Activity 1 Multiply Integers

Column Multiplication

			4	2	6	7
		×			3	4
			1	2	2	
		1	7	0	6	8
+	1	2	8	0	1	0
			2	2		
	1	4	5	0	7	8
		1				

To solve this calculation we will partition the 2-digit number and calculate the answer in two parts.

Start by calculating 4267 × 4

Insert 0 as a placeholder because we are multiplying by a multiple of 10. (4267 × 30)

Calculate the **total answer** using column addition.

Top Tip: Don't forget to carry forward as you multiply and add on the exchanges you have carried.

Activity 1 Multiply Integers

Calculate:

	4	2	6	7
×			3	4

	3	0	4	6
×			7	3

What is important to remember as we begin multiplying by the tens number?

Activity 1 Multiply Integers

Calculate:

			4	2	6	7
		×			3	4
			1	2	2	
		1	7	0	6	8
+	1	2	8	0	1	0
		2	2			
	1	4	5	0	7	8

			3	0	4	6
		×			7	3
				1	1	
			9	1	3	8
+	2	1	3	2	2	0
			3	4		
	2	2	2	3	5	8
		1				

Activity 1 Multiply Integers

Now calculate the following using column multiplication

		2	4	0	5
×				2	7

		6	4	6	3
×				3	4

		7	1	4	8
×				5	5

		9	5	3	2
×				6	3

Activity 1 Multiply Integers

Here are the final answers

		2	4	0	5
×				2	7
	6	**4**	**9**	**3**	**5**

		6	4	6	3
×				3	4
2	**1**	**9**	**7**	**4**	**2**

		7	1	4	8
×				5	5
3	**9**	**3**	**1**	**4**	**0**

		9	5	3	2
×				6	3
6	**0**	**0**	**5**	**1**	**6**

Activity 2 Multiply Integers

Leanna made cookies for a bake sale. She made 345 cookies. The recipe stated that she should have 17 chocolate chips in each cookie.

How many chocolate chips did she use altogether?

?

How would you draw the calculation?

Activity 2 Multiply Integers

Leanna made cookies for a bake sale. She made 345 cookies. The recipe stated that she should have 17 chocolate chips in each cookie.

		3	4	5
	×		1	7
		3	3	
	2	4	1	5
+	3	4	5	0
	5	8	6	5

Leanna used **5,865** chocolate chips altogether.

Activity 2 Multiply Integers

Tia made cookies for a bake sale. She made 375 cookies. The recipe stated that she should have 16 chocolate chips in each cookie.

How many chocolate chips did she use altogether?

Activity 2 Multiply Integers

Tia made cookies for a bake sale. She made 375 cookies. The recipe stated that she should have 16 chocolate chips in each cookie.

		3	7	5
	×		1	6
		4	3	
	2	2	5	0
+	3	7	5	0
	6	0	0	0
		1		

Tia used **6,000** chocolate chips altogether.

Activity 3 Multiply Integers

Work out the missing number.

$$6 \times 35 = \_\_\_\_ \times 5$$

?

Can the inverse operation be used?

Activity 3 Multiply Integers

Work out the missing number.

$6 \times 35 = \underline{42} \times 5$

Activity 3 Multiply Integers

Work out the missing number.

$9 \times 45 = \_\_\_\_ \times 5$

$3 \times 70 = \_\_\_\_ \times 10$

$4 \times 900 = \_\_\_\_ \times 10$

Activity 3 Multiply Integers

Work out the missing number.

$9 \times 45 = \underline{81} \times 5$

$3 \times 70 = \underline{21} \times 10$

$4 \times 900 = \underline{360} \times 10$

True or False?

- 4,463 x 17 = 17 x 4,463
- I can find the answer to 1,100 x 27 by doing 1,100 x 30 and subtracting 3 lots of 1,100.
- 80 x 10 = 800 x 100

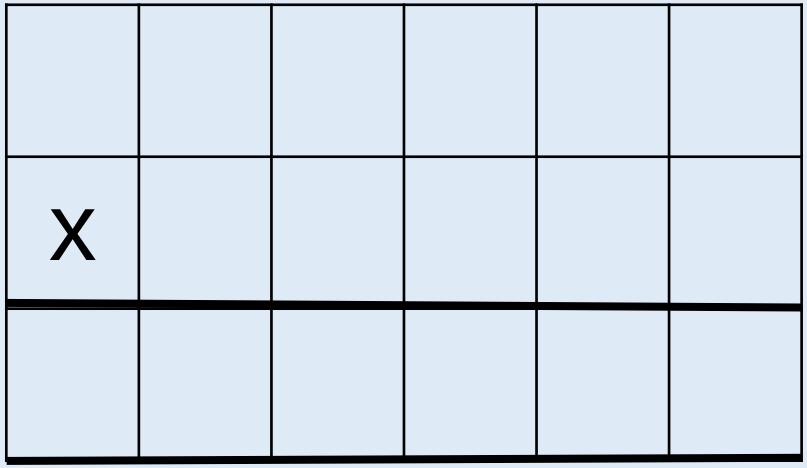
True or False?

