

Maths Activity — Ages 10-11

How It Works

Use columns and partitioning to multiply large numbers. Look over this example:

Partition 23 into 3 and 20.

$$\begin{array}{r}
 1846 \\
 \times 23 \\
 \hline
 5538 \\
 36920 \\
 \hline
 42458
 \end{array}$$

$1846 \times 3 \rightarrow$ 5 5 3 8
 $1846 \times 20 \rightarrow$ 3 6 9 2 0
 Add to get the answer. \rightarrow 4 2 4 5 8

To use long division, write out your working for each step. Here's an example:

$$\begin{array}{r}
 266 \text{ r } 15 \\
 16 \overline{) 4271} \\
 \underline{- 32} \\
 107 \\
 \underline{- 96} \\
 111 \\
 \underline{- 96} \\
 15
 \end{array}$$

$16 \times 2 = 32 \rightarrow$
 $16 \times 6 = 96 \rightarrow$
 $16 \times 6 = 96 \rightarrow$

The remainder is 15.



Now Try These

1. Sakura is paying for these rare cars in instalments. She uses these calculations to work out the total price of each car. Tick the most expensive and the cheapest car.



$$\begin{array}{r}
 2079 \\
 \times 14 \\
 \hline
 \\
 \\
 \hline
 \\
 \hline
 \\
 \hline
 \end{array}$$



$$\begin{array}{r}
 1162 \\
 \times 43 \\
 \hline
 \\
 \\
 \hline
 \\
 \hline
 \\
 \hline
 \end{array}$$



$$\begin{array}{r}
 1508 \\
 \times 51 \\
 \hline
 \\
 \\
 \hline
 \\
 \hline
 \\
 \hline
 \end{array}$$

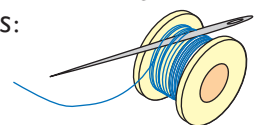


$$\begin{array}{r}
 3146 \\
 \times 22 \\
 \hline
 \\
 \\
 \hline
 \\
 \hline
 \\
 \hline
 \end{array}$$

2. There are 1244 m of thread on a spool. Use short division to work out how many equal-length pieces of thread Rory can cut from the spool if each piece is:

a) 9 m long.

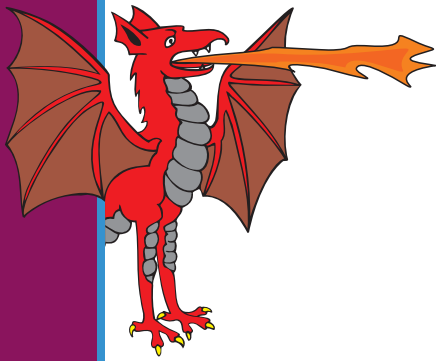
b) 12 m long.



..... pieces

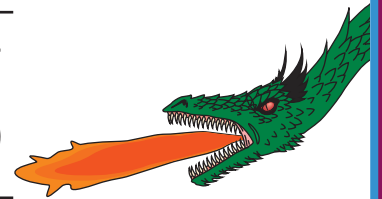
..... pieces

3. Fill in the missing digits in these multiplications.



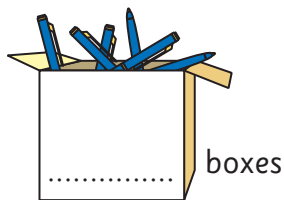
$$\begin{array}{r}
 70\boxed{2} \\
 \times \quad 65 \\
 \hline
 \boxed{5}460 \\
 \quad 41 \\
 \hline
 4255\boxed{0} \\
 \quad 51 \\
 \hline
 46\boxed{9}80 \\
 \quad 1
 \end{array}$$

$$\begin{array}{r}
 5\boxed{2}3 \\
 \times \quad 48 \\
 \hline
 457\boxed{4} \\
 \quad 512 \\
 \hline
 22\boxed{9}20 \\
 \quad 21 \\
 \hline
 274\boxed{0}4 \\
 \quad 111
 \end{array}$$

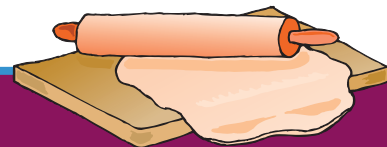


4. Femi has 9211 pens.
He wants to put 43 pens in each box.
How many boxes can he fill?

5. A bakery made 3911 tarts a week
for 65 weeks. How many tarts
did the bakery make in total?



..... tarts



An Extra Challenge

These three dogs always get their treats from the same bags.
They all start new bags at the start of the year.

Barney
1127 treats per year

Coco
1463 treats per year

Sadie
1250 treats per year

At the end of the year, who has finished the most bags?
Who has the most treats left in a bag?

How did it go? Did you work
magic with multiplication?



Answers

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1.

$$\begin{array}{r} 2079 \\ \times 14 \\ \hline 8316 \\ 20790 \\ \hline 29106 \\ 11 \end{array}$$

$$\begin{array}{r} 1162 \\ \times 43 \\ \hline 3486 \\ 462480 \\ \hline 49966 \\ 1 \end{array}$$

$$\begin{array}{r} 1508 \\ \times 51 \\ \hline 1508 \\ 75400 \\ \hline 76908 \end{array}$$

$$\begin{array}{r} 3146 \\ \times 22 \\ \hline 6292 \\ 62920 \\ \hline 69212 \\ 11 \end{array}$$

2. a) **138 pieces**

$$9 \overline{) 123474} \quad 138 \text{ r } 2$$

b) **103 pieces**

$$12 \overline{) 12444} \quad 103 \text{ r } 8$$

3.
$$\begin{array}{r} 7092 \\ \times 65 \\ \hline 35460 \\ 425520 \\ \hline 460980 \\ 1 \end{array}$$

$$\begin{array}{r} 5723 \\ \times 48 \\ \hline 45784 \\ 228920 \\ \hline 274704 \\ 111 \end{array}$$

4.
$$43 \overline{) 9211} \quad 214 \text{ r } 9$$

$$\begin{array}{r} 9211 \\ - 86 \\ \hline 61 \\ - 43 \\ \hline 181 \\ - 172 \\ \hline 9 \end{array}$$

So he can fill **214 boxes**.

5.
$$\begin{array}{r} 3911 \\ \times 65 \\ \hline 19555 \\ 234660 \\ \hline 254215 \\ 111 \end{array}$$

So they made **254 215** tarts.

An Extra Challenge

Barney	Coco	Sadie
$22 \overline{) 1127} \quad 51 \text{ r } 5$	$31 \overline{) 1463} \quad 47 \text{ r } 6$	$24 \overline{) 1250} \quad 52 \text{ r } 2$
$\begin{array}{r} 1127 \\ - 110 \\ \hline 27 \\ - 22 \\ \hline 5 \end{array}$	$\begin{array}{r} 1463 \\ - 124 \\ \hline 223 \\ - 217 \\ \hline 6 \end{array}$	$\begin{array}{r} 1250 \\ - 120 \\ \hline 50 \\ - 48 \\ \hline 2 \end{array}$

Sadie finished the most bags (52). Coco had the most treats left (6).