

Unit 10
Multiplication and division 2

Five daily lessons

National
Numeracy Strategy

Year 4
Summer term

Unit Objectives
Year 4

- Develop and refine written methods for $TU \times U$, $TU \div U$.
- Begin to know: multiplication facts for 6, 7, 8 and 9 times tables.
- **Derive quickly division facts to 2, 3, 4, 5 and 10 times tables.**
- Use known number facts and place value to multiply and divide integers, including by 10 and then 100 (whole-number answers).

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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:

- Resource sheet 10.1
- OHT 10.1
- Self-assessment sheet 10.1
- Homework problem: Teacher guidance
- Whiteboards
- Number fans
- Large 2–10 digit cards
- Counting stick
- 18 cubes in a bag
- Place value chart
- Dice 10–90
- Counters

Year 3

Link Objectives

Year 5

- **Know by heart multiplication facts for the 2, 5 and 10 times tables.** Begin to know the 3 and 4 times tables.
- Derive quickly: division facts corresponding to the 2, 5 and 10 times tables.
- Use known number facts and place value to carry out mentally simple multiplications and divisions.
- Say or write a division statement corresponding to a given multiplication statement.

- **Extend written methods to: short multiplication of HTU or U.t by U; long multiplication of TU by TU; short division of HTU by U** (with integer remainder).
- **Know by heart all multiplication facts up to 10×10 .**
- Continue to derive quickly division facts corresponding to tables up to 10×10 .

(Key objectives in bold)

Planning sheet	Day One	Unit 10 <i>Multiplication and division 2</i>	Term: <i>Summer</i>	Year Group: <i>4</i>
Oral and Mental		Main Teaching		Plenary
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities/Focus Questions
<p>Derive quickly division facts corresponding to the 2, 3, 4, 5 and 10 times tables.</p> <p>VOCABULARY division facts</p> <p>RESOURCES Number fans</p>	<ul style="list-style-type: none"> Get the class to recite the 2, 3, 4, 5 and 10 times tables. Stop at various points, e.g. $8 \times 4 = 32$. <div data-bbox="315 371 669 440" style="border: 1px solid black; padding: 2px; margin: 5px 0;"> Q $8 \times 4 = 32$, what other facts can we make? </div> <p>Make sure the following facts are included:</p> $4 \times 8 = 32$ $32 \div 4 = 8$ $32 \div 8 = 4$ <p>Collect answers and record them on the board. Make sure the children can read the facts correctly.</p> Carry out some quick fire division calculations covering each of the 2, 3, 4, 5 and 10 times tables where the children show their answers using number fans. Reinforce the relationship between division and multiplication. <p>Involve the class by asking one child to ask another child a question using multiplication and division facts, e.g.