

Multiplication and Division: Leftovers

Aim: Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign. I can solve division problems with remainders.	Success Criteria: I can work out the calculation I need to do to answer the question. I can use a written calculation method for division to find the answer. I can explain what the remainder means and use this to answer the question correctly.	Resources: Lesson Pack Dice
	Key/New Words: Division, multiple, short division, regroup, remainders, dividend, divisor, quotient, sharing equally between.	Preparation: Differentiated Farm Leftovers Activity Sheets – one per child

Prior Learning: It will be helpful if the children can use the written methods of division. This lesson links closely with Y5 Written Methods for Division Lesson 4 – Radiant Remainders – and Lesson 5 – Troublesome Trains.

Learning Sequence

	Remainders: Children play in groups of three or four. They roll a dice and the first player to write down a division calculation with that remainder scores ten points. Any other correct calculations score five points. The game can be made more difficult by limiting the divisors the children can use or by rolling more than one dice, totalling them, then finding the remainder.				
	Interpreting Remainders: Use the examples on the Lesson Presentation to explain the different ways of interpreting remainders depending on the context. Consider whether to round up or round down and explain the importance of using the correct unit in the answer.				
	RICA: Introduce RICA as a strategy for answering word problems involving remainders.				
	Leftovers: Work through the examples on the Lesson Presentation together. Encourage the children to use the RICA steps to check that they have answered the original question correctly.				
	Farm Leftovers: Children complete differentiated Farm Leftovers Activity Sheets , solving division problems with remainders. <table style="width: 100%; margin-top: 10px;"> <tr> <td style="width: 33%; text-align: center;"> <p>Children calculate the amount of food left over for the pigs on the farms. The first problem involves calculating the leftovers (whole numbers) and sharing them between the pigs. The second problem involves sharing remainders. They then write their own leftover problem.</p> </td> <td style="width: 33%; text-align: center;"> <p>Children calculate the amount of food left over for the pigs on the farms and then write their own leftover problem. The problems involve sharing remainders.</p> </td> <td style="width: 33%; text-align: center;"> <p>Children calculate the amount of food left over for the pigs on the farms and write their own leftover problem. Long division is necessary to solve some of the problems.</p> </td> </tr> </table>	<p>Children calculate the amount of food left over for the pigs on the farms. The first problem involves calculating the leftovers (whole numbers) and sharing them between the pigs. The second problem involves sharing remainders. They then write their own leftover problem.</p>	<p>Children calculate the amount of food left over for the pigs on the farms and then write their own leftover problem. The problems involve sharing remainders.</p>	<p>Children calculate the amount of food left over for the pigs on the farms and write their own leftover problem. Long division is necessary to solve some of the problems.</p>	
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	What Went Wrong? Children discuss answers on the Lesson Presentation (which contain errors), work out where the errors were and correct them.				

Masterit

Fixit: Children check their own or their partner's answers. They try to find any errors and correct them (as modelled in **What Went Wrong?** on the [Lesson Presentation](#).)

Changeit: The children reword the questions from the [Farm Leftovers Activity Sheets](#) so that the remainder would need to be interpreted differently, e.g. they'd need to round up rather than round down to answer the question correctly.