

Unit 3 Multiplication and division

Five daily lessons

National
Numeracy Strategy

Year 5
Spring term

Unit Objectives Year 5

- Use factors (e.g. $8 \times 12 = 8 \times 4 \times 3$).
- Use closely related facts (e.g. multiply by 19 or 21 by multiplying by 20 and adjusting; develop the x12 table from the x10 and x2 tables).
- Partition (e.g. $47 \times 6 = (40 \times 6) + (7 \times 6)$).
- Use the relationship between multiplication and division.
- Use known facts and place value to multiply and divide mentally.
- **Use all four operations to solve simple word problems involving numbers and quantities. Explain methods and reasoning.**

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This unit plan is designed to guide your teaching.

You will need to adapt it to meet the needs of your class.

Resources needed to teach this unit:

- OHT 3.1
- OHT 3.2
- Resource sheet 3.1
- Activity sheet 3.1
- Pendulum
- OHP calculator
- Calculators
- Whiteboards

Year 4

Link Objectives

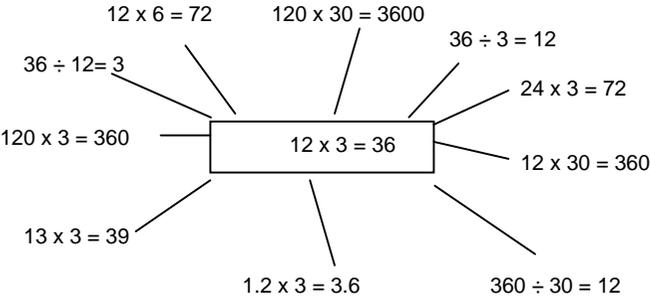
Year 6

- Use closely related facts (e.g. to multiply by 9 or 11, multiply by 10 and adjust; develop the x 6 table from the x 4 and x 2 tables).
- Partition (e.g. $25 \times 4 = (20 \times 4) + (5 \times 4)$).
- Use the relationship between multiplication and division.
- Use known number facts and place value to multiply and divide integers, including by 10 and then 100 (whole-number answers).
- Use all four operations to solve word problems involving numbers in 'real life', money and measures (including time), using one or more steps, including converting pounds to pence and metres to centimetres and vice versa.
- Explain methods and reasoning about numbers orally and in writing.

- Use factors (e.g. $35 \times 18 = 35 \times 6 \times 3$).
- Use closely related facts for example, multiply by 49 or 51 by multiplying by 50 and adjusting.
- Develop the x17 table by adding facts from the x10 and x 7 tables.
- Partition (e.g. $87 \times 6 = (80 \times 6) + (7 \times 6)$; $3.4 \times 3 = (3 \times 3) + (0.4 \times 3)$).
- Use the relationship between multiplication and division.
- Use known number facts and place value to consolidate mental multiplication and division.
- **Identify and use appropriate operations (including combinations of operations) to solve word problems involving numbers and quantities. Explain methods and reasoning.**

(Key objectives in bold)