</p> <div data-bbox="315 970 669 1038" style="border: 1px solid black; padding: 2px; margin: 5px 0;"> Q If you know $4 \times 9 = 36$, what else do you know? </div> <div data-bbox="315 1054 669 1123" style="border: 1px solid black; padding: 2px; margin: 5px 0;"> Q If you know $40 \div 5 = 8$, what else do you know? </div>	<p>Use known number facts and place value to multiply and divide integers, including by 10 and then 100 (whole number answers).</p> <p>RESOURCES Place value chart Resource sheet 10.1 Self-assessment sheet 10.1 Dice 10–90 Counters</p>	<ul style="list-style-type: none"> Write 10 on the board. <div data-bbox="1005 328 1794 371" style="border: 1px solid black; padding: 2px; margin: 5px 0;"> Q What number is 10 times bigger than 10? </div> <div data-bbox="1005 400 1794 443" style="border: 1px solid black; padding: 2px; margin: 5px 0;"> Q What number is 100 times bigger than 10? </div> <div data-bbox="1005 472 1794 515" style="border: 1px solid black; padding: 2px; margin: 5px 0;"> Q How would we record those operations? </div> <p>Write 1000 on the board.</p> <div data-bbox="1005 568 1794 611" style="border: 1px solid black; padding: 2px; margin: 5px 0;"> Q What number is 10 times smaller than 1000? </div> <div data-bbox="1005 639 1794 683" style="border: 1px solid black; padding: 2px; margin: 5px 0;"> Q What number is 100 times smaller than 1000? </div> <div data-bbox="1005 711 1794 754" style="border: 1px solid black; padding: 2px; margin: 5px 0;"> Q How would you record those operations? </div> Using a place value chart demonstrate what happens when you multiply and divide by 10 and 100. Give the children quick fire questions, multiplying and dividing by 10 and 100. The children can respond with number fans. Give the children Resource sheet 10.1 and 10–90 dice. The children play the game in pairs. The aim of the game is to cover five numbers. The first child rolls the dice and either multiplies or divides by 10 or 100 and covers the number on the board. 	<ul style="list-style-type: none"> Write 7000 on the board. Ask the children to write a spider diagram of multiplication and division by 10 and 100. <div data-bbox="1861 400 2179 469" style="border: 1px solid black; padding: 2px; margin: 5px 0;"> Q What happens to the digit 7 in each calculation? </div> <div data-bbox="1861 497 2179 577" style="border: 1px solid black; padding: 2px; margin: 5px 0;"> Q Who can tell me a rule for multiplying and dividing by 100? </div> <p>ASSESSMENT – Hand out Self-assessment sheet 10.1, allow the children time to complete and discuss and decide on a target.</p> <div data-bbox="1832 762 2179 1046" style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>By the end of the lesson the children should be able to:</p> <ul style="list-style-type: none"> Multiply a two- or three-digit number by 10 or 100; Divide a four-digit multiple of 1000 by 10 or 100. <p>(Refer to supplement of examples, section 6, page 64.)</p> </div>

