

# Number and Algebra: Fractions and Decimals:

## Decimal Place Value Puzzles

### Australian Curriculum

This lesson plan could be used to support the teaching and learning of the following Content Descriptions from the Australian Curriculum.

### Y6: Number and Algebra, Fractions and Decimals
















Select and apply efficient mental and written strategies and appropriate digital technologies to solve problems involving all four operations with whole numbers (ACMNA123)

Multiply and divide decimals by powers of 10 (ACMNA130)

<b>Aim:</b> To multiply and divide numbers by 10, 100 and 1000 to solve number puzzles.	<b>Success Criteria:</b> I can multiply and divide numbers by 10, 100 and 1000, giving answers up to three decimal places.  I can multiply and divide a sequence of numbers by 10, 100 or 1000 to solve a number problem.	<b>Preparation:</b> Tarsia Triangles Multiplying and Dividing by 10, 100 and 1000 Dominoes – one per group  Differentiated Decimal Place Value Puzzles Activity Sheets – one per child  Extra Challenge Activity Sheet – as required
<b>Key/New Words:</b> Decimal, fraction, tenth, hundredth, thousandth.	<b>Resources:</b> <a href="#">Lesson Pack</a>	<a href="#">Place Value Circle Game Question Cards</a> – one per class

**Prior Learning:** It will be helpful if children have experience identifying the value of digits in whole numbers and recognise tenths and hundredths in the context of money and measurement.

### Learning Sequence

	<b>Tarsia Triangles Dominoes Puzzles:</b> Give each group a copy of the <a href="#">Tarsia Triangles Multiplying and Dividing by 10, 100 and 1000 Dominoes</a> . The children work together to match the edges of the triangles together by multiplying and dividing the given decimals by 10, 100 or 1000.	
	<b>Multiplying/Dividing by 10, 100 and 1000:</b> Use the animated place value chart on the <a href="#">Lesson Presentation</a> to help the children visualise what is happening to the digits in decimal numbers when they are multiplied or divided by 10, 100 or 1000.	
	<b>Missing Number Puzzle:</b> Use the text and images displayed on the <a href="#">Lesson Presentation</a> to introduce the missing number puzzles involving multiplying and dividing decimals by 10, 100 or 1000. Work together as a class to calculate the missing number using reasoning.	
	<b>Partner Missing Number Puzzle:</b> Working with a partner, the children apply the learning from the previous slides to find the missing number in a new puzzle displayed on the <a href="#">Lesson Presentation</a> .	
	<b>Decimal Place Value Puzzles:</b> Children complete the differentiated <a href="#">Decimal Place Value Puzzles Activity Sheets</a> , to show they can multiply and divide numbers by 10, 100 and 1000, giving answers up to three decimal places. <b>Can the children multiply and divide a sequence of numbers by 10, 100 and 1000?</b>  <div style="display: flex; justify-content: space-around;"> <div data-bbox="244 1503 576 1671">            Calculate the answer to a calculation involving multiplying and dividing a sequence of numbers by 10, 100 or 1000.         </div> <div data-bbox="624 1503 956 1697">            Calculate the answer and missing numbers to calculations involving multiplying and dividing a sequence of numbers by 10, 100 or 1000.         </div> <div data-bbox="1003 1503 1335 1778">            Calculate the answer and missing numbers to more complex calculations involving multiplying and dividing a sequence of numbers by 10, 100 or 1000. An <a href="#">Extra Challenge Activity Sheet</a> is also included.         </div> </div>	
	<b>Circle Game:</b> Give each child a <a href="#">Place Value Circle Game Question Card</a> and sit or stand in a circle facing inwards. During each round, a number statement will be shown on the <a href="#">Lesson Presentation</a> . If the answer to the question on their card fits the statement, the children swap places.	

### Exploreit

**Quizit:** Ask children to write their own questions involving decimal place value and then host a class quiz.

**Linkit:** Link the use of decimal numbers to experiments in science involving measurements.