- 4,463 x 17 = 17 x 4,463 True
- I can find the answer to 1,100 x 27 by doing 1,100 x 30 and subtracting 3 lots of 1,100. True
- 80 x 10 = 800 x 100 False

Reasoning - 2 Multiply Integers

Place the digits in the boxes to make the largest product.

1	2	3	4	6	7



Reasoning - 2 Multiply Integers

Place the digits in the boxes to make the largest product.

1	2	3	4	6	7

		7	3	2	1
x				6	4
4	6	8	5	4	4

Discussion

Multiply Integers

What is important to remember as we begin multiplying by the tens number?

How would you draw the calculation?

Can the inverse operation be used?

Is there a different strategy that you could use?

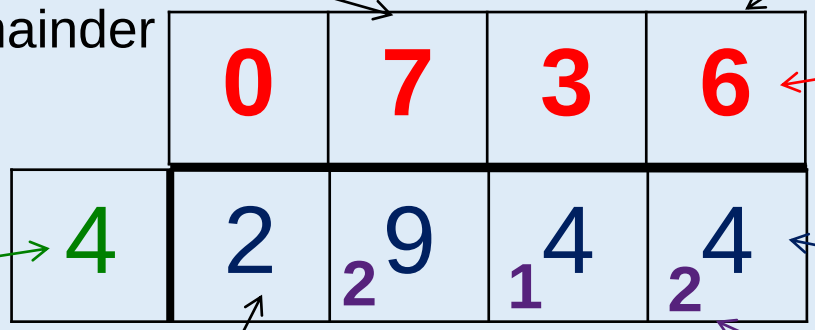
The Written Method for Short Division

Calculate 2944 ÷ 4

B) **7** lots of **4** squeeze in to **29**. **7** × **4** = **28**, which is **1** short of **29**. This remainder is carried forward.

C) **3** × **4** makes **12**, which is 2 short of 14. 2 is carried forward.

D) **6** lots of **4** makes **24** exactly, so no remainder is left over.



Quotient (Answer)

Divisor

Dividend

A) We can not squeeze any **4s** in to **2**, so we carry **2** forward in to the next column.

Make a list of the multiples of **4** before you begin.

Remainders carried forward

? *Can you make a list of top tips to support you with using this method?*

Activity 1 Short Division

Calculate using short division.

5	7	2	5

3	1	9	3	8

12	6	0	3	6

3,612 ÷ 14

List the multiples of the numbers to help you calculate.

?

What is different between dividing by 1 digit and 2 digits?

Activity 1 Short Division

Calculate using short division.

	1	4	5
5	7	2^{2}	5^{2}

		6	4	6
3	1	9^{1}	3^{1}	8^{1}

		5	0	3
12	6	0^{6}	3	6^{3}

		2	5	8
14	3	6^{3}	1^{8}	2^{11}

? *id you remember to list multiples of the divisor before you started?*

Activity 2 Short Division

A limousine company allows 14 people per limousine.

How many limousine are needed for 230 people?

?

If the number does not divide into the ones, what do we do?

Activity 2 Short Division

A limousine company allows 14 people per limousine.

How many limousine are needed for 230 people?

1 × 14 = 14 ←
2 × 14 = 28
3 × 14 = 42
4 × 14 = 56
5 × 14 = 70
6 × 14 = 84 ←
7 × 14 = 98
8 × 14 = 112
9 × 14 = 126
10 × 14 = 140

	1	6	r 6
14	2	$^{2}3$	$_{9}0$

Since there is a remainder left over, you will need one more limousine.

17 limousines are needed for 230 people.