Planning sheet	Day Two	Unit 10 <i>Multiplication and division 2</i>	Term: <i>Summer</i>	Year Group: 4																
Oral and Mental		Main Teaching		Plenary																
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities / Focus Questions																
<p>Begin to know multiplication facts for 6, 7, 8 and 9 times table.</p> <p>VOCABULARY totals</p> <p>RESOURCES Whiteboards Large digit cards, 2–10</p>	<ul style="list-style-type: none"> Display four large digit cards 6, 7, 8, and 9. Explain that you want to make two-step calculations which use three of the four numbers and \times along with either $+$ or $-$. <p>Model by saying that we can make 50 using 6, 7 and 8.</p> $6 \times 7 = 42$ $42 + 8 = 50$ <p>Ask if we can make 50 another way.</p> $8 \times 7 = 56$ $56 - 6 = 50$ <ul style="list-style-type: none"> Ask the children in pairs to make a two-step calculation making a total of 62 $8 \times 7 = 56$ $56 + 6 = 62$ <p>or</p> $9 \times 6 = 54$ $54 + 8 = 62$ <ul style="list-style-type: none"> Make a total of 57 $9 \times 7 = 63$ $63 - 6 = 57$ <p>or</p> $8 \times 6 = 48$ $48 + 9 = 57$ <p>The children record their calculations on whiteboards.</p> <p>Share answers and discuss the children's methods.</p>	<p>Develop and refine written methods for $TU \times U$.</p> <p>VOCABULARY times multiply multiplication multiplied by grid method</p>	<ul style="list-style-type: none"> Review homework from unit 9 day 5. Tell the children that they are going to look again at recording methods of multiplication. Remind them of how their jottings support their mental calculations. Now you want to develop together a method of recording, to support and explain their workings. Write 26×4 on the board. Ask the class to work it out. Remind the children about last week's work on the distributive law: <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>Q Is 3×7 equal to $(2 \times 7) + (1 \times 7)$?</p> </div> <p>Collect answers and the children's reasons.</p> <p>Explain why it is true. Ask the children for another example.</p> <p>Extend to $13 \times 7 = (10 \times 7) + (3 \times 7)$, $23 \times 7 = (20 \times 7) + (3 \times 7)$, $33 \times 7 = (30 \times 7) + (3 \times 7)$.</p> <p>Ask the children for other cases.</p> <ul style="list-style-type: none"> Introduce the 'grid method' for the calculation 26×4. <table style="border-collapse: collapse; margin: 5px 0;"> <tr> <td style="border-right: 1px solid black; border-bottom: 1px solid black; padding: 2px 5px;">\times</td> <td style="border-bottom: 1px solid black; padding: 2px 5px;">20</td> <td style="border-bottom: 1px solid black; padding: 2px 5px;">6</td> <td style="padding: 2px 5px;"></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px 5px;">4</td> <td style="padding: 2px 5px;">80</td> <td style="padding: 2px 5px;">24</td> <td style="padding: 2px 5px;">$80 + 24 = 104$</td> </tr> </table> <p>Explain the steps and emphasise how the partitioning helps with the calculation.</p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>Q Is the grid helpful? Does it look like your jottings?</p> </div> <p>Give the children 45×3 to work out using the grid method. Collect answers and get the children to talk through their solutions.</p> <ul style="list-style-type: none"> Set the children other multiplications to do using the grid method. Collect answers and correct any errors or misunderstandings. 	\times	20	6		4	80	24	$80 + 24 = 104$	<ul style="list-style-type: none"> Write up 39×6. <table style="border-collapse: collapse; margin: 5px 0;"> <tr> <td style="border-right: 1px solid black; border-bottom: 1px solid black; padding: 2px 5px;">\times</td> <td style="border-bottom: 1px solid black; padding: 2px 5px;">3</td> <td style="border-bottom: 1px solid black; padding: 2px 5px;">9</td> <td style="padding: 2px 5px;"></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px 5px;">6</td> <td style="padding: 2px 5px;">18</td> <td style="padding: 2px 5px;">54</td> <td style="padding: 2px 5px;">$18 + 54 = 72$</td> </tr> </table> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>Q Is this correct? What did I do wrong? What should I have done?</p> </div> <p>Collect answers and correct mistakes.</p> <p>Write up other errors, e.g. incorrect multiplication, addition and ask the children to identify the mistakes and provide the correct solution.</p> <ul style="list-style-type: none"> Pose a series of problems, e.g. <p style="margin-left: 20px;">A newsagent buys 63 packets of pencils. There are six pencils in each packet. How many pencils has he bought altogether?</p> <p style="margin-left: 20px;">Five full mini buses take the children on a school trip. There are 18 seats on each bus. How many people go on the trip?</p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>Q What calculation must we do? What would you write down to answer it?</p> </div> <p>Discuss how the calculations would be set out using the grid method.</p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>By the end of the lesson the children should be able to:</p> <ul style="list-style-type: none"> Use pencil and paper methods to support, record or explain calculations achieving consistent accuracy. Discuss, explain and compare methods. <p>(Refer to supplement of examples, section 6, page 66.)</p> </div>	\times	3	9		6	18	54	$18 + 54 = 72$
\times	20	6																		
4	80	24	$80 + 24 = 104$																	
\times	3	9																		
6	18	54	$18 + 54 = 72$																	

