

Day 2 Maths - Starter

Year 6 | Week 1 | Day 3



1) What is 3.2×10 ? **32**

2) Multiply 1.75 by 10 **17.5**

3) Work out $1\frac{1}{3} + 2\frac{5}{9}$ **$3\frac{8}{9}$**

4) Calculate $1,765 \text{ kg} + 218 \text{ kg}$ **1,983 kg**

Day 2 Maths - Multiplying by 10, 100 & 1,000

Day 2 Video Link <https://vimeo.com/487198038>

Day 2 Video Support [Multiply and divide by 10, 100 and 1000 - Year 6 - P7 - Maths - Catch Up Lessons - Home Learning with BBC Bitesize - BBC Bitesize](#)

Multiplying and Dividing by 10, 100 and 1000

10 000	1000	100	10	1	●	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$
					●			

Multiplying

X 10
X 100
X 1000

digits move LEFT 1 space
digits move LEFT 2 spaces
digits move LEFT 3 spaces



Dividing

÷ 10
÷ 100
÷ 1000

digits move RIGHT 1 space
digits move RIGHT 2 spaces
digits move RIGHT 3 spaces



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*Pay attention to the rule - the digits **MUST** move in order for them to increase in value.*

1 Complete the calculations and sentences.

Use place value counters to help you.

Th	H	T	O	Tth	Hth
			●●●	●●●●	

a) $2.3 \times 10 = \square$

When the number is multiplied by 10 the counters move place to the left.

b) $2.3 \times 100 = \square$

When the number is multiplied by 100 the counters move places to the left.

c) $2.3 \times 1,000 = \square$

When the number is multiplied by 1,000 the counters move places to the left.

2 Complete the diagram.



3 a) Draw counters on a place value chart to represent each calculation.

4.4×1

4.4×10

4.4×100

$4.4 \times 1,000$



b) Complete the calculations.

$4.4 \times 1 = \square$

$4.4 \times 100 = \square$

$4.4 \times 10 = \square$

$4.4 \times 1,000 = \square$

What do you notice?

4 Complete the calculations.

a) $13.44 \times 10 = \square$

d) $4.4 \times \square = 4,400$

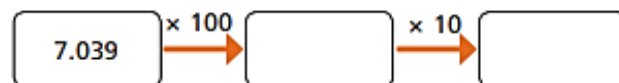
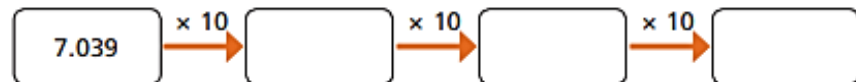
b) $41.4 \times 100 = \square$

e) $\square = 1.03 \times 100$

c) $0.415 \times 1,000 = \square$

f) $30.44 = \square \times 10$

5 Complete the diagrams.





1 Complete the calculations and sentences.

Use place value counters to help you.

Th	H	T	O	Tth	Hth
			● ●	● ● ● ●	

a) $2.3 \times 10 =$

When the number is multiplied by 10 the counters move place to the left.

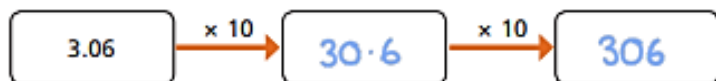
b) $2.3 \times 100 =$

When the number is multiplied by 100 the counters move places to the left.

c) $2.3 \times 1,000 =$

When the number is multiplied by 1,000 the counters move places to the left.

2 Complete the diagram.



3 a) Draw counters on the place value charts to represent each calculation.

4.4×1

Th	H	T	O	Tth	Hth
			● ● ● ●	● ● ● ●	

4.4×10

Th	H	T	O	Tth	Hth
			● ● ● ●	● ● ● ●	

←

4.4×100

Th	H	T	O	Tth	Hth
			● ● ● ●	● ● ● ●	

←

$4.4 \times 1,000$

Th	H	T	O	Tth	Hth
			● ● ● ●	● ● ● ●	

←

b) Complete the calculations.

$4.4 \times 1 =$

$4.4 \times 10 =$

$4.4 \times 100 =$

$4.4 \times 1,000 =$

What do you notice?

b) Complete the calculations.

$4.4 \times 1 = \square$

$4.4 \times 100 = \square$

$4.4 \times 10 = \square$

$4.4 \times 1,000 = \square$

What do you notice?

