



























Three decimal places

1

Use place value counters to make the numbers. Draw your answers.

a) 1.343

т	0	Tth	Hth	Thth
	0	00	000	000

b) 16.052

т	0	Tth	Hth	Thth
0	000		0000	0

c) 7.001

т	0	Tth	Hth	Thth
	0000			0

d) 70.01

т	0	Tth	Hth	Thth
000 00 00			0	

2	Complete th	ne sentences.
		OTthImage: Constraint of the second
	There are	3 ones.
	There are	4 hundredths.
	There are	5 thousandths.
	The numbe	r in digits is $3 \cdot 245$
3	Write the v	alue of the 3 in each nu
	a) 3.65	3 ones
	b) 0.093 .	3 thousandths
	c) 18.31	3 tenths
	d) 72.439	3 hundredths
	e) 32.701 _	3 tens
	f) 19.03	3 hundredths

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number.

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Complete the part-whole models.



5

Complete the number sentences.

a)
$$17.134 = 10 + 7 + 0.1 + 0.03 + 0.004$$

b) $94.077 = 90 + 4 + 0.07 + 0.007$
c) $34.079 = 30 + 4 + 0.07 + 0.009$

6

Complete the number sentences.

1.456 = 1 + 0.4 + 0.05 + 0.006 1.456 = 1 + 0.3 + 0.15 + 0.006 1.456 = 1 + 0.2 + 0.25 + 0.006 1.456 = 1 + 0.45 + 0.006

7	Mo and Annie hav	ve represented
	Mo's chart	O • Tth
		•
	Annie's chart	O • Tth
		•
	00	Only my grid shows 0.121
	Mo	
	Who do you agree	e with?An
	Explain why.	
	Annie coul	d exchance
	one tenth	then th
	the same.	

0.121 on their place value charts.











Multiply by 10, 100 and 1,000



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3

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

4.4 × 1

Th	Н	т	0	Tth	Hth
			000	00	



Th	Н	Т	0	Tth	Hth
		J		000	

 4.4×100

Th	Н	Т	0	Tth	Hth
	ł		00	00	

 $4.4 \times 1,000$

Th	Н	Т	0	Tth	Hth
			00	00	
			$\overline{00}$	00	

b) Complete the calculations.



What do you notice?

Complete the calculations and sentences.

Use place value counters to help you.



a) 2.3 × 10 = 23

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

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

2,300 **c)** 2.3 × 1,000 =

> When the number is multiplied by 1,000 the counters move 3 places to the left.



Complete the diagram.











How many ways is it possible to complete this calculation? Talk about it with a partner.

ч	2	and	added	two
J sia	dored	the	place	value
α	") =	2860		







Divide by 10, 100 and 1,000





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3

a) Draw counters to represent the calculations.

123 ÷ 1

н	т	0	Tth	Hth	Thth
0	00				







Н	Т	0	Tth	Hth	Thth
0	00	00		1	



Н	т	0	Tth	Hth	Thth
0	00	00			7

b) Complete the calculations.



What do you notice?

Complete the calculations and sentences.

Use place value counters to help you.



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

b) 140 ÷ 100 = 1.4

When the number is divided by 100 the counters move 2 places to the right.

c) 140 ÷ 1,000 =

0.14

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

Complete the diagram.

2





Tth	Hth	Thth
\rightarrow		





5,400 ÷ 1,000

600 ÷ 100

57 ÷ 100

5.601 ÷ 10





Multiply decimals by integers



3

Nijah uses long multiplication to solve 3.72×3

	3	7	2	
×			3	
	0	0	6	
	2	1	0	
	q.	0	0	
1	1.	1	6	

Use place value counters to solve the calculations.

a) 3.2 × 3 = 9.6

1



b) 4.6 × 2 =
$$9 \cdot 2$$

Ones	Tenths
	0.1 0.1 0.1 0.1 0.1
	0.1
	0.1 0.1 0.1 0.1 0.1
	0.1



Solve the multiplication. Draw your answer. 12.2 × 3 = 36 · 6

Tens	Ones	Tenths
000	000	000

Use long multiplication to work out the calculations.





b) 14.3 × 3 =
$$42 \cdot 9$$

c)
$$6 \times 9.1 = 54 \cdot 6$$











12.84



0.234







2	
¹ 2	

b)						
		0	2	3	l	
	8	1	8	-4	8	

)
$$105.12 \div 9 = |1.68|$$





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



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







Division to solve problems

There are 1,360 children in a school. A quarter of the children walk to school. How many children walk to school?

Huan has saved his pocket money for 5 weeks. 2 He gets the same pocket money every week. He has saved £16.65 How much pocket money does Huan get each week?