Planning sheet	Day Three (page 1 of 2)	Unit 10 <i>Multiplication and division 2</i>	Term: <i>Summer</i>	Year Group: 4
Oral and Mental		Main Teaching		Plenary
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities/Focus Questions
<p>Recall multiplication facts and derive quickly division facts corresponding to 3, 4, 5 times tables.</p> <p>VOCABULARY divides into divided by</p> <p>RESOURCES Counting stick</p>	<ul style="list-style-type: none"> Get the class to recite multiplication tables for: $\times 3, \times 4, \times 5$. Using a counting stick point to the markers as the class counts up in steps of 4. Repeat for 3s and 5s. Point to a marker on the stick. <div data-bbox="353 555 593 667" style="border: 1px solid black; padding: 5px;"> <p>Q If we are counting 3s, what number will this marker represent?</p> </div> <p>Confirm by counting up in 3s. Repeat using other markers and step sizes.</p> <ul style="list-style-type: none"> Say you are counting up in 4s. Point to a marker on the stick. <div data-bbox="353 874 593 1075" style="border: 1px solid black; padding: 5px;"> <p>Q What number will this marker represent? How many 4s make up this number? How many 4s divide into this number?</p> </div> <p>Confirm the number by counting up in 4s. Remind the children that the number of steps represents the number of 4s and the number of times 4 divides into the number. Repeat for other marks and step sizes.</p>	<p>Develop and refine written methods for $TU \div U$.</p> <p>VOCABULARY how many groups of ...in ...? share remainder divided by divisor inverse</p> <p>RESOURCES 18 cubes in a bag Counting stick</p>	<ul style="list-style-type: none"> Show a bag containing 18 cubes. Say you want to divide the cubes into piles of three but do not say how many there are in the bag. <div data-bbox="947 355 1736 400" style="border: 1px solid black; padding: 5px;"> <p>Q How could we do this?</p> </div> <p>Collect responses.</p> <p>Pick out groups of three cubes to see how many 3s there are in the bag.</p> <div data-bbox="947 499 1736 544" style="border: 1px solid black; padding: 5px;"> <p>Q How many groups of three did we find?</p> </div> <div data-bbox="947 563 1736 608" style="border: 1px solid black; padding: 5px;"> <p>Q How many cubes were in the bag?</p> </div> <p>Establish that there were six groups of three, and a total of 18 cubes. Record on the board: $18 \div 3 = 6$, and read the statement with the class, e.g. 18 divided by 3 is 6.</p> <ul style="list-style-type: none"> Relate the method of grouping into 3s to the counting stick, count up in 3s to 18 and back in 3s from 18 to 0. Establish that there are six steps of 3 from 18 to 0. Record on the board using the empty number line: <div data-bbox="1149 786 1563 890" style="text-align: center;"> </div> <p>Emphasise that we can subtract 3 from 18 six times.</p> <div data-bbox="947 954 1736 1018" style="border: 1px solid black; padding: 5px;"> <p>Q Suppose there have been 15 cubes in the bag, what would our answer have been?</p> </div> <p>Confirm that the answer would have been 5, record $15 \div 3 = 5$ and read it with the children.</p> <ul style="list-style-type: none"> Show the bag containing 17 cubes. Say you want to divide the cubes into piles of 5. <div data-bbox="947 1145 1736 1190" style="border: 1px solid black; padding: 5px;"> <p>Q How do we do this division?</p> </div> <p>Take out a group of five cubes. Repeat twice more.</p> <div data-bbox="947 1257 1736 1302" style="border: 1px solid black; padding: 5px;"> <p>Q How many groups of five cubes have we removed so far?</p> </div> <p>Establish that three groups of five cubes have been removed.</p>	<ul style="list-style-type: none"> Write on the board: $38 \div 5 = 7 \text{ R } 3$ <p>Ask the children to read and interpret this.</p> <div data-bbox="1832 435 2168 499" style="border: 1px solid black; padding: 5px;"> <p>Q How can we check the statement is correct?</p> </div> <p>Remind them that they can use multiplication to find 7×5 and then add the remainder 3.</p> <ul style="list-style-type: none"> Write on the board: $27 \div 2 = 11 \text{ R } 3$ $29 \div 3 = 9 \text{ R } 1$ $29 \div 4 = 7 \text{ R } 1$ $49 \div 5 = 10 \text{ R } 1$ $101 \div 10 = 10 \text{ R } 10$ <div data-bbox="1832 794 2168 858" style="border: 1px solid black; padding: 5px;"> <p>Q Are any of these statements incorrect?</p> </div> <p>Collect answers to each statement. Agree that only one statement is correct. Encourage the children to explain their reasoning.</p> <div data-bbox="1809 1034 2168 1273" style="border: 1px solid black; padding: 5px;"> <p>By the end of the lesson the children should be able to:</p> <ul style="list-style-type: none"> Derive quickly the corresponding division facts for 3, 4 and 5 times table. <p>(Refer to supplement of examples, section 6, pages 58 and 66.)</p> </div>