4 Complete the calculations.

a) $13.44 \times 10 = \square$

d) $4.4 \times \square = 4,400$

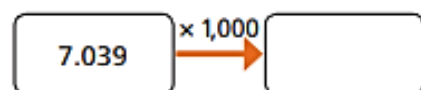
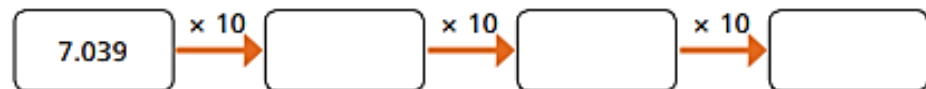
b) $41.4 \times 100 = \square$

e) $\square = 1.03 \times 100$

c) $0.415 \times 1,000 = \square$

f) $30.44 = \square \times 10$

5 Complete the diagrams.



6 Write $>$, $<$ or $=$ to compare the number sentences.

$1.4 \times 10 \times 10 \times 10 \bigcirc 1.4 \times 1,000$

$1.4 \times 10 \times 100 \bigcirc 1.4 \times 1,000$

$1.4 \times 10 \times 10 \bigcirc 1.4 \times 1,000$

$1.4 \times 10 \times 2 \bigcirc 1.4 \times 100$

7 Kim is calculating 14.3×200

She writes this as her answer.

$$14.3 \times 200 = 28.600$$

Explain Kim's mistake.

8 Use the cards to complete the calculation.

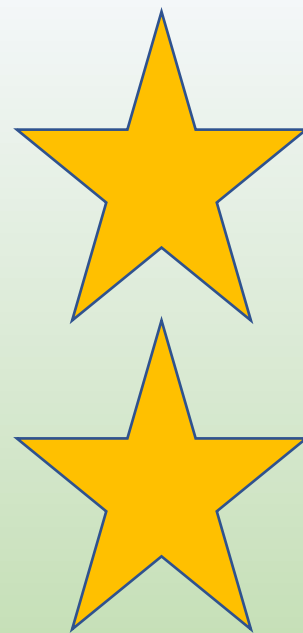
You can use each card more than once.



$0.002 \square \square \square = 2,000$

How many ways is it possible to complete this calculation?

Talk about it with a partner.



4 Complete the calculations.

a) $13.44 \times 10 = 134.4$

d) $4.4 \times 1,000 = 4,400$

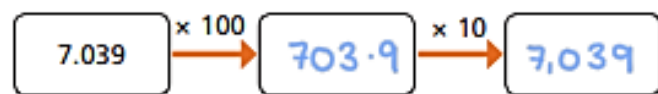
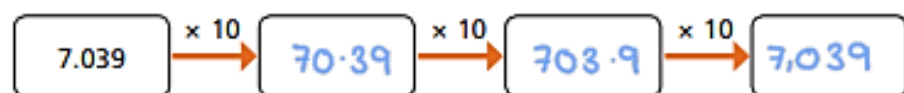
b) $41.4 \times 100 = 4,140$

e) $103 = 1.03 \times 100$

c) $0.415 \times 1,000 = 415$

f) $30.44 = 3.044 \times 10$

5 Complete the diagrams.



What do you notice? Why does this happen?

They all give the same final answer because
 $10 \times 10 \times 10 = 100 \times 10 = 1,000$



6 Write $>$, $<$ or $=$ to compare the number sentences.

$1.4 \times 10 \times 10 \times 10 \quad = \quad 1.4 \times 1,000$

$1.4 \times 10 \times 100 \quad = \quad 1.4 \times 1,000$

$1.4 \times 10 \times 10 \quad < \quad 1.4 \times 1,000$

$1.4 \times 10 \times 2 \quad < \quad 1.4 \times 100$

7 Kim is calculating 14.3×200

She writes this as her answer.

$$14.3 \times 200 = 28.600$$

Explain Kim's mistake.

She has multiplied by 2 and added two
zeros. She hasn't considered the place value
of each digit. $14.3 \times 200 = 2860$

8 Use the cards to complete the calculation.

You can use each card more than once.



E.g. $0.002 \quad \times 10 \quad \times 100 \quad \times 1,000 = 2,000$

Rapid Reasoning...

"When I am multiplying a number by 100, you just add two zeros on the end..."

Try and explain why this statement is not correct, and why you can not just "add two zeros" when multiplying by 100?

Rapid Reasoning... Answer

"When I am multiplying a number by 100, you just add two zeros on the end..."

Simply "adding two zeros" does not work as doing this will not increase the value of the digits, they just stay in the same place value column.

It also doesn't work with decimals -

$$1.5 \times 100 = 150$$

$$1.5 \times 100 \text{ (add two zeros)} = 1.500$$

The 1 and the 5 **have not** increase in value like they have in the first example!