Multiply by 10, 100 and 1,000

1 Complete the calculations and sentences.

Use place value counters to help you.

Th	H	T	O	Tth	Hth
			● ●	● ● ●	

a) 2.3 × 10 = ☐

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

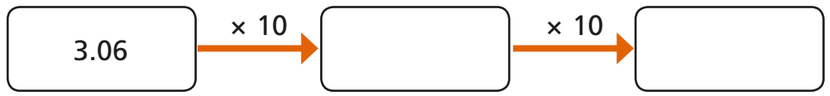
b) 2.3 × 100 = ☐

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

c) 2.3 × 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 × 1,000

Th	H	T	O	Tth	Hth

b) Complete the calculations.

4.4 × 1 = ☐

4.4 × 10 = ☐

4.4 × 100 = ☐

4.4 × 1,000 = ☐

What do you notice?

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4 Complete the calculations.

a) 13.44 × 10 = ☐

b) 41.4 × 100 = ☐

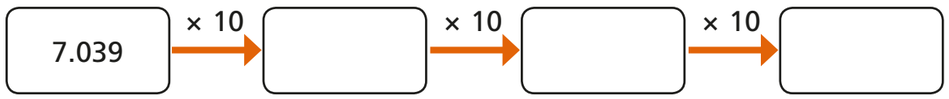
c) 0.415 × 1,000 = ☐

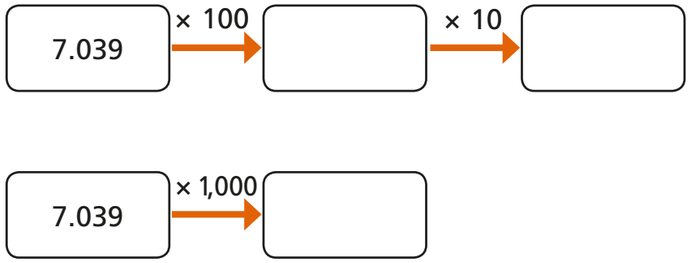
d) 4.4 × ☐ = 4,400

e) ☐ = 1.03 × 100

f) 30.44 = ☐ × 10

5 Complete the diagrams.





What do you notice? Why does this happen?

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

1.4 × 10 × 10 × 10 ◯ 1.4 × 1,000

1.4 × 10 × 100 ◯ 1.4 × 1,000

1.4 × 10 × 10 ◯ 1.4 × 1,000

1.4 × 10 × 2 ◯ 1.4 × 100

7 Kim is calculating 14.3 × 200

She writes this as her answer.

14.3 × 200 = 28.600

Explain Kim's mistake.

8 Use the cards to complete the calculation.

You can use each card more than once.

× 1	× 10	× 100	× 1,000

0.002 ☐ ☐ ☐ = 2,000

How many ways is it possible to complete this calculation?

Talk about it with a partner.

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Divide by 10, 100 and 1,000

1 Complete the calculations and sentences.

Use place value counters to help you.

Th	H	T	O	Tth	Hth
	●	● ● ● ●			

a) 140 ÷ 10 = ☐

When the number is divided by 10 the counters move ☐ place to the right.

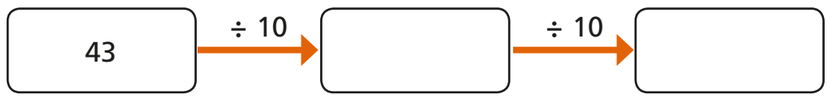
b) 140 ÷ 100 = ☐

When the number is divided by 100 the counters move ☐ places to the right.

c) 140 ÷ 1,000 = ☐

When the number is divided by 1,000 the counters move ☐ places to the right.

2 Complete the diagram.



3 **a)** Draw counters to represent the calculations.

123 ÷ 1

H	T	O	Tth	Hth	Thth

123 ÷ 10

H	T	O	Tth	Hth	Thth

123 ÷ 100

H	T	O	Tth	Hth	Thth

123 ÷ 1,000

H	T	O	Tth	Hth	Thth

b) Complete the calculations.

123 ÷ 1 = ☐

123 ÷ 10 = ☐

123 ÷ 100 = ☐

123 ÷ 1,000 = ☐

What do you notice?