Planning sheet	Day Four	Unit 10 <i>Multiplication and division 2</i>	Term: <i>Summer</i>	Year Group: <i>4</i>
Oral and Mental		Main Teaching		Plenary
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities/Focus Questions
<p>Begin to know multiplication facts for the 6 and 7 times tables.</p> <p>Q What multiplication fact from the 6 times table relates to this mark?</p> <p>Record these on the board, out of sequence. When a number of statements for the 6 times table have been recorded ask:</p> <p>Q Can we put these statements in order and add the missing statements to help us remember them?</p> <p>With the class build up the complete multiplication table in order from $1 \times 6 = 6$ to $10 \times 6 = 60$. Get the class to read each statement twice. Remove any three statements and get the class to chant the table; remove another three statements and get the class to chant the table again. Finally remove all the statements and have the class chant the table.</p> <ul style="list-style-type: none"> Repeat for the 7 times table. <p>RESOURCES Counting stick</p>	<ul style="list-style-type: none"> With the counting stick, get children to count forwards in 6s. Repeat and at various markers stop. <p>Q What multiplication fact from the 6 times table relates to this mark?</p> <p>Record these on the board, out of sequence. When a number of statements for the 6 times table have been recorded ask:</p> <p>Q Can we put these statements in order and add the missing statements to help us remember them?</p> <p>With the class build up the complete multiplication table in order from $1 \times 6 = 6$ to $10 \times 6 = 60$. Get the class to read each statement twice. Remove any three statements and get the class to chant the table; remove another three statements and get the class to chant the table again. Finally remove all the statements and have the class chant the table.</p> <ul style="list-style-type: none"> Repeat for the 7 times table. <p>VOCABULARY chunking remainder</p>	<ul style="list-style-type: none"> Develop and refine written methods for $TU \div U$. <p>VOCABULARY chunking remainder</p>	<ul style="list-style-type: none"> Write on the board: $85 \div 6$. <p>Q How could we do this calculation?</p> <p>Collect responses. Remind the children that they could use a number line and keep subtracting 6 but this would take a long time.</p> <p>Q How could we use our knowledge of the 6 times table?</p> <ul style="list-style-type: none"> Remind the children that when we use chunking, we try to find big chunks to take away. <p>Q What is 10×6?</p> <p>Agree it is 60 and record:</p> $\begin{array}{r} 85 \\ - 60 \\ \hline 25 \end{array} \quad (10 \times 6)$ <p>Q What number fact in the 6 times table is close to 25?</p> <p>Work through the table and establish that $4 \times 6 = 24$ and $5 \times 6 = 30$, which is too big. Continue the calculation:</p> $\begin{array}{r} 85 \\ - 60 \\ \hline 25 \\ - 24 \\ \hline 1 \end{array} \quad (4 \times 6)$ <p>Explain that the calculation shows that we have subtracted ten 6s (60) and four 6s (24) with a remainder of 1. Altogether we have subtracted 14 6s. Record: $85 \div 6 = 14 \text{ R } 1$.</p> <ul style="list-style-type: none"> Work through $93 \div 7$ using chunking. Emphasise the method of recording, the number of 7s that have been subtracted and the remainder. Record: $93 \div 7 = 13 \text{ R } 2$ <p>Ensure the children can interpret this statement.</p> <ul style="list-style-type: none"> Set the children division calculations involving division by 5, 6 and 7. <p>Collect answers and discuss methods. Correct any errors and misunderstandings.</p>	<ul style="list-style-type: none"> On the board write: $17 \div 4$; $17 \div 5$; $17 \div 7$ and ask the children to work them out. <p>Q What do you notice about the remainder?</p> <p>Collect answers and record: $17 \div 4 = 4 \text{ R } 1$; $17 \div 5 = 3 \text{ R } 2$; $17 \div 7 = 2 \text{ R } 3$.</p> <p>Identify that the remainder is 1 when 17 is divided by 4, 2 when divided by 5, 3 when divided by 7.</p> <p>HOMEWORK –</p> <ul style="list-style-type: none"> Explain to the children that you know a two-digit number less than 30 that divided by 2 has remainder 1, divided by 5 has remainder 2 and divided by 6 has remainder 3. <p>Q Can you find the number?</p> <p>Say that you know of another two-digit number that when divided by 4 has remainder 1, when divided by 5 has remainder 1 and when divided by 6 has remainder 1.</p> <p>Tell the children that they have to find the answer for homework and provide written proof.</p> <p>By the end of the lesson the children should be able to:</p> <ul style="list-style-type: none"> Know multiplication facts for the 6 and 7 times tables; Begin to develop written methods for division ($TU \div U$). <p>(Refer to supplement of examples, section 6, page 66.)</p>