Activity 2 Short Division

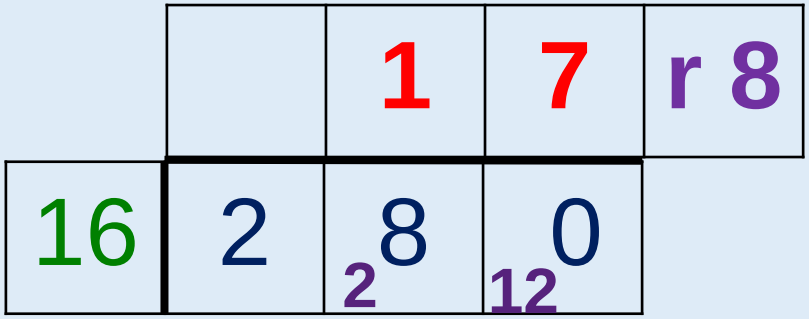
A limousine company allows 16 people per limousine.

How many limousine are needed for 280 people?

Activity 2 Short Division

A limousine company allows 16 people per limousine.

How many limousine are needed for 280 people?



→ 1 × 16 = 16
2 × 16 = 32
3 × 16 = 48
4 × 16 = 64
5 × 16 = 80
6 × 16 = 96
→ 7 × 16 = 112
8 × 16 = 128
9 × 16 = 144
10 × 16 = 160

18 limousines are needed for 280 people.

Activity 2 Short Division

A rollercoaster allows 14 people per ride. There are 133 people in the queue, how many rides will it take for all the people to ride the rollercoaster?

Activity 2 Short Division

A rollercoaster allows 14 people per ride. There are 133 people in the queue, how many rides will it take for all the people to ride the rollercoaster?

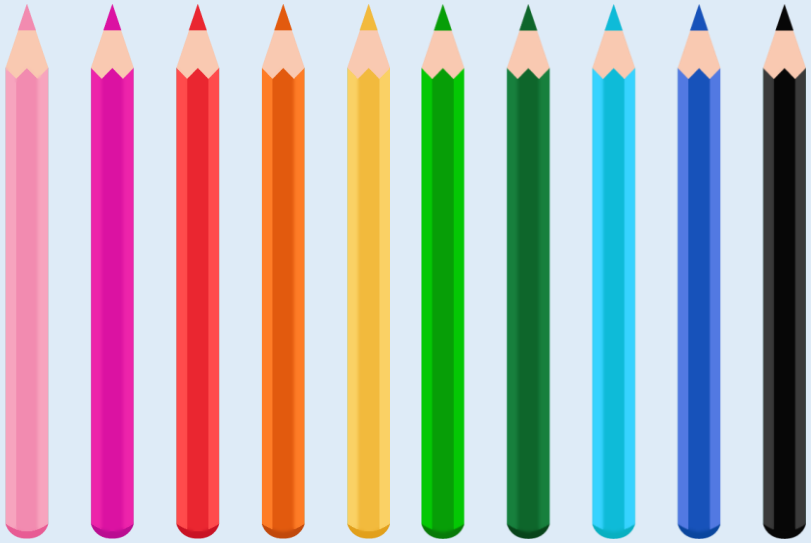
1 × 14 = 14
2 × 14 = 28
3 × 14 = 42
4 × 14 = 56
5 × 14 = 70
6 × 14 = 84
7 × 14 = 98
8 × 14 = 112
9 × 14 = 126 ←
10 × 14 = 140

		9	r 7
14	1	1 3	13 3

It will take **10** rides for all the people to ride the rollercoaster.

Activity 3 Short Division

Year 6 has 2,356 pencils for the year.
They put them in bundles, with 12 in each bundle.
How many complete bundles can be made?



If the number does not divide into the ones, what do we do?