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4 Complete the calculations.

a) 16 ÷ 10 = ☐

b) 43.4 ÷ 100 = ☐

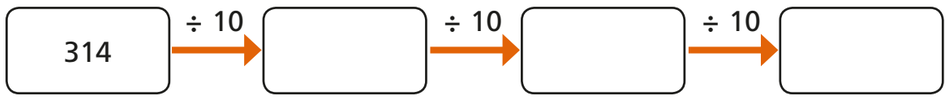
c) 614 ÷ 1,000 = ☐

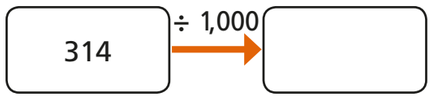
d) 332 ÷ ☐ = 0.332

e) 2.4 ÷ 200 = ☐

f) 5.09 = ☐ ÷ 20

5 Complete the diagrams.





What do you notice? Why does this happen?

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

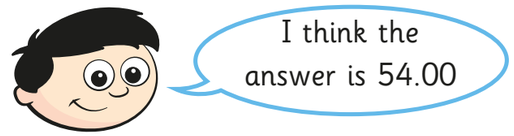
5,400 ÷ 10 ÷ 10 ÷ 10 ◯ 5,400 ÷ 1,000

60 ÷ 100 ÷ 10 ◯ 600 ÷ 100

5.7 ÷ 10 ◯ 57 ÷ 100

5,601 ÷ 1,000 ◯ 5.601 ÷ 10

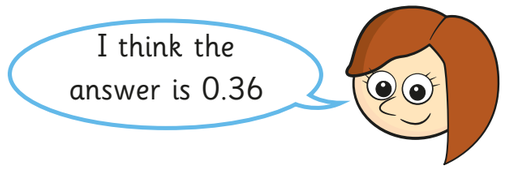
7 Dexter is solving the calculation 5,400 ÷ 100



Is Dexter correct? _____

Explain your reasoning.

8 Rosie is solving the calculation 3,600 ÷ 200



Is Rosie correct? _____

Explain your reasoning.

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Multiply decimals by integers

1 Use place value counters to solve the calculations.

a) 3.2 × 3 = ☐

Ones	Tenths
1 1 1	0.1 0.1
1 1 1	0.1 0.1
1 1 1	0.1 0.1

b) 4.6 × 2 = ☐

Ones	Tenths
1 1 1 1	0.1 0.1 0.1 0.1 0.1 0.1
1 1 1 1	0.1 0.1 0.1 0.1 0.1 0.1

2 Solve the multiplication. Draw your answer.

12.2 × 3 = ☐

Tens	Ones	Tenths

3 Nijah uses long multiplication to solve 3.72 × 3

		3	7	2	
	×			3	
		0	0	6	
		2	1	0	
		9	0	0	
	1	1	1	6	

Use long multiplication to work out the calculations.

a)

		4	8	6	
	×			4	

b)

		2	0	9	
	×			6	

4 Work out the multiplications.

a) 5.2 × 4 = ☐

b) 14.3 × 3 = ☐

c) 6 × 9.1 = ☐

d) ☐ = 2.34 × 3

e) 11.505 × 4 = ☐

f) 9.602 × 6 = ☐

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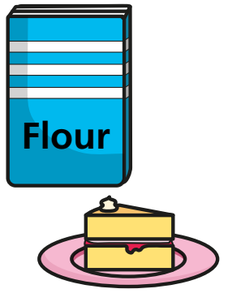
5 0.25 kg of flour is needed to make one cake.

How much flour is needed to make four cakes?



6 Work out the multiplications.

a) 7.2 × 2 = ☐

7.2 × 4 = ☐

14.4 × 4 = ☐

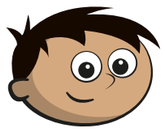
b) ☐ = 3.45 × 3

☐ = 34.5 × 3

☐ = 345 × 3

7.2 × 8 = ☐

7 Amir is solving 3.4 × 4



To solve this, I did 34 × 4, which was 136

Then I multiplied my answer by 10 to get an answer of 1,360

Do you agree with Amir? _____

Explain why.