Planning sheet	Day Five	Unit 10 <i>Multiplication and division 2</i>	Term: <i>Summer</i>	Year Group: <i>4</i>
Oral and Mental		Main Teaching		Plenary
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities/Focus Questions
<p>Begin to know multiplication facts for the 8 and 9 times tables.</p> <p>RESOURCES Counting stick</p>	<ul style="list-style-type: none"> With the counting stick, get the children to count forwards in 8s. Repeat and at various marks stop. <div data-bbox="353 384 674 472" style="border: 1px solid black; padding: 5px;"> <p>Q What multiplication fact from the 8 times table relates to this mark?</p> </div> <p>Record these on the board, out of sequence. When a number of statements for the 8 times table are recorded, ask:</p> <div data-bbox="353 603 674 715" style="border: 1px solid black; padding: 5px;"> <p>Q Can we put these statements in order and add the missing statements to help us remember them?</p> </div> <p>With the class build up the complete multiplication table in order from $1 \times 8 = 8$ to $10 \times 8 = 80$. Get the class to read each statement twice. Remove any three statements and get the class to chant the tables; remove another three statements and get the class to chant the tables again. Finally, remove all the statements and have the class chant the table.</p> <ul style="list-style-type: none"> Repeat for the 9 times table. 	<p>Develop and refine written methods for $TU \times U$, $TU \div U$.</p> <p>VOCABULARY estimate multiply multiplication multiplied by divisor inverse factor</p> <p>RESOURCES OHT 10.1 Homework problem: Teacher guidance Self-assessment sheet 10.1</p>	<ul style="list-style-type: none"> Discuss the homework set on day 4. Remind the children that this week they have been working on written methods for multiplication (the grid method) and for division (chunking). Ask the children to use these methods to work out: 36×7 and $73 \div 5$. Collect answers and with the children work through the two calculations. Emphasise the importance of knowing their tables and setting the calculation out carefully. Show OHT 10.1. Ask the children to read question 1. <div data-bbox="981 528 1771 568" style="border: 1px solid black; padding: 5px;"> <p>Q What calculation do we need to do to answer this question?</p> </div> <p>Encourage the children to imagine one pack of 16 cards (illustrate with an envelope say) and the counting out of seven such packs.</p> <div data-bbox="981 651 1771 691" style="border: 1px solid black; padding: 5px;"> <p>Q Will we have more than 16 cards altogether? How many times more?</p> </div> <p>Establish that there will be more than 16 cards, and the calculation is 16×7. Ask the children to do the calculation.</p> <div data-bbox="981 774 1771 813" style="border: 1px solid black; padding: 5px;"> <p>Q How many cards are there altogether?</p> </div> <p>Establish that there are 112 cards in seven packs and record this on the board.</p> <ul style="list-style-type: none"> Ask the children to read question 2. <div data-bbox="981 906 1771 946" style="border: 1px solid black; padding: 5px;"> <p>Q What calculation do we need to do to answer this question?</p> </div> <p>Encourage the children to imagine 80 biscuits being put into packs of five.</p> <div data-bbox="981 1010 1771 1050" style="border: 1px solid black; padding: 5px;"> <p>Q Will we have fewer or more packs than biscuits?</p> </div> <p>Establish that each time we are putting biscuits into a pack there are five less biscuits and we need to find how many 5s there are in 80, so the calculation is $80 \div 5$. Ask the children to do the calculation.</p> <div data-bbox="981 1153 1771 1193" style="border: 1px solid black; padding: 5px;"> <p>Q How many packs are there altogether?</p> </div> <p>Establish that Angela must buy 16 packs of five biscuits and record this on the board. Ask the children to read the other questions and in pairs to decide on the calculation they need to do. Emphasise that you want the answer as a statement similar to:</p> <ol style="list-style-type: none"> There are 112 cards in seven packs. Angela must buy 16 packs of five biscuits. <p>Collect answers and discuss the children's methods. Correct any errors or misunderstandings.</p>	<p>ASSESSMENT – Give out Self-assessment sheet 10.1. Ask the children to complete the second question and explain their answer to a friend. Ask them to write their target.</p> <div data-bbox="1832 464 2177 791" style="border: 1px solid black; padding: 10px;"> <p>By the end of the lesson the children should be able to:</p> <ul style="list-style-type: none"> Use pencil and paper methods to support, record and explain calculations achieving consistent accuracy; Discuss and compare methods. <p>(Refer to supplement of examples, section 6, page 66.)</p> </div>

