| **Year 2 Unit 6: Multiplication and division (3weeks)** |
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| **Key Objectives:** | **Representations:** |
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| **Introducing the multiplication symbol** * Use the multiplication symbol
* Understand that multiplication is commutative

Pupils begin by interpreting arrays and opportunities should be made for dialogue and to allow for the exploration of commutativity: ‘I see 4 groups of 5’ writing this as ‘5 + 5 + 5 + 5’ and ‘I see 5 groups of 4’ writing this as ‘4 + 4 + 4 + 4 + 4’ emphasising how ‘the whole is 20’ in both cases. Encourage pupils to start making sense of the abstract multiplication symbol by first activating prior knowledge of repeated addition, to allow a meaningful introduction to ‘equal groups’. Provide opportunities for pupils to create both concrete and pictorial representations of arrays and make connections to ‘part-whole’ representations by modelling the associated language.  |  |
| **Introducing the division symbol** * Use the division symbol when sharing
* Use the division symbol when grouping
* Explore representation of division
* Find related multiplication and division facts

When introducing division, mirror scenarios from lesson 2 to make connections to multiplication as the inverse operation. Continue describing arrays with part-whole language to emphasise these connections as well as the concept of ‘equal parts/groups’. This way, pupils can flexibly apply their knowledge of multiplication tables when solving division equations. Two division structures are explored: first ‘division as sharing’ then ‘division as grouping’ and pupils explore a mixture of word problems in both contexts. Pupils continue to ask themselves ‘what do we know? What do we not know?’ to interpret the word problem and represent the known and unknown values using bar models. Pupils apply their learning from earlier lessons in this unit during lesson 6 through interpreting arrays and engaging in dialogue to reason about related multiplication and division facts. |  |
| **Exploring the two, five and ten times tables** * Calculate multiples of two by skip counting
* Explore representations of multiplication problems
* Relate multiplying by two to doubling
* Calculate multiples of five by skip counting
* Calculate multiples of ten by skip counting

Understanding around repeated addition and skip counting in twos is connected to the multiplication table of two. Encourage pupils to make groups of two using concrete manipulatives (cubes / bead strings) to help make sense of the abstract spoken and written equations (e.g. ‘one group of 2’ = ‘one part with a value of 2’ = ‘1 × 2 = 2’). Make connections to prior learning in this unit when arrays and bar models are re-introduced to explore word problems in lesson 8. These representations are extended in lessons when pupils make connections between multiplying by two and doubling. Learning (including representations and language structures) is applied to the multiplication tables of five and ten in lessons 10 and 11.  |  |
| **Pattern seeking and problem solving** * Spot patterns in 2, 5 and 10 times tables
* Solve multiplication and division word problems

Pupils explore and compare the patterns in the multiplication tables 2, 5 and 10 on a 100 square. Encourage pupils to make conjectures around the properties of these multiplication tables (e.g. multiples of two are always even, multiples of five always have a 5 or a 0 in the ones digit) and then explore and test out their conjectures. Learning across the entire unit is applied in lesson 13 where pupils solve missing number multiplication and division equations to crack a code. The position of the missing number and the ‘is equal to’ sign has been purposefully varied to encourage deeper mathematical thinking. |  |