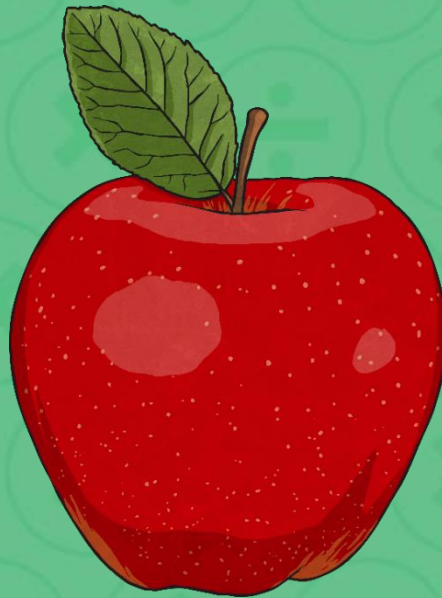




Maths

Multiplication and Division

Short Division with Remainders



Aim

- I can use the short written method for division where there are remainders.

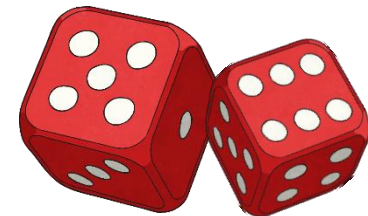
Success Criteria

- I can set out the calculation correctly and start at the left-hand side.
- I can calculate how many times the divisor will go into the first digit of the dividend and write the answer on top of the line.
- I can regroup any remainders in the next column and continue the calculation, writing the answer on the top line.
- I can write the final remainder on the top line.

Sharing



- Work in pairs.
- One of you needs to grab a handful of cubes or counters. Grab as many as you can! Count them to give you the total.
- The other partner needs to roll the one or two dice to get your group number.
- Now share the number of counters or cubes into the number of groups. If you had a total of 24 and a group number of 5 you would share 24 into 5 equal groups.
- But 24 won't share into 5 equal groups! If you share 24 into 5 groups there are 5 groups of 4, and 4 left over.
- This is called a remainder. We write it with a lowercase 'r'.
 $24 \div 5 = 4 \text{ r } 4$
- Now you play! Who can get the biggest remainder?



The Short Method for Division

$$76 \div 4 =$$

Draw this neatly with a ruler. It looks a bit like a bus stop, so the written method for division is sometimes known as the 'Bus Stop' method.

$$4 \overline{) 76}$$

Write the number you are dividing by, the **divisor**, in front of the vertical line.

Write the number that is being divided, the dividend, on the right-hand side of the vertical line.

The answer will go on top of the horizontal line. Can you work it out?

The Short Method for Division

$$76 \div 4 = 19$$

$$\begin{array}{r} 19 \\ 4 \overline{) 76} \end{array}$$

Step 1

Share seven tens into four groups. **There is 1 ten in each group with 3 tens left over.** We write the 1 above the line and regroup the remaining 3 tens into 30 ones, moving this to the next column.

Step 2

How many fours are there in 36?

There are 9 exactly, so we write this above the line.

Practise



Work this calculation out using the written method for division.

$$95 \div 5 = 19$$

$$\begin{array}{r} 19 \\ 5 \overline{) 95} \\ \underline{5} \\ 45 \\ \underline{45} \\ 0 \end{array}$$

Practise



Work this calculation out using the written method for division.

$$98 \div 7 = 14$$

$$\begin{array}{r} 14 \\ 7 \overline{) 98} \end{array}$$

Practise



Work this calculation out using the written method for division.

$$84 \div 6 = 14$$

$$\begin{array}{r} 14 \\ 6 \overline{) 84} \\ \underline{6} \\ 24 \\ \underline{18} \\ 6 \end{array}$$

Remainders

$$53 \div 4 = 13 \text{ r}1$$

$3 \times 4 = 12$, and we were trying to share 13, so there is 1 left over!