Planning sheet	Day One	Unit 3 <i>Multiplication and division</i>	Term: <i>Spring</i>	Year Group: 5
Oral and Mental		Main Teaching		Plenary
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities/Focus Questions
<p>Count in steps of equal size.</p> <p>RESOURCES Pendulum</p>	<ul style="list-style-type: none"> Demonstrate counting in 2s using the pendulum to establish a steady rhythm. Establish with the children that they say the next number every time the pendulum reaches the right-hand side. <p>Count in twos, then in 20s; threes and then in 30s etc. Stop the pendulum at different points.</p> <p>Ask questions such as:</p> <div data-bbox="331 715 645 767" style="border: 1px solid black; padding: 2px;"> <p>Q How many 30s have we counted to reach 150?</p> </div> <p>Discuss answers.</p> <ul style="list-style-type: none"> Vary the response time by altering the length of the pendulum. <p>Move from counting on in 5s to 50s and 0.5s.</p> <p>Remind children that if they know $5 \times 7 = 35$ then they can work out quickly that $50 \times 7 = 350$ and $0.5 \times 7 = 3.5$</p>	<p>Use closely related facts: multiplying by multiples of ten and adjusting.</p> <p>VOCABULARY closely related fact</p> <p>RESOURCES Calculators</p>	<ul style="list-style-type: none"> Present the following problem to the class: Mr Buttons has 20 children in his class. He orders reward stickers for the term. He estimates that each child will earn fourteen stickers – one each week. How many stickers does he need to order? <div data-bbox="956 491 1738 518" style="border: 1px solid black; padding: 2px;"> <p>Q What calculation do we need to carry out to answer this question?</p> </div> <p>Establish that the calculation is 14×20 and ask for suggestions on how to do the calculation. Reinforce that $14 \times 2 = 28$ so $14 \times 20 = 280$. In the 28, the 20 has become 200, the 8 has become 80.</p> <ul style="list-style-type: none"> Record the answer on the board $14 \times 20 = 280$ stickers. <p>Having established this, discuss the calculation that you would perform if you found out that there 21 children in the class and not 20.</p> <div data-bbox="956 767 1738 794" style="border: 1px solid black; padding: 2px;"> <p>Q Should we start all over again?</p> </div> <p>Agree that we can use the answer to 14×20 and record: $14 \times 21 = (14 \times 20) + (14 \times 1) = 280 + 14 = 294$ stickers</p> <div data-bbox="956 895 1738 922" style="border: 1px solid black; padding: 2px;"> <p>Q What if there were 19 children present?</p> </div> <p>Agree that this would involve a subtraction and with the children's prompts record $14 \times 19 = (14 \times 20) - (14 \times 1) = 280 - 14 = 266$ stickers.</p> <p>Emphasise that it is easier to multiply by multiples of 10 and then adjust by adding or subtracting.</p> <ul style="list-style-type: none"> Ask the children to work in pairs and work out the answer in the same way for different numbers of children. Maintain the number of fourteen stickers. Vary the number of children in the class using 18, 22, 29, 31, 33 etc. Choose numbers close to multiples of ten. Ensure children's recording follows the model above. Encourage the children to build on from one example to the next. Ask children to present their calculations. Record their methods on the board and make links between the different examples 	<ul style="list-style-type: none"> Write on the board: $\square \times 41$ is the same as $(\square \times 40) + \square$ <p>Ask a child to choose a number between 15 and 30.</p> <ul style="list-style-type: none"> Put the number in each of the boxes. Give out calculators and ask the children to use their calculators to work out both calculations. Repeat for different numbers <div data-bbox="1774 692 2168 767" style="border: 1px solid black; padding: 2px;"> <p>Q Do you think both calculations will always be the same for any number we choose ?</p> </div> <ul style="list-style-type: none"> Ask the children first to explain their reasons to each other. Discuss children's responses and reasons <div data-bbox="1774 895 2168 943" style="border: 1px solid black; padding: 2px;"> <p>Q Can you give me a word problem for which this would be the solution?</p> </div> <p>Discuss the children's word problems and solutions.</p> <div data-bbox="1774 1066 2168 1437" style="border: 1px solid black; padding: 2px;"> <p>By the end of the lesson children should be able to:</p> <ul style="list-style-type: none"> Understand how to calculate in multiples of ten, and how to adjust for numbers close to multiples of ten; Multiply a number by 19 or 21, multiply it by 20 and add or subtract the number. <p>(Refer to supplement of examples, section 6, page 63.)</p> </div>

Planning sheet	Day Two	Unit 3 <i>Multiplication and division</i>	Term: <i>Spring</i>	Year Group: 5
Oral and Mental		Main Teaching		Plenary
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities/Focus Questions
<p>Count on in steps of equal size.</p> <p>VOCABULARY inverse operations doubling halving</p> <p>RESOURCES Pendulum</p>	<ul style="list-style-type: none"> Remind children of the rhythm set by the pendulum. Start counting from 0 in steps of 4. Stop at 28 say and ask: Q What is $28 \div 4$? <p>Remind children that if they know $7 \times 4 = 28$ they know $28 \div 4 = 7$ and $28 \div 7 = 4$, as multiplication and division are inverse operations.</p> <p>Repeat counting from 0 in steps of 5, 6 and 7.</p> <ul style="list-style-type: none"> Return to counting in 4s. <p>Q How does counting in 4s help us to count in 8s?</p> <p>Discuss suggestions and establish that the sequence of 8s is double the sequence of 4s. Tell the class that they are to count in 4s and whisper and shout alternative values so they are counting in 8s, <u>0</u>, (4), <u>8</u>, (12), <u>16</u>, (20), <u>24</u>, etc.</p> <p>Stop at 48 say and ask: Q What is $48 \div 8$?</p> <p>Remind children that if they know $48 \div 8 = 6$ they know $48 \div 4 = 12$. As 4 is half of 8 the answer doubles.</p> <p>Repeat using 3 and 6, 6 and 12, 7 and 14.</p>	<p>Use closely related facts for deriving multiplication and division facts.</p> <p>VOCABULARY closely related fact doubling inverses multiples</p>	<ul style="list-style-type: none"> On the centre of the board write: $12 \times 3 = 36$ <p>Invite the children to tell you a number sentence that can be derived from the one on the board. Gradually develop a web diagram that extends out from this sentence.</p>  <p>Discuss the different suggestions and ideas. Encourage developments based on doubling, multiplying by ten, adding or subtracting a multiple to develop a closely related fact, inverse division facts etc.</p> <ul style="list-style-type: none"> With the children working in pairs, ask them to perform a similar exercise. Agree the multiplication on which they base the exercise. Encourage the children to come up with the widest possible range of associated facts. Help children who are less confident to extend by adding and subtracting multiples. Get the children to exchange their diagrams and check each other's work. Confirm any disputed answers with the class. Ensure that the children can explain why they think any answer is incorrect and how to correct it. 	<p>Explain that over the last two days the children have been using many different strategies to extend their number skills and knowledge of number facts. Say you want to collect these strategies and record them. On the board write: $11 \times 4 = 44$</p> <p>Q What closely related facts can you tell me?</p> <p>Give children time to identify facts in pairs.</p> <p>Q Can you explain what you did to get the new facts?</p> <ul style="list-style-type: none"> Collect the different explanations and help them to classify their strategies with an example. Using the children's prompts draw together: Adding and subtracting – $12 \times 4 = 48$, $11 \times 4 = 44$, $11 \times 5 = 55$... Making multiples of 10 – $11 \times 40 = 440$, $110 \times 4 = 440$, $110 \times 40 = 4400$. Doubling – $11 \times 8 = 88$, $22 \times 4 = 88$, $11 \times 16 = 176$... Making decimals – $1.1 \times 4 = 4.4$, $11 \times 0.4 = 4.4$... Finding inverses – $44 \div 4 = 11$, $44 \div 11 = 4$, $176 \div 16 = 11$... Ask children to write the five strategies as headings in their books. <p>HOMEWORK – Tell the children you want them to start with the statement $13 \times 6 = 78$. Write four closely related number facts under each of the five headings.</p> <p>By the end of the lesson children should be able to:</p> <ul style="list-style-type: none"> Use related facts; Halve an even number in the calculation find the product, then double it; Answer questions like: given that $14 \times 11 = 154$ what is 11×14, $154 \div 11$ or 140×11? <p>(Refer to supplement of examples, section 6, pages 61 and 63.)</p>