Activity 3 Short Division

Year 6 has 2,356 pencils for the year.
They put them in bundles, with 12 in each bundle.
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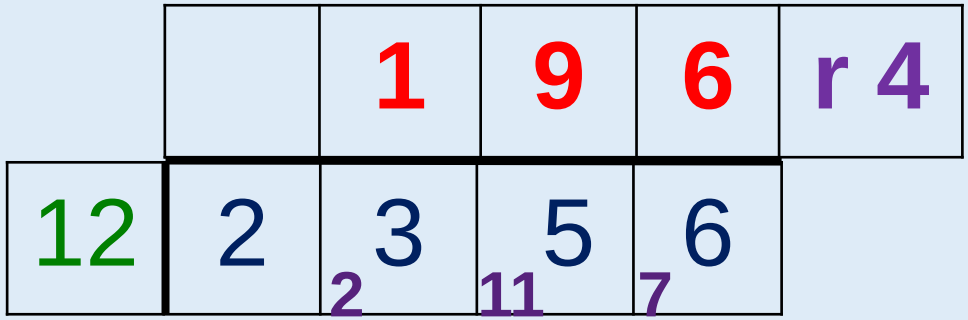
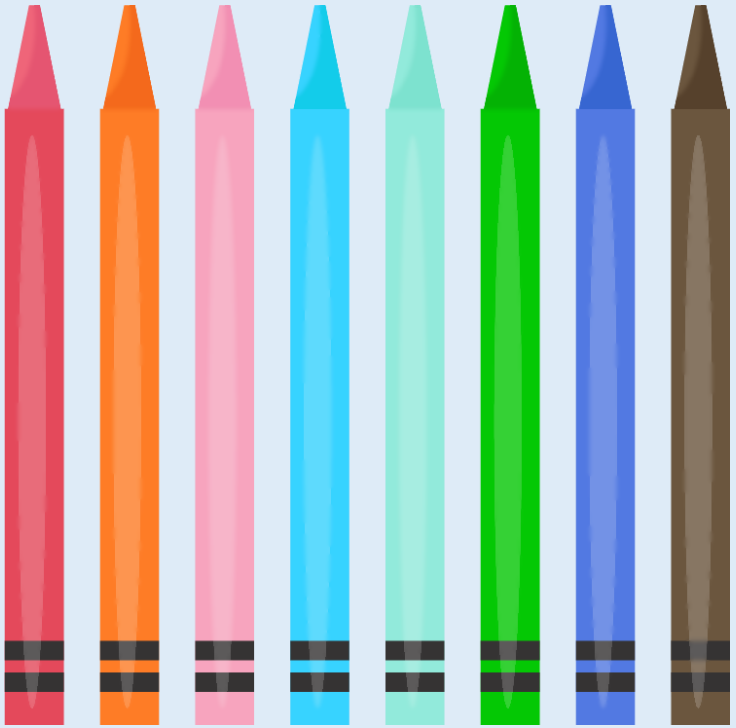


→1 × 12 = 12
2 × 12 = 24
3 × 12 = 36
4 × 12 = 48
5 × 12 = 60
→6 × 12 = 72
7 × 12 = 84
8 × 12 = 96
→9 × 12 = 108
10 × 12 = 120

Year 6 can make **196** bundles with
4 pencil crayons remaining.

Activity 3 Short Division

Year 6 has 1,328 crayons for the year.
They put them in bundles, with 12 in each bundle.
How many complete bundles can be made?



Activity 3 Short Division

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They put them in bundles, with 12 in each bundle.
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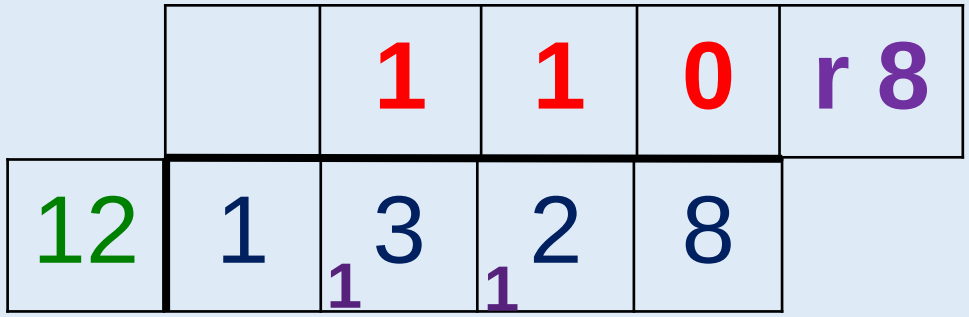


→ 1 × 12 = 12
2 × 12 = 24
3 × 12 = 36
4 × 12 = 48
5 × 12 = 60
6 × 12 = 72
7 × 12 = 84
8 × 12 = 96
9 × 12 = 108
10 × 12 = 120

Year 6 can make **110** bundles of colouring pencils with **8** remaining.

Reasoning - 1 Short Division

Find the missing digits.

$$
\begin{array}{r}
041\_\_ \\
3\overline{)1\_45}
\end{array}
$$

Find the missing digits.

$$\begin{array}{r} 041\square \\ 3\overline{)12\square 5} \\ \underline{\quad\quad} \end{array}$$

Reasoning - 2 Short Division

Here are two calculation cards.

A = 506 ÷ 11

B = 845 ÷ 13

Find the difference between A and B.

Reasoning - 2 Short Division

Here are two calculation cards.

