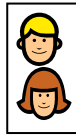


Week 1 - Using Multiplication and Division

| Focus + Resources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Lesson Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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| <p><b>Lesson 4</b><br/>Unit 2 Day 4<br/>Page 55</p> <p><b>Objectives</b></p> <ul style="list-style-type: none"> <li>To know that multiplication and division are inverse operations and to use this for simple calculations.</li> <li>To be able to multiply and divide decimals by multiples of 10.</li> </ul> <p><b>Key idea</b><br/>We can use facts we know to find answers to calculations.</p> <p><b>Resources</b></p> <ul style="list-style-type: none"> <li>Homework sheet 43 (if not used yesterday)</li> <li>paper and pencil</li> </ul> | <p><b>Mental</b></p> <p><b>Prime set</b></p> <ul style="list-style-type: none"> <li>Your child can allocate all of the numbers to the correct place or the activity might be shared with a sibling.</li> <li>See glossary for definition of a prime number.</li> </ul> <p><b>Inverted facts</b></p> <ul style="list-style-type: none"> <li>Play for speed and accuracy.</li> </ul> <p><b>Main Session</b></p> <p><b>Multiplication/division relationship</b></p> <ul style="list-style-type: none"> <li>See additional notes</li> </ul> <p><b>Using place value</b></p> <ul style="list-style-type: none"> <li>It will be helpful to give your child several examples to work out himself to ensure that he is confident with the concept.</li> </ul> <p><b>Use known facts</b></p> <ul style="list-style-type: none"> <li>Here we combine the use of known multiplication facts with the ability to divide or multiply quickly by factors of 10. Thus, <math>0.4 \times 9 = 4 \div 10 \times 9</math>. We can multiply or divide in any order and so we do <math>4 \times 9 \div 10</math>.</li> <li>Share lots of examples with your child.</li> </ul> <p><b>Practise using known facts and inverses</b></p> <ul style="list-style-type: none"> <li>You might wish to continue to share examples with your child rather than do the suggested activity.</li> </ul> <p><b>Plenary</b><br/>Discuss the poster or complete the work suggested above.</p>                                    |
| <p><b>Lesson 5</b><br/>Unit 2 Day 5<br/>Page 55</p> <p><b>Objectives</b></p> <ul style="list-style-type: none"> <li>To know that there are different ways of expressing a quotient.</li> <li>To be able to select the best way for the given problem.</li> </ul> <p><b>Key idea</b><br/>Quotients can be expressed in different ways according to the context of the problem</p> <p><b>Resources</b></p> <ul style="list-style-type: none"> <li>Core book page 79</li> <li>Lead-in sheet 79</li> <li>paper and pencil</li> </ul>                   | <p><b>Mental</b></p> <p><b>Special words</b></p> <ul style="list-style-type: none"> <li>See notes under 'Additional Teaching Points'.</li> </ul> <p><b>Equivalent pairs</b></p> <ul style="list-style-type: none"> <li>Use this to revise and sharpen skills. Give your child a fraction or a decimal and ask for the equivalent. If he is confident, use percentages too.</li> <li>Prepare some questions beforehand to ensure speed.</li> </ul> <p><b>Main Session</b></p> <p><b>Quotients as fractions or decimals</b></p> <ul style="list-style-type: none"> <li>With your child think of more practical examples e.g. dividing children into teams (half a child?) or buns between elephants.</li> </ul> <p><b>Quotients and calculators</b></p> <ul style="list-style-type: none"> <li>Recurring decimals will be studied more fully later in the term.</li> <li>At this point your child needs to know that some numbers cannot be expressed exactly as decimals. Ask your child to record just the first two decimal places and explain that each successive place (hundredths, thousandths etc) gets smaller and less significant.</li> </ul> <p><b>Practice questions</b></p> <ul style="list-style-type: none"> <li>The Lead-in sheet is likely to be very helpful. Remember that <math>\frac{3}{8}</math>, for instance, means <math>3 \div 8</math>.</li> </ul> <p><b>Plenary</b><br/>The final problem is well worth discussing once you have checked your child's work.</p> |

Week 1



**Additional Teaching Points**

At the beginning of this week we shall spend some time practising long multiplication until you are really good at it. Later on we shall be looking at ways in which we can use facts we know to make easy work of some tricky calculations.