A collection of 28 ovals containing various numbers: 900, 100, 1000, 200, 9, 30, 70, 5000, 50, 7, 10, 40, 2000, 4000, 800, 6, 20, 90, 80, 400, 8000, 300, 5, 3000, 6000, 60, 600, 7000, 9000, 200, 70, 9000, 600.

1. There are 16 invitation cards in a pack. How many invitation cards are there in seven packs?
2. There are five chocolate biscuits in a pack. How many packs must Angela buy to get 80 biscuits for a party?
3. Tom has 56 stickers. He can stick four to a page. How many pages can he fill?
4. A box has 24 candles. How many candles are needed to fill eight boxes?
5. Chairs are stacked away in sixes. For a meeting 34 stacks of chairs are used. How many chairs are used for the meeting?
6. There are six eggs in a box. A café serves 42 eggs at breakfast. How many boxes of eggs does the café use?

Unit 10 Year 4 (Summer Term)

Homework problem: Teacher guidance

The answer is 61 (4, 5, 6 are factors of 60). The proof could be shown by doing a written method
e.g. $61 \div 4 = 15 \text{ R } 1$ $61 \div 5 = 12 \text{ R } 1$ $61 \div 6 = 10 \text{ R } 1$

Children might use different approaches, but any that involve listing the multiples +1 are acceptable. They might work through logically crossing off numbers that cannot be the answer, e.g. even numbers. A hundred square may be a useful resource for some to give them an image.

A child might reason that if it is odd it can only be a multiple of 10 +1. (Because multiples of 5 +1 are even). Encourage this, do not insist on their listing the other multiples. They can then match the other multiples near these.

11,	21,	31,	41,	51,	61,	71,	81,	91	5s
	21		41		61		81		4s
		31			61			91	6s

Encourage the children to explain orally their thinking.

Extension:

Is this the only answer less than 100?

Are there any answers above 100?

Can you find a link between all the other answers?

(multiples of 60)

My Mathematics by

Multiply and divide
800 by 10 and 100.

How I did it

Explain to a friend how you did it

I did this
on my own
together

There are 64 children
in the class.
How many teams of six
children can be made?
How many children will
be left over?

How I did it

Explain to a friend how you did it

I did this
on my own
together

A remainder is

My next target:
