout lessons as Assessment for Learning opportunities, whilst **self and peer evaluation** allows pupils to measure their own progress. A **no opt-out approach** is used to secure pupil engagement and teacher questioning allows misconceptions to be addressed. **Learning walls** in classrooms are used to support teaching and learning and form a part of classroom practice.

Within all lessons, there are opportunities for children to **think mathematically, reason and problem solve**. Providing **challenge to all learners** throughout a Maths lesson is a crucial element of our approach to teaching Maths.