Planning sheet	Day Three (page 1 of 2)	Unit 3 <i>Multiplication and division</i>	Term: <i>Spring</i>	Year Group: 5						
Oral and Mental		Main Teaching		Plenary						
Objectives and vocabulary	Teaching Activities	Objectives and vocabulary	Teaching Activities	Teaching Activities/Focus Questions						
<p>Count on and back in steps of equal size.</p> <p>Identify related number facts and calculate differences.</p> <p>VOCABULARY positive negative difference</p> <p>RESOURCES Pendulum</p>	<ul style="list-style-type: none"> Start the pendulum and get the class to count forward from 0 in steps of 7. Stop at 56 say and ask: <div data-bbox="309 459 624 491" style="border: 1px solid black; padding: 2px;">Q What is $56 \div 7$?</div> <p>Record answer on the board $56 \div 7 = 8$.</p> <div data-bbox="309 587 624 667" style="border: 1px solid black; padding: 2px;">Q What other multiplication and division facts do we know?</div> <p>Record $7 \times 8 = 56$, $8 \times 7 = 56$, $56 \div 8 = 7$. Continue count, stop and record facts.</p> Start at 36 and count back in 3s. Stop and collect related facts. Stop at 0. <div data-bbox="309 938 624 994" style="border: 1px solid black; padding: 2px;">Q What will the next number be?</div> <p>Remind children of negative three and write -3. Continue the count to -12.</p> <div data-bbox="309 1114 624 1169" style="border: 1px solid black; padding: 2px;">Q How far away from 6 is -12?</div> <p>Establish the gap is 18. Remind children of the word difference and write: the difference between -12 and 6 is 18. Draw a number line to confirm the answer.</p> Start the count from 0 in steps of 4. Stop at positive numbers to generate facts and at negative numbers to identify differences. 	<p>Use closely related facts (partitioning) and factors – when completing a mental multiplication.</p> <p>VOCABULARY partition factor</p>	<ul style="list-style-type: none"> Write on the board: 15×12 <p>In small groups, ask children to use two methods to work this out. Collect and discuss the children's answers and methods.</p> <div data-bbox="880 459 1720 491" style="border: 1px solid black; padding: 2px;">Q Can we rewrite 15×12 as $(15 \times 10) + (15 \times 2)$?</div> <p>Remind the children that we have partitioned the 12 into 10 and 2 and multiplied each by 15.</p> <div data-bbox="880 587 1720 619" style="border: 1px solid black; padding: 2px;">Q Can we do this in another way?</div> <p>Remind children that $15 \times 12 = 12 \times 15$ and we can partition the 15 and write: $12 \times 15 = (12 \times 10) + (12 \times 5)$.</p> <p>Confirm that both ways give 180.</p> Remind children of the earlier work using factors to multiply. Ask the children for the factor pairs for 15 and 12. Record the factors on the board: <table style="margin-left: 20px;"> <tr> <td>$15 = 1 \times 15$</td> <td>$12 = 1 \times 12$</td> </tr> <tr> <td>$15 = 3 \times 5$</td> <td>$12 = 3 \times 4$</td> </tr> <tr> <td></td> <td>$12 = 2 \times 6$</td> </tr> </table> <div data-bbox="880 914 1720 946" style="border: 1px solid black; padding: 2px;">Q How can I write the calculation 15×12 using the information on the board?</div> <ul style="list-style-type: none"> Establish that the calculation could be expressed different ways using the factors of each number. Demonstrate this by writing on the board $15 \times 12 = 1 \times 15 \times 3 \times 4$ $= 1 \times 15 \times 2 \times 6$ <div data-bbox="880 1090 1720 1121" style="border: 1px solid black; padding: 2px;">Q Are there any more?</div> <p>Collect and record any the children offer.</p> <ul style="list-style-type: none"> Ask the children to select one of the number statements on the board and work out the answer using the factors. <div data-bbox="880 1265 1720 1297" style="border: 1px solid black; padding: 2px;">Q Have we all got the same answer?</div> <p>Confirm that each expression written on the board gives the same answer, 180.</p>	$15 = 1 \times 15$	$12 = 1 \times 12$	$15 = 3 \times 5$	$12 = 3 \times 4$		$12 = 2 \times 6$	<ul style="list-style-type: none"> Write on the board: 25×32. <p>Ask the children to explain how they would work out this calculation by partitioning and how they would work it out using factors</p> <div data-bbox="1751 515 2166 547" style="border: 1px solid black; padding: 2px;">Q Which method do you prefer?</div> <div data-bbox="1751 563 2166 619" style="border: 1px solid black; padding: 2px;">Q Would you use the same method every time?</div> <p>Establish with the children that the partitioning method is reliable and works for any pair of numbers. The factors method works well when one of the numbers is a multiple of 5.</p> <p>HOMEWORK – Ask children to work out 15×22 and 15×18 using the adjusting, partitioning and factors methods they have learned this week.</p>
$15 = 1 \times 15$	$12 = 1 \times 12$									
$15 = 3 \times 5$	$12 = 3 \times 4$									
	$12 = 2 \times 6$									