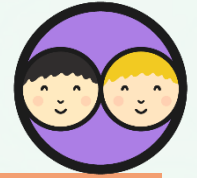
$$\begin{array}{r} 13 \text{ r}1 \\ 4 \overline{) 53} \end{array}$$

Share 5 tens into 4 groups. There is 1 ten in each group with 1 ten left over. We write the 1 above the line and regroup the left over ten onto the next column to make 13.

Share 13 into 4 groups? We can make 4 groups of 3, so write 3 above the bus stop.

There is 1 left over. This is a remainder. So we write r1 on the line.

Find the Remainders



Work this calculation out using the written method for division.

$$26 \div 5 = 5 \text{ r}1$$

$$\begin{array}{r} 0 \quad 5 \quad \text{r}1 \\ 5 \overline{) 26} \\ \underline{25} \\ 1 \end{array}$$

Find the Remainders

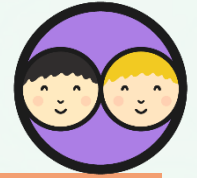


Work this calculation out using the written method for division.

$$47 \div 4 = 11 \text{ r}3$$

$$\begin{array}{r} 11 \text{ r}3 \\ 4 \overline{) 47} \\ \underline{4} \\ 4 \\ \underline{4} \\ 7 \\ \underline{0} \\ 7 \end{array}$$

Find the Remainders

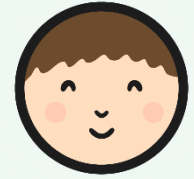


Work this calculation out using the written method for division.

$$86 \div 6 = 14 \text{ r}2$$

$$\begin{array}{r} 14 \text{ r}2 \\ 6 \overline{) 86} \\ \underline{6} \\ 26 \\ \underline{24} \\ 2 \end{array}$$

Short Division with Remainders Activities



★ Short Division

I can use the short written method for division.

1. Can you use the written method to calculate the following?
 a. $56 \div 4 =$ _____

d. $110 \div 5 =$ _____

2. Now try these. They have remainders.
 a. $27 \div 5 =$ _____

d. $34 \div 3 =$ _____

★ Short Division

I can use the short written method for division.

1. Use the short method of division to calculate the following.
 a. $73 \div 5 =$ _____

d. $99 \div 8 =$ _____

2. Well done! Now try these 3-digit calculations.
 a. $379 \div 3 =$ _____

d. $114 \div 5 =$ _____

★ Short Division

3. How can you identify multiples of 5? Write down whether these division calculations you were correct.

a. $2466 \div 5 =$ _____
 I think there will be a remainder.
 I think there won't be a remainder.

b. $3942 \div 5 =$ _____
 I think there will be a remainder.
 I think there won't be a remainder.

a. $7260 \div 5 =$ _____
 I think there will be a remainder.
 I think there won't be a remainder.

★ Short Division with

I can use the short written method for division with remainders.

1. Use the short method of division to calculate the following.
 a. $73 \div 5 =$ _____ b. $57 \div 4 =$ _____

d. $99 \div 8 =$ _____ e. $77 \div 6 =$ _____

2. Well done! Now try these 3-digit calculations.
 a. $379 \div 3 =$ _____ b. $649 \div 9 =$ _____

d. $114 \div 5 =$ _____ e. $704 \div 6 =$ _____

★ Short Division with Remainders

3. Can you do these? When you divide by 12, you may have to exchange two-digit numbers.

a. $220 \div 12 =$ _____ b. $267 \div 12 =$ _____ c. $422 \div 12 =$ _____

d. $328 \div 12 =$ _____ e. $462 \div 12 =$ _____

What's Missing?



Can you work out the missing digits in these written division calculations?

Click on a question mark to reveal the answers.

$$\begin{array}{r} 1 \quad \quad \quad ? \\ ? \overline{) 6 \quad ^1 9} \end{array}$$

$$\begin{array}{r} 2 \quad ? \quad \quad 7 \text{ r}1 \\ 4 \overline{) ? \quad ^1 4 \quad ^2 ?} \end{array}$$

How did you work it out?

Aim



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