Tom is running a 6-kilometre race. 3 He has run one-third of the race so far. How many more kilometres does Tom have left to run?

4 km

£3·33

340

White Rose Maths Dora, Ron and Teddy are making paper chains. 4 My paper chain is 1.1 m long. Dora My paper chain is three times longer than Ron's. Teddy a) How long is Ron's paper chain? b) How long is Teddy's paper chain? A water bottle holds 2 litres. A leak in the bottle means 25 ml drips out each day. How many days will it take until the bottle is empty?





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80

days

a) A school bus can hold 30 people. There are 726 children going on a school trip.

How many buses are needed?





b) A cake needs 4 eggs.

How many cakes can be made from 345 eggs?



86

r (ollm

Shop A sells 5 tins of paint for £23.40 Shop B sells 3 tins of the same paint for £14.01

Which shop should Aisha buy her paint from? _____ Explain your reasoning.

Shop A is El. 66 per tin. Shop B is El. 67 per tin so shop B is cheaper

146 ÷ 5 = 29 remainder 1 8 117 ÷ 4 = 29 remainder 1



Do you agree with Whitney? <u>No</u> Explain your thinking. The remainder isn't worth 146 ÷ 5 = 29 · 2 , 117 ÷ 4 <u>29·2 ≠ 29·25</u>

I'm thinking of a 3-digit number. 9 When I divide it by 5, I am left with a remainder of 3 When I divide it by 10, I am left with a remainder of 8 It rounds to 200 to the nearest 100 It has one hundred. What could my number be?

Create your own problem like this for a partner.



1	the	same	amount.	
		-		
2	29	·25		

5,6,7,8 or 9 8











are shaded.

are shaded.

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.

$$0.2 = \frac{2}{10} = \frac{1}{5}$$

$$0.4 = \frac{2}{10} = \frac{2}{5}$$

 $\boxed{\begin{array}{c} \hline 0 & \cdot \\ \hline \end{array}} = \frac{\boxed{\begin{array}{c} 8 \\ 10 \end{array}}}{10} = \frac{4}{5}$

4

Fill in the missing numbers.



c)
$$0.3 = \frac{3}{10} = \frac{30}{100}$$

$$\mathbf{d}) \quad \boxed{\mathbf{0} \cdot \mathbf{0} \mathbf{q}} = \frac{9}{100}$$

e)
$$\bigcirc \cdot \mathbf{q} = \frac{9}{10}$$



5	Use the bar models to fill in the miss
	α)
	b)
6	
	Draw a diagram to show that Ron is
	min and and and and and and and and and an
	m m m m m m m m
	m m m m m m m m m
	White way a
	In The MA
	In In In In It In It

missing numbers.



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

on is wrong.

 $0.3 = \frac{3}{10}$ $0.37 = \frac{37}{100}$









c)
$$\frac{9}{25} = \frac{36}{100} = 0.36$$

d) $\frac{24}{200} = \frac{12}{100} = 0.12$

4

Some fractions can be converted to have a denominator of 1,000 to find their decimal equivalent.







Convert the fractions to their decimal equivalents.



















Compare answers with a partner.

o convert enominator find the uivalent.
ee. You need t it to have a ator of 1,000 Alex
$\frac{30}{100} = 0.30 = 0.3$
1,000 = 0.300 = 0.3





Fractions to decimals (2)

1

Fractions can be expressed as divisions.

For example,
$$\frac{1}{2} = 1 \div 2$$

Write the fractions as divisions.

7





b) $\frac{2}{3} = 2$ ÷ 3

c) $\frac{4}{7} =$



2

Use place value counters to find the decimal equivalent of $\frac{2}{5}$ You can draw on the place value chart to help you with exchanging.

$$\frac{2}{5} = 2 \div 5 = 0 \cdot 4$$

Ones	Tenths	
	0 0 0	
	$\circ \circ \circ \circ$	
	$\circ \circ \circ \circ$	
	0000	
	0 0 0 O	

3

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Fractions can be converted to decimals by using the short division method.

For example,
$$\frac{1}{8} = 1 \div 8$$



Use the short division method to find the decimal equivalent of the fractions.

















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I converted $rac{1}{2}$ to a decimal and got the answer 2	
made. <u>he should have done</u>	
, it is smaller than 0.5 but greater	
king of?	
ে ন্ব হিন্দু হৈ হেন্দু হৈ হৈ হেন্দু হৈ হৈ হৈ হেন্দু হৈ হৈ হৈ হৈ হেন্দু হৈ	\bigcirc
find the decimal equivalent of $\frac{1}{3}$	
	\bigcirc