Planning sheet	Day Three (page 2 of 2)	Unit 3 <i>Multiplication and division</i>	Term: <i>Spring</i>	Year Group: 5
Oral and Mental		Main Teaching		Plenary
Objectives and vocabulary	Teaching Activities	Objectives and vocabulary	Teaching Activities	Teaching Activities/Focus Questions
			<ul style="list-style-type: none"> Write on the board: 35×8. <p>Ask children for factor pairs for 35 and 15. Record on the board. Write: $35 \times 8 = 5 \times 7 \times 4 \times 2$.</p> <p>Q Can we rearrange the numbers to make the calculation easier?</p> <p>Establish that a multiplication can be rearranged and the answer is not affected. Write: $5 \times 2 \times 4 \times 7 = 10 \times 28 = 280$.</p> <ul style="list-style-type: none"> Say that replacing each number in a multiplication calculation with its factors can often make a calculation easier. Write on the board 14×15. <p>Q How can we write this calculation using the factors of 14 and 15?</p> <p>Establish that the calculation could be written as $2 \times 7 \times 3 \times 5$.</p> <p>Q How does this help us carry out this calculation mentally?</p> <p>Collect children's answer and record: $2 \times 5 \times 3 \times 7 = 10 \times 21 = 210$.</p> <ul style="list-style-type: none"> Ask the children to work in pairs on multiplications that can be made easier by rewriting the numbers using factors. e.g. 15×16, 15×24, 15×26, 45×6, 45×12, 45×18, 35×12, 35×16, 35×18. <p>Q What are important factors to look for?</p> <p>Establish that 2 and 5 are important factors as multiplying by 2 and then 5 is equivalent to multiplying by 10.</p>	<p>By the end of the lesson children should be able to:</p> <ul style="list-style-type: none"> Use factors for example: 15×6 $15 \times 3 = 45$ $45 \times 2 = 90$ $15 \times 6 = 90$. <p>(Refer to supplement of examples, section 6, page 61.)</p>

