

























Multiplication and Division: Divide 4 Digits by 1 Digit (Without Exchanging)

<p>Aim: Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context.</p> <p>DfE Ready-to-Progress Criteria: Divide a number with up to 4 digits by a one-digit number using a formal written method, and interpret remainders appropriately for the context (5MD-4).</p> <p>To divide 4-digit numbers by 1-digit numbers.</p>	<p>Success Criteria: I can set out the written method of short division correctly. I begin with the place value column of the greatest value, when dividing. I can solve division calculations which involve zero as a place holder.</p>	<p>Resources: Lesson Pack Counters (optional)</p>
	<p>Key/New Words: Divide, division, dividend, divisor, digit, place value, inverse, multiplication.</p>	<p>Preparation: Differentiated Dividing 4-Digit Numbers (Without Exchanging) Activity Sheets – one per child Diving into Mastery Activity Sheets – as required Four-Digit Place Value Chart (optional)</p>

Prior Learning: It will be helpful if children know the [multiplication tables](#) up to 12×12 and know that multiplication is the inverse of division.

Learning Sequence

	<p>Remember It: This slide of the Lesson Presentation can be used as a static slide to allow children time to complete the task individually or in pairs to solve the calculation ladders. You may wish for children to use mini whiteboards to support their learning or request that the task be done mentally, recording only their answers to share in a class discussion.</p>	
	<p>Multiplication and Division: Using the prompts on the Lesson Presentation, elicit the fact that the bar models show repeated addition, multiplication and division statements. Highlight the fact that the bar models demonstrate that multiplication and division are inverse operations. This is a vital step in the children's understanding of the role of division in this lesson.</p>	
	<p>Dividend and Divisor: This slide in the Lesson Presentation will consolidate children's learning from year 4 and remind them of the importance of setting out the formal method for division correctly, highlighting the terms divisor and dividend.</p>	
	<p>Dividing 3-Digit Numbers: Use the prompts to support children's understanding of how we can use a place value chart to help with the formal method of division. The children may like to use their own Four-Digit Place Value Chart and counters to follow the lesson. Can the children set out the written method of short division correctly?</p>	
	<p>Dividing 4-Digit Numbers: Use Lesson Presentation to prompt children to use the knowledge they have acquired so far in the lesson to solve a division calculation with a four-digit number. Can they solve division calculations which involve zero as a place holder?</p>	
	<p>Short Division Practice: This slide of the Lesson Presentation is designed for children to work in pairs or small groups. It could be helpful here to provide children with mini whiteboards to support their learning. Allow children time to solve the calculations, before revealing the answers. Can the children set out the written method of short division correctly? Do they begin with the place value column of the greatest value? Can they solve division calculations which involve zero as a place holder?</p>	

	<p>Dividing 4-Digit Numbers (Without Exchanging): Using the differentiated Dividing 4-Digit Numbers (Without Exchanging) Activity Sheets, the children complete the tasks given, using place value charts to support and work systematically. It might be helpful to supply counters or blocks to help children who may need manipulatives to support their learning.</p> <div style="display: flex; justify-content: space-between;"> <div> <p> To support children working towards expected level, children are given several questions where they will have to identify numbers represented in the place value charts and complete the subsequent division, using the formal method. Children will be challenged on the second sheet, in which they will have to set out their own place value charts to aid them in completing the formal divisions.</p> </div> <div> <p> Children working at expected level will work through several questions where they must identify the number represented in the place value chart and complete the subsequent divisions, using the formal method. Children will be challenged on the second sheet, where they are given number cards in order to create their own division problems. The divisor of these questions is already supplied. This activity could be completed in pairs, with one child solving the question created by their peer.</p> </div> <div> <p> To challenge those working at greater depth, children are given a range of division questions, expressed using bar models. Children will use this to calculate the divisor and complete the subsequent division using the formal method. Children will be challenged on the second sheet, where they are given number cards in order to create their own division problems. The divisor of these questions is already supplied. This activity could be completed in pairs, with one child solving the question created by their peer.</p> </div> </div>	
	<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.</p> <div style="margin-top: 10px;"> <p> Children complete fluency activities related to dividing four digits by one digit.</p> <p> Children answer reasoning questions related to dividing four digits by one digit and explain their reasoning.</p> <p> Children work individually or collaboratively on problem-solving questions related to dividing four digits by one digit.</p> </div>	
	<p>Missing-Digit Division: Using this slide of the Lesson Presentation, children work in pairs to solve the missing-digit divisions. Encourage children to work systematically and give reasons for their thinking. Then, using the prompts, guide children in how to solve a missing digit division.</p>	

Explore it

Inverse it: Children can explore the relationship between multiplication and division by revisiting past work and doing the inverse operation of a multiplication to check their own answers.

Make it: Children will enjoy making visual representations of the division in the place value grid, using counters or even different types of pasta to represent the different values of the digits.