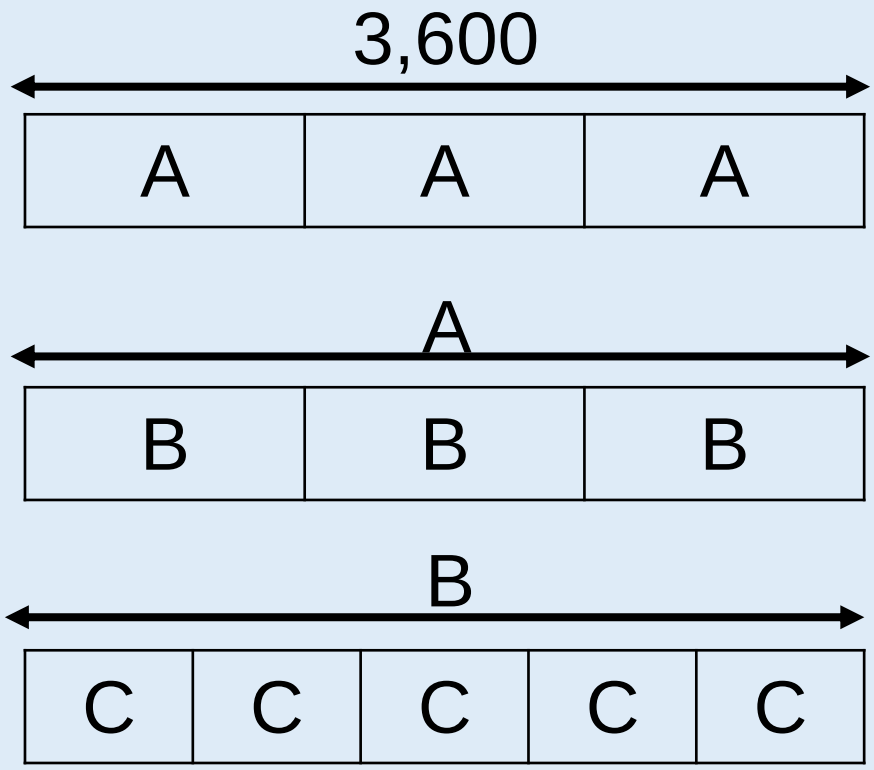
A = 506 ÷ 11

B = 845 ÷ 13

506 ÷ 11 = 46
845 ÷ 13 = 65
65 – 46 = 19

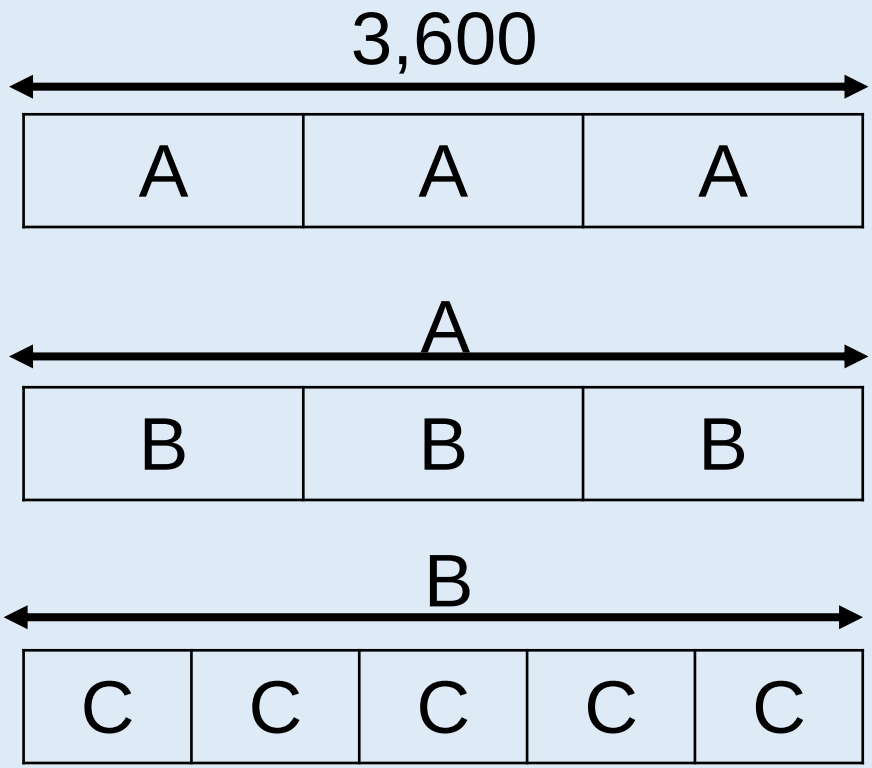
Reasoning - 3 Short Division

Work out the value of C.
(The bar models are not drawn to scale)



Reasoning - 3 Short Division

Work out the value of C.
(The bar models are not drawn to scale)



3,600 ÷ 3 = 1,200

1,200 ÷ 3 = 400

400 ÷ 5 = 80