Planning sheet	Day Four	Unit 3 <i>Multiplication and division</i>	Term: <i>Spring</i>	Year Group: 5
Oral and Mental		Main Teaching		Plenary
Objectives and vocabulary	Teaching Activities	Objectives and vocabulary	Teaching Activities	Teaching Activities/Focus Questions
<p>Round numbers, including decimals taking account of the context.</p> <p>VOCABULARY rounding round up round down to the nearest</p> <p>RESOURCES OHP calculator Calculators Whiteboards</p>	<ul style="list-style-type: none"> Remind children about the process of rounding numbers. Ask questions such as: <ul style="list-style-type: none"> Q What is the £3.85 to the nearest pound? What is 17.22 m to the nearest metre? What is 9.499 l to the nearest litre, 0.38 kg to the nearest kilogram? <p>Collect and discuss answers.</p> Say: 'the bill for a meal was £81.13 for twelve people. They agree to share it equally. How much should they all contribute to the cost?' <ul style="list-style-type: none"> Q What calculation should we carry out? <p>Establish that calculation will be $81.13 \div 12$ and show the display on the OHP calculator is 6.7608333.</p> Q What does this answer mean? <p>Ensure children can interpret the display.</p> Q How much should each person pay? <p>Establish with the children that the amount to the nearest penny is £6.76.</p> Q If each person pays £6.76, will this cover the bill? <p>Use the OHP calculator to show that $£6.76 \times 12 = £81.12$.</p> Q If they round £6.76 to the nearest pound, how much is the tip? <p>Collect children's answers. Confirm that $£7 \times 12 = £84$ and the tip is £2.87.</p> Set more calculator based divisions. Ask the children to round each amount to a given unit, taking account of the context and write their answers on their whiteboards. Collect and discuss answers. 	<p>Use all four operations to solve simple word problems involving numbers and quantities.</p> <p>Explain methods and reasoning orally and in writing.</p> <p>VOCABULARY per person per person per night</p> <p>RESOURCES OHT 3.1 Resource sheet 3.1 Calculators</p>	<ul style="list-style-type: none"> Collect the children's answers to the homework. Compare the three methods and discuss which the children prefer and why. Give out Resource sheet 3.1. Explain to the children that on the sheet are pieces of information and questions. Ask the children to read the Initial Information boxes and the one-step questions. <ul style="list-style-type: none"> Q What information will you use to answer the three one-step questions? <p>Confirm that the information in the Initial Information boxes is the only information needed.</p> Ask the children to work in pairs to answer questions 1, 2 and 3. <p>Collect children's answers and discuss the operation used for each calculation. Establish that only one calculation or step was involved.</p> Ask the children to consider questions 4, 5 and 6. <ul style="list-style-type: none"> Q Can you answer these questions using the Initial Information? <p>Establish that more information is needed and that this is in the Further Information boxes.</p> Q How are these questions different the first three questions? <p>Establish that those questions required two calculations or steps.</p> <p>Collect children's answers and discuss their strategies. Correct any errors or misunderstandings.</p> 	<ul style="list-style-type: none"> Show the information in OHT 3.1. Discuss the information with the children. Show questions 1 and 2. <ul style="list-style-type: none"> Q Are these one-step or two-step questions? <p>Agree that as 5 kg is double 2.5 kg, only one calculation is needed. Record on the board: 5 kg of potatoes cost $2 \times £1.35 = £2.70$. Establish that 5 is not a multiple of 3. In this case we need to find the cost of 1 litre, then 5 litres. Two calculations are needed. Record: 1 litre of milk costs $£1.38 \div 3 =$ 5 litres of milk cost $£ \quad \times 5 =$ Ask children to use their calculators to find the answers and record these on the board.</p> Show questions 3 and 4 and repeat as above. Work out the cost of 0.5 kg of potatoes and multiply by 18. Emphasise that when the numbers are factors we can scale up or down using one calculation. When they are not we scale down then up using two calculations. Show question 5 and ask children to find the answer. Establish this is a three-step question, two scaling ups multiplying by 4 and 2 then adding the answers together. Collect and record the answer. <p>By the end of the lesson children should be able to:</p> <ul style="list-style-type: none"> Solve 'story' problems about numbers in real life; Explain and record using signs and symbols how the problem was solved. <p>(Refer to supplement of examples, section 6, pages 82-89)</p>

