


















# Multiplication and Division: Equivalence

<b>Aim:</b> Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.  I can solve missing number problems to make the calculations on each side of the equals sign balance.	<b>Success Criteria:</b> I know what the equals sign means.  I can make the calculations on both sides of the equals sign equivalent.	<b>Resources:</b> Lesson Pack
	<b>Key/New Words:</b> Addition, subtraction, multiplication, division, square number, cube number, equals, equivalent, equivalence, powers.	<b>Preparation:</b> Differentiated <b>Equivalence Activity Sheets</b> - one per child

**Prior Learning:** It will be helpful if the children know their multiplication tables up to  $12 \times 12$  and have used square and cube numbers.

## Learning Sequence

	<b>Missing Numbers:</b> Children calculate the missing numbers in multiplication and division problems on the <b>Lesson Presentation</b> .	
	<b>See-Saw:</b> Use the examples on the <b>Lesson Presentation</b> to explain what the equals sign means and what equivalence is.	
	<b>Square and Cube Numbers:</b> Remind the children how to calculate squares and cubes.	
	<b>Powers:</b> Remind the children what powers are and how to calculate them.	
	<b>Balance:</b> The children use their knowledge of square numbers, cube numbers and powers to say whether the see-saw equations on the <b>Lesson Presentation</b> will balance.	
	<b>Equivalence:</b> Children complete differentiated <b>Equivalence Activity Sheets</b> , solving missing number problems to make the calculations on each side of the equals sign balance.  <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Children use their knowledge of square and cube numbers plus all four operations to solve missing number problems.</p> </div> <div style="text-align: center;">  <p>Children use their knowledge of square numbers, cube numbers and powers to solve missing number problems involving all four operations.</p> </div> <div style="text-align: center;">  <p>Children use their knowledge of square numbers, cube numbers and powers to solve missing number problems involving all four operations and larger numbers beyond <math>12 \times 12</math>.</p> </div> </div>	
	<b>Match Up:</b> The children match up loads for the see-saw to make it balance, solving missing number problems to make the calculations on each side of the equals sign balance.	

## Masterit

**Writeit:** Children write word problems to go with the calculations in **Match Up** on the **Lesson Presentation**.

**Playit:** Children roll two dice to generate a two-digit number and write it down followed by the equals sign. Then they come up with as many calculations which equal that number (involving at least one square or cube number) as they can. They can use all four operations. The first player who can't find a different way to make the number loses and must start again and generate the next two-digit number.