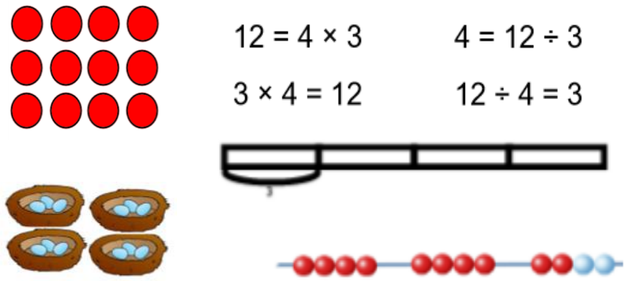
Year 3 Unit 12: Securing multiplication and division (1 week)

Provide opportunities for pupils to create and explain their own representations using concrete manipulatives.



Before you start…

- *How familiar are your pupils with:*
  - *the use of arrays to represent multiplication and division*
  - *the different calculations that one array can represent*
  - *commutativity of multiplication*
  - *the relationship between multiplication and division?*
- *Have pupils been exposed to times table facts for 6 and 8 via Maths Meetings?*

6 and 8 multiplication tables

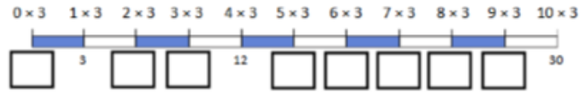
Pupils should use knowledge of their 3 and 4 times table to derive their 6 and 8 multiplication tables. Use a variety of representations to develop understanding, then develop ability to recall these facts fluently. Use Transitions and Do Nows throughout and following the unit to support pupils in recalling these facts.

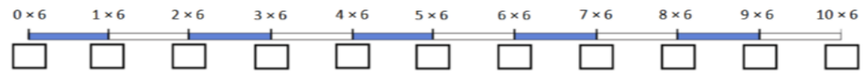
***Video:** Multiplication with a counting stick - Part 1*

***Video:** Multiplication with a counting stick - Part*

Also, see this article.

Constant reference to the link between multiplication and division will support pupils in using multiplication when solving division problems.





Deepening understanding of multiplication and division
L1 Understand and link different representations for multiplication and division

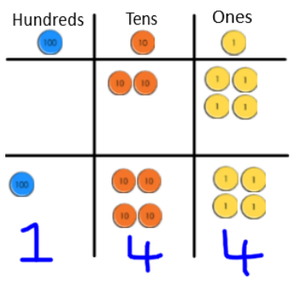
Pupils make connections between different representations of multiplication and division recognising that the same calculation can represent different situations and that different situations can be represented by the same calculation.

? *How can you ensure that pupils recognise that these representations can be used for both multiplication and division?*

Solving problems involving the 6 and 8 multiplication tables
L2 Represent and solve multiplication and division problems
L3 Represent and solve multi-step word problems

Pupils use bar models to represent multiplication and division problems that use facts from the six and eight multiplication tables. They begin with one step problems, then move on to multi-step problems.

? *How will you support pupils to connect the problem, the bar model and the calculation?*
? *Will you give time to looking at and discussing different pupil's bar models of the same problem?*

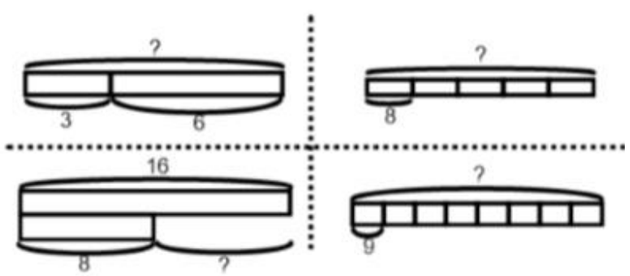


Importance of language

Make links between abstract calculations and the representations by carefully considering language choices. Model using these questions to support pupils in embedding this questioning process and internalising the language:

? *Do you start with the whole or with the parts?*
? *Is there more than one part?*
? *Are the parts of equal value?*

***Video:** Comparing bar models, Unit 12, Lesson 2*



Lesson 5 is the suggested time for a consolidation lesson to allow time for building with multiplying a 2-digit number by a 1-digit number.

Multiplying 2-digit numbers
L4 Multiply a 2-digit number by 6 or 8 (with regrouping)

Pupils consolidate multiplying a 2-digit number by a 1-digit number by partitioning from the spring term. They connect the abstract calculation with concrete and pictorial representations.

? *How will you ensure that pupils have an understanding of when and why they need to regroup?*
? *Consider which manipulatives and representations you will use. Is there benefit in continuing to use Dienes to strengthen place value understanding?*