Planning sheet	Day Five		Unit 3 <i>Multiplication and division</i>	Term: Spring	Year Group: 5
Oral and Mental			Main Teaching		Plenary
Objectives and vocabulary	Teaching Activities	Objectives and vocabulary	Teaching Activities		Teaching Activities/Focus Questions
<p>Recall multiplication and division facts.</p> <p>Find remainders after division.</p> <p>RESOURCES Whiteboards</p>	<ul style="list-style-type: none"> On the board write: $24 \div 6 =$ Ask children to write the answer on their whiteboards. <p>Q What related multiplication and division facts can we write?</p> <p>Collect and discuss answers.</p> <ul style="list-style-type: none"> On the board write: $26 \div 4 =$ <p>Q How do we write the answer to this division?</p> <p>Agree that we know $24 \div 4 = 6$ from the previous calculation facts. This time there are 2 remaining. Record on the board: $26 \div 4 = 6R2$ Establish and record: $26 \div 6 = 4R2$; $26 = 6 \times 4 + 2$; $26 = 4 \times 6 + 2$.</p> <ul style="list-style-type: none"> On the board write: $33 \div 5 =$ Ask the children to work in pairs. They are to do this calculation, derive the three associated facts and record these on their whiteboards. Collect answers and discuss. Repeat mixing up divisions with and without remainders. 	<p>Use all four operations to solve simple word problems involving numbers and quantities.</p> <p>Explain methods and reasoning orally and in writing.</p> <p>VOCABULARY itinerary</p> <p>RESOURCES Calculators OHT 3.2 Activity sheet 3.1</p>	<ul style="list-style-type: none"> Give out Activity sheet 3.1 and display OHT 3.2. Explain that two Year 5 children are going to cook a special birthday meal for their family of 8. There are three courses. Eight people want soup and six people want the macaroni cheese. Everyone wants the pudding. Point out how many people each recipe serves. The two children need to buy the right amount of ingredients to make enough food for everyone. <p>Q How can we help the children?</p> <p>Remind children how to scale down/up. Ask them to explain how they might find the quantities for each recipe. Tell children that in the space provided on the Activity sheet they are to record their calculations and answers with the units of measure. They can use a calculator, but they must still record the calculations.</p> <p>Arrange children in small groups to complete the task.</p> <ul style="list-style-type: none"> Collect answers and discuss the children's calculations. <p>Q When did you use a calculator? Did you use it for any of the soup calculations?</p> <p>Reinforce the idea that when doubling the numbers involved in this recipe, a calculator should not be required.</p> <ul style="list-style-type: none"> Record the answers, with the units, on OHT 3.2. Ask children to convert some of the quantities e.g. <p>Q How else could we write 600 g of potatoes?</p> <ul style="list-style-type: none"> Once all the quantities have been recorded ask children to combine the ingredients e.g. <p>Q How much flour is needed to cook the meal?</p> <ul style="list-style-type: none"> Use the recorded information to ask a range of questions such as: <p>Q If we can only buy potatoes and flour in kilograms packs, how much of each has to be purchased? What quantities will be left over?</p> <p>Collect and discuss answers and children's suggestions.</p>		<ul style="list-style-type: none"> On the board write: a packet of crisps cost 55p a bag of 6 oranges cost £1.25 Remind the children that throughout the week they have been calculating with and without calculators. They should always ask themselves: 'can I do this calculation in my head?' Say that you are going to ask them some questions. You want them in pairs, to quickly write down how they would do the calculation without a calculator, then do it. Ask: <p>Q What would 10 packets of crisps cost?</p> <p>Agree the answer is £5.50 and can be done mentally.</p> <p>Q What would 9 packets of crisps cost?</p> <p>Agree this is one less than 10 so we subtract 55p from £5.50 mentally or with some information recorded to help.</p> <p>Q What would 18 packets of crisps cost?</p> <p>Compare partitioning, adjusting and the factor methods. Each needs some form of recording.</p> <ul style="list-style-type: none"> This time they can use a calculator. They still have to write down the calculation and then do it. <p>Q What would 12 oranges cost?</p> <p>This is a mental calculation, double £1.25.</p> <p>Q What would 15 oranges cost?</p> <p>Agree on the calculations needed and how this can be done using a calculator. Remind children of the need to round the answer at the end of the calculation.</p> <p>By the end of the lesson children should be able to:</p> <ul style="list-style-type: none"> Solve 'story' problems involving quantities and units of measure; Use a mental, written or calculator method to solve problems. <p>(Refer to supplement of examples, section 6, pages 83 to 89.)</p>

Information

**2.5 kg of potatoes
cost £1.35**

**3 litres of milk
cost £1.38**

**1. How much would
5 kg of potatoes
cost?**

**2. How much would
5 litres of milk cost?**

**3. How much would
9 kg of potatoes
cost?**

**4. How much would
9 litres of milk cost?**

**5. How much would 10 kg of
potatoes and 6 litres of milk
cost altogether?**

Leek and Potato Soup (serves 4)

60 g butter	
2 leeks	
2 onions	
300 g potatoes	
800 ml milk	
1 stock cube	

Macaroni Cheese (serves 4)

400 g macaroni	
20 g butter	
220 g mushrooms	
600 ml milk	
180 g cheese	
2 stock cubes	
50 g flour	

Sticky Toffee Pudding (serves 6)

120 g chopped nuts	
240 g butter	
150 g brown sugar	
60 ml cream	
30 ml lemon juice	
3 eggs	
180 g flour	

Initial Information

Eggs £2.16 for 24

Balloons 23p each

Chocolate bars 85p for 5

Further Information

Balloons come in
packets of 6

Julie has 17 friends at her
party

Omelettes contain 3 eggs

One-step questions

1. How much would one egg
cost?

2. How much would eight
balloons cost?

3. How much would 20
chocolate bars cost?

Two-step questions

4. How many packets of balloons can you
buy for £10?

5. How much would it cost to make six
omelettes?

6. How much does it cost to give each of Julie's
friends and Julie a chocolate bar?
