



















Multiplication and Division: Factors and Products

<p>Aim: Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication, division and equals signs.</p> <p>DfE Ready-to-Progress Criteria: Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables (2MD-1)</p> <p>To understand and use the words 'factor' and 'product' when calculating.</p>	<p>Success Criteria: I know that both the number of groups and the group size are factors. I know the total number of objects is the product. I can write a multiplication calculation with two factors and a product. I can skip count to find the product of two factors.</p>	<p>Resources: Lesson Pack Dice</p>
	<p>Key/New Words: Multiplication expression, calculation, times, groups, factor, product, array, skip count, bar model, equals, commutative.</p>	<p>Preparation: Missing Factors and Products Board Game - per group Diving into Mastery Activity Cards - as required</p>

Prior Learning: It will be helpful if children have learnt about arrays and the commutative property of multiplication. This is covered in this lesson about

Learning Sequence

	<p>Remember It: Children write two multiplication expressions to match arrays, demonstrating their understanding of commutativity.</p>	
	<p>Multiplication Calculations: Children skip count in twos to find the total number of gloves. The Lesson Presentation shows how the groups of gloves can be represented in a bar model and then as a multiplication calculation. They compare the calculation to the expressions they have written in previous lessons and discuss what they notice. Ensure the children understand what each number in the calculation represents in the context of the example and what the equals symbol means. They should also be aware that the calculation can be written the other way round, starting with the total.</p>	
	<p>Factors and Products: Children are introduced to the terms 'factor' and 'product'. This vocabulary is applied to the context from the last section. Children learn that the number of groups and the group size are both factors. The total number of the objects is the product. Read the sentences from the slides together to embed the focus language in general terms. Can the children explain what a factor and product in a multiplication calculation is?</p>	
	<p>Practice Time: Children are introduced to new contexts through pictures. They work with a partner to draw a bar model and write multiplication calculations, skip counting to find the products. Children explain which numbers are the factors and which is the product. Can the children write multiplication calculations with two factors and a product?</p>	
	<p>Commutativity: Review the commutative property of multiplication using arrays and multiplication calculations. They notice that the factors can go either way round and that the product is the same regardless of the order of the factors.</p>	
	<p>Missing Numbers: Children apply what they have learnt to solve missing number problems. They use reasoning skills to explain how to find the answer.</p>	
	<p>Factors of 0 and 1: Children review prior learning about multiplying by zero and one. They say general statements about what happens when zero or one is a factor. If zero is a factor, the product is zero. If one is a factor, the product is equal to the other factor.</p>	
	<p>Find the Factors: Children work independently to complete calculations with missing factors using their knowledge of multiplying by zero or one.</p>	
	<p>Missing Factors and Product Board Game: Children work in a small group to play the board game. They take turns to roll a dice and move along the board. When they land on a space, they need to work out the missing factor or product. They should use skip counting to help them. They will also need to use the general statement they learnt about what happens when zero or one is a factor. Can the children skip count to find the product of two factors?</p>	



Diving into Mastery: Schools using a mastery approach may prefer to use the following as an alternative activity. These sheets might not necessarily be used in a linear way. Some children might begin at the 'Deeper' section and in fact, others may 'dive straight in' to the 'Deepest' section if they have already mastered the skill and are applying this to show their depth of understanding.



Children write general calculations using the terms 'factor' and 'product'. They write calculations to match pictures. They complete missing factors and products in calculations.



Children reason about which statements correctly describe a multiplication calculation. They write a calculation and draw an array to match a description.



Children find all the possible factors to make statements correct using the greater than, less than and equal symbols.

Exploreit

Skipit: Skip count in twos to play this

Countit: Practise skip counting in twos, fives and tens while doing ten star jumps.

Learnit: Children will find this visually exciting a useful tool for learning the vocabulary related to multiplication.