8 Use the digits 1, 2, 3 and 4 once each to create a calculation.

1	2	3	4

☐ . ☐ ☐ × ☐

a) How many different products can you make?

b) What is the greatest possible product?

☐

c) What is the smallest possible product?

☐

d) What is the product closest to 12?

☐

Compare answers with a partner.

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Divide decimals by integers

1 Use place value counters to work out the divisions.

a) 8.4 ÷ 4 = ☐

Ones	Tenths
1 1 1 1 1 1 1 1	0.1 0.1 0.1 0.1

b) 12.3 ÷ 3 = ☐

Tens	Ones	Tenths
10	1 1	0.1 0.1 0.1

2 Work out the division. Draw your answer.

16.4 ÷ 4 = ☐

Tens	Ones	Tenths

3 Brett uses short division to work out 13.2 ÷ 6

$$\begin{array}{r} 0\,2\cdot2 \\ 6\overline{)\,1\,{}^{1}3\cdot{}^{1}2} \end{array}$$

Use short division to work out the calculations.

a)

$$\begin{array}{r} \\ 7\overline{)\,2\,2\cdot4} \end{array}$$

b)

$$\begin{array}{r} \\ 8\overline{)\,1\,8\cdot4\,8} \end{array}$$

4 Work out the divisions.

a) 25.6 ÷ 8 = ☐

b) 14.8 ÷ 4 = ☐

c) 18.48 ÷ 6 = ☐

d) ☐ = 19.45 ÷ 5

e) 202.35 ÷ 3 = ☐

f) 105.12 ÷ 9 = ☐

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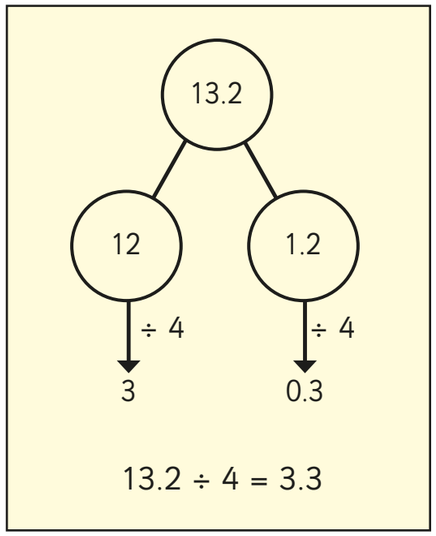
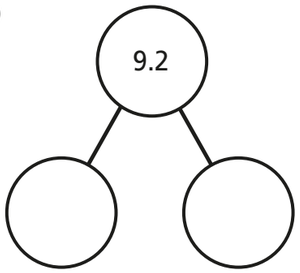
5 Esther solves 13.2 ÷ 4 by partitioning 13.2 into two numbers that are easier to divide.

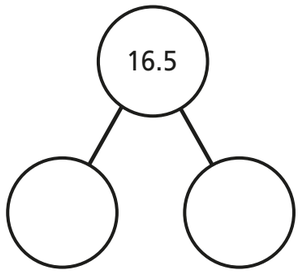


Use Esther's method to complete the part-whole model and calculation.

a)



b)



9.2 ÷ 4 = ☐

16.5 ÷ 3 = ☐

Compare answers with a partner. Did you partition your numbers in the same way?

6 Work out the divisions.

a) 9.64 ÷ 4 = ☐

96.4 ÷ 4 = ☐

0.964 ÷ 4 = ☐

9.64 ÷ 8 = ☐

b) 19.44 ÷ 9 = ☐

19.53 ÷ 9 = ☐

19.62 ÷ 9 = ☐

7 Fill in the missing numbers.

3.6 ÷ 4 = 36 ÷ ☐

3.6 ÷ 4 = ☐ ÷ 8

8 Complete the calculation.

8.4 ÷ ☐ = 4.2 ÷ ☐

How many different solutions can you find?

What patterns do you notice? Talk about it with a partner.

