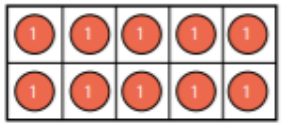
Dividing 1 digit by 10

1 Look at the ten frames.

a)



What number is represented? 10

Complete the division. 10 ÷ 10 = 1

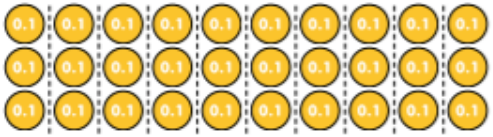
b)

What number is represented? 1

Complete the division. 1 ÷ 10 = 0·1

c) What is the same? What is different?

2 **a)** What calculation is represented by the counters?



3 ÷ 10 = 0·3

b) Complete the number sentence.

3 ones divided by ten = 3 tenths.

3 **a)** Draw counters on the place value chart to show 7

Ones	Tenths
○○○○ ○○○	

b) Complete the division. 7 ÷ 10 = 0·7

c) Draw counters on the place value chart to show your answer.

Ones	Tenths
	○○○○ ○○○

d) What do you notice?

e) Complete the sentence.

7 ones divided by ten = 7 tenths.

4 **a)** Use a place value chart to represent 9

b) Move the counters to the right to represent 0.9

c) Complete the division.

9 ÷ 10 = 0·9

d) What do you notice?

e) Complete the sentence.

9 ones divided by ten equals 9 tenths.

5

Dora: To divide by 10, you split the counters into 10 equal parts.

Alex: To divide by 10, you put the counters on a place value chart and move them one column to the right.

Who is correct? Circle your answer.

Dora **Alex** **neither** **both**

Compare answers with a partner.

6 Here is a one-digit number on a place value chart.

Ones	Tenths
6	

a) Complete the division.

6 ÷ 10 = 0·6

b) Write your answer on the place value chart.

O	Tth
	6

c) In your own words, describe what happens to the digits in a number when you divide by 10

They move one place to the right.

d) Use this method to work out the divisions.

7 ÷ 10 = 0·7 8 ÷ 10 = 0.8

7 Complete the divisions.

a) 4 ÷ 10 = 0·4

b) 2 ÷ 10 = 0·2

c) 0·5 = 5 ÷ 10

d) 9 ÷ 10 = 0·9

e) 3 ÷ 10 = 0.3

f) 1 ÷ 10 = 0.1

8 Complete the number sentences.

a) 6 ÷ 2 ÷ 10 = 3 ÷ 10

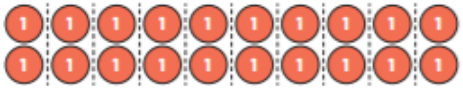
b) 24 ÷ 6 ÷ 10 = 4 ÷ 10

c) 42 ÷ 14 ÷ 10 = 21 ÷ 7 ÷ 10

d) Write a problem like this for a partner to solve.

Dividing 2 digits by 10

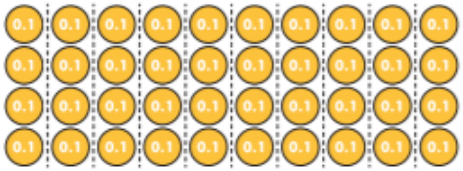
1 **a)** The array shows 20 shared between 10



Complete the calculation.

20 ÷ 10 = 2

b) The array shows 4 shared between 10



Complete the calculation.

4 ÷ 10 = 0·4

c) Complete the calculation.

24 ÷ 10 = 2·4

Compare answers with a partner.

2 **a)** Draw counters to represent 30 on the place value chart.

Tens	Ones	Tenths
○ ○○		

Complete the division.

30 ÷ 10 = 3

Draw counters to show your answer on the place value chart.

Tens	Ones	Tenths
	○ ○○	

b) Draw counters to show 35 on the place value chart.

Tens	Ones	Tenths
○ ○○	○○○○○	

Complete the division.

35 ÷ 10 = 3·5

Draw counters to show your answer on the place value chart.

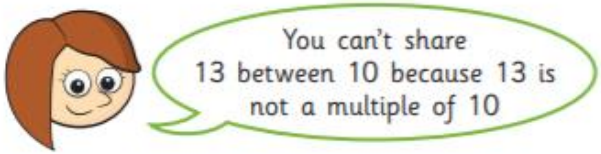
Tens	Ones	Tenths
	○ ○○	○○○○○

c) What do you notice about your answers in parts a) and b)?

d) Complete the sentence.

When dividing by 10, you move the counters 1 place to the right.

3

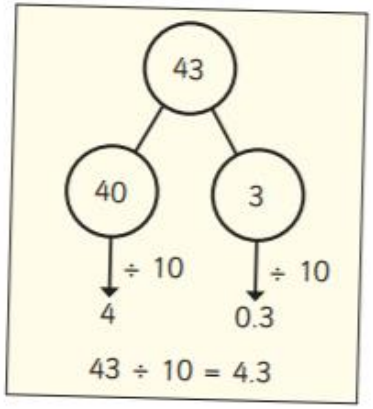


Do you agree with Rosie? No

Explain your answer.

4 Dexter is calculating 43 ÷ 10

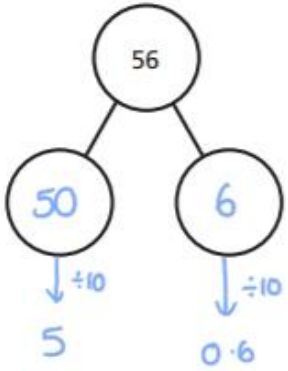
Here are Dexter's workings.



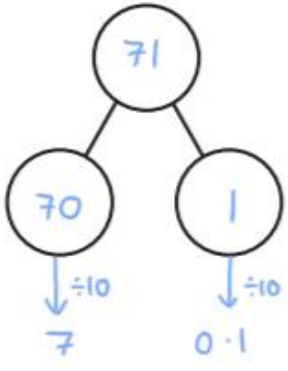
a) Talk to a partner about why Dexter's method works.

b) Use Dexter's method to complete the divisions.

56 ÷ 10 = 5·6



71 ÷ 10 = 7·1



5 Complete the divisions.

a) 37 ÷ 10 = 3·7

b) 11 ÷ 10 = 1·1

c) 48 ÷ 10 = 4·8

d) 99 ÷ 10 = 9·9

e) 80 ÷ 10 = 8

f) 2·9 = 29 ÷ 10

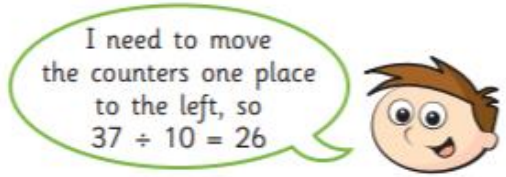
g) 63 ÷ 10 = 6.3

h) 3.9 = 39 ÷ 10

6 This Gattegno chart shows the number 37

100	200	300	400	500	600	700	800	900
10	20	30	40	50	60	70	80	90
1	2	3	4	5	6	7	8	9
0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

a)



Do you agree with Teddy? No

Explain your answer.

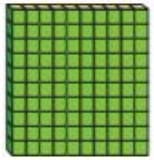
37 ÷ 10 = 3·7

b) How can you use a Gattegno chart to divide by 10?

Hundredths

1

I'm going to use this piece to represent 1



What is the value of each of these pieces?
Give your answer as a fraction.

a) 

$\frac{1}{10}$

b) 

$\frac{1}{100}$

2 Write <, > or = to compare the fractions.

a) $\frac{1}{10} > \frac{9}{100}$

c) $\frac{1}{10} < \frac{20}{100}$