We shall remind you, all through the week, that it is really important to look at the calculation first and then choose the easiest method. Not only does this save work, but it is more likely to be accurate.

**Lesson 3**

Keep the completed work from Core Book page 78 together with written working to send to your tutor at the end of Week 4.



**Lesson 4**

This sounds a bit daunting but it is really using the fact that if  $6 \times 50 = 300$ , then  $5 \times 60 = 300$  too (they are both  $6 \times 5 \times 10$ ). Then it follows that one-sixth of  $300 = 50$  (i.e.  $300 \div 6 = 50$ ) and that one-fifth of  $300 = 60$  (i.e.  $300 \div 5 = 60$ ). Division is the inverse of multiplication.

Using  $7 \times 40 = 280$ , we know that one seventh of  $280 = 40$  and that one quarter of  $280 = 70$ .

Make sure your place value grid includes decimal positions:

| H | T | U | Tenths | Hundredths | Thousandths |
|---|---|---|--------|------------|-------------|
|   |   |   |        |            |             |

Remember to put in the decimal point each time!

**Lesson 5**

During the starter activity, make sure your child is confident with the following vocabulary:

- multiple – the multiple of a number is a number which is divisible by that number (e.g. 12 and 18 are multiples of 6)
- lowest common multiple – the smallest number that is a common multiple of two or more numbers (e.g. 18 is the lowest common multiple of 6 and 9).
- factor – see glossary in Core Book
- highest common factor of two or more numbers is the largest number which is a factor of all the given numbers (6 is the highest common factor of 12 and 18).
- prime number – see glossary in Core Book.
- product - the answer to a multiplication sum.

You might check by asking questions such as ‘What is the highest common factor of 24 and 30?’

When expressing the ‘remainder’ in different ways, e.g. for the given example,  $676 \div 8$ , the following points might be helpful:

- When expressing it as a decimal, the decimal place should be added to 676 with a ‘0’ in the tenths position – 676.0.
- As a fraction, the ‘remainder’ of 4 is itself divided by 8 to give four eighths which equals one half.



# Long multiplication

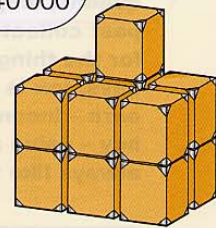
## 1 Approximate first.

Use partitioning to complete these calculations:

$$\begin{array}{r} \star 793 \\ \times 56 \\ \hline \end{array}$$

$$\begin{array}{r} \star 793 \\ \times 56 \\ \hline 39650 \quad (793 \times 50) \\ 4758 \quad (793 \times 6) \\ \hline 44408 \\ 111 \end{array}$$

793 × 56 is approximately  
800 × 50 ≈ 40 000



a  $\begin{array}{r} 123 \\ \times 45 \\ \hline \end{array}$

b  $\begin{array}{r} 614 \\ \times 53 \\ \hline \end{array}$

c  $\begin{array}{r} 408 \\ \times 19 \\ \hline \end{array}$

d  $\begin{array}{r} 926 \\ \times 37 \\ \hline \end{array}$

## 2 Use any method.

$$\star 743 \times 48$$

|    |        |       |     |               |
|----|--------|-------|-----|---------------|
|    | 700    | 40    | 3   |               |
| 40 | 28 000 | 1 600 | 120 | 29 720        |
| 8  | 5 600  | 320   | 24  | + 5 944       |
|    |        |       |     | <u>35 664</u> |

743 × 48 is approximately  
750 × 50 = 37 500



a  $328 \times 25$

b  $819 \times 39$

c  $423 \times 99$

d  $679 \times 85$

## Challenge

### 3 Use each digit once in each multiplication.

4 5 6 7 8

|   |  |  |
|---|--|--|
|   |  |  |
| × |  |  |
|   |  |  |

What is:

- a The largest possible product?
- b The smallest possible product?
- c The number nearest 40 000?
- d The number nearest 50 000?