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Decimals as fractions

1 Complete the sentences.

a)

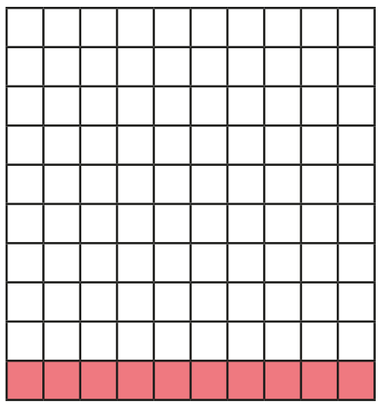
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

The whole has been divided into ☐ equal parts.

Each part is worth ☐

This is equivalent to ☐

b)



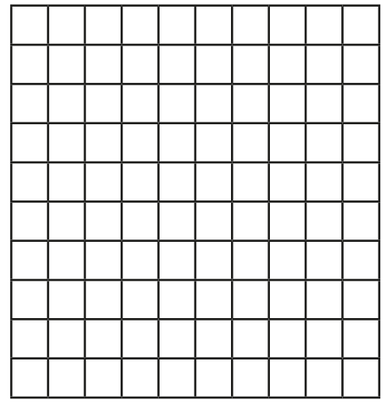
The whole has been divided into ☐ equal parts.

Each part is worth ☐

☐ parts out of ☐ are shaded.

This is equivalent to ☐

2 **a)** Shade 0.17 of the hundred square.



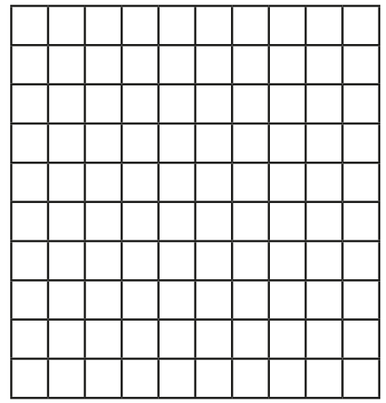
Complete the sentence.

☐ parts out of ☐ are shaded.

Write 0.17 as a fraction.

0.17 = ☐

b) Shade 0.2 of the hundred square.



Complete the sentence.

☐ parts out of ☐ are shaded.

Write 0.2 as a fraction in its simplest form.

0.2 = ☐

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3

0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

0.2	0.2	0.2	0.2	0.2

Use the bar models to fill in the missing numbers.

$0.2 = \frac{\square}{10} = \frac{1}{\square}$

$0.4 = \frac{\square}{10} = \frac{2}{\square}$

$\frac{\square}{\square} = \frac{\square}{10} = \frac{4}{5}$

4 Fill in the missing numbers.

a) $0.54 = \frac{\square}{100} = \frac{\square}{50}$

b) $0.6 = \frac{\square}{10} = \frac{\square}{5}$

c) $0.3 = \frac{\square}{10} = \frac{\square}{100}$

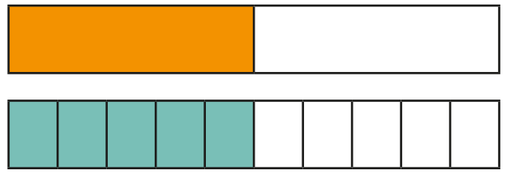
d) $\frac{\square}{\square} = \frac{9}{100}$

e) $\frac{\square}{\square} = \frac{9}{10}$

f) $\frac{21}{50} = \frac{\square}{100} = \frac{\square}{\square}$

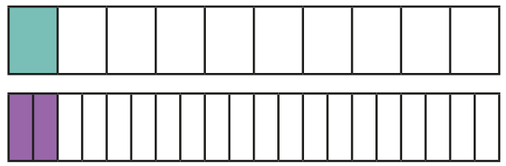
5 Use the bar models to fill in the missing numbers.

a)



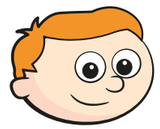
$\frac{1}{2} = \frac{\square}{10} = \frac{\square}{\square}$

b)



$\frac{\square}{\square} = \frac{\square}{10} = \frac{\square}{20}$

6



Ron says: $0.3 = \frac{3}{10}$ so $0.37 = \frac{37}{10}$

Draw a diagram to show that Ron is wrong.

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