Written methods – short division

Look at 824 divided by 5. We start with the largest place value.

$$\begin{array}{c|ccc} & 1 & 6 & 4 & r\,4 \\ \hline 5 & 8 & {}^3 2 & {}^2 4 \end{array}$$

8 hundreds divided by 5 is 100. There is 300 left over which we rename and carry over to the tens column.

32 tens divided by 5 is 6 with 2 left over. We rename and carry these 2 tens to the ones.

24 divided by 5 is 4 remainder 4.   **824 ÷ 5 = 164 r 4**

1   **Warm up with these:**

a   8 | 8   5 | r

b   5 | 4   7 | r

c   7 | 5   8 | r

d   5 | 6   3 | r

e   5 | 9   9 | r

f   6 | 6   0 | r

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2   **Divide these 3 digit numbers:**

a   5 | 7   1   5

b   9 | 6   7   1 | r

c   6 | 6   1   1 | r

d   8 | 9   2   8

e   4 | 6   3   5 | r

f   4 | 8   1   9 | r

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3   **Look at these word problems and decide if they are asking you to divide. If they are, solve the problem. If not, name the process you would use to solve them:**

a   250 children go to the local pool on a hot summer's day. Each child dives off the diving board 9 times. How many dives are there altogether?

b   The water safety team come to the pool and hand out 750 free balloons. How many children are there if they each get 3?

c   The shop does a roaring trade on ice creams, selling 121 before lunch and 145 after lunch. How many ice creams do they sell in total?

d   Of the 250 children at the pool, one fifth are planning to come back the next day. How many are coming back?

Multiplication and Division
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G 3   SERIES   TOPIC   21

Written methods – remainders in division

There are 3 ways of expressing remainders. We can express them as a fraction, as a decimal or as r __. How we do it depends on how we would deal with the problem in real life.

1 Complete the table by expressing the remainders in 3 different ways. What patterns can you use to help you?

	fraction	decimal	remainder
243 ÷ 5		48.6	
244 ÷ 5			48 r 4
245 ÷ 5			
246 ÷ 5			
247 ÷ 5			

2 Solve these problems and explain why you expressed the remainder as you did:

a You are bagging chocolates for the school fete. You have 299 chocolates and 10 bags. How many do you put in each bag?

b 12 pizzas are shared between 8 children. How much pizza does each child receive?

c You and 3 friends throw 67 paper planes into the ceiling of the classroom before getting caught. Your teacher offers you 66 minutes of rubbish duty in return. If you share it out evenly, how many minutes will each of you be carrying the rubbish bucket around the playground?

> It's important that I am precise with this money question so I am going to use a decimal remainder.

d Tracey, Sam, Max and Hung earn a £550 reward for returning a dog to its grateful owner. If they share the reward evenly, how much does each person receive?

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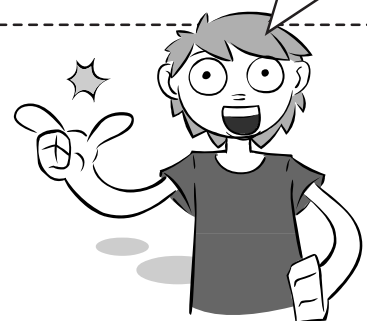
Multiplication and Division

Written methods – solving problems

We come across multiplication and division problems regularly in our everyday lives. It doesn't matter which strategy we use to solve them, we can choose the one that suits us or the problem best.

1 Solve these problems. Some require multiplication, some require division and some also require you to use addition as well. Underline the key words that guide you to the correct process.

a Lachlan buys 14 tickets to the World Cup for himself and his mates. Each ticket costs £145. How much does he spend in total?

b Four people hired a car for 2 days. The rates were £65 per day plus a one-off insurance charge of £30. What did each person pay, assuming the costs were shared evenly?

c The 3 Walsh children are allowed to use the computer between 5 and 6 pm and between 7 and 8:30 pm. How much time in minutes is it shared evenly?

d A standard bar of chocolate weighs 45 grams. A super-super sized bar weighs 3 times that amount. How many grams in 7 super-super sized bars?

> In division we know the total, we have to work out how we share that total into or between groups.

REMEMBER

e A pack of 10 cds costs £14.90. Jack buys 4 packs. How much does he spend in total? What does the cost work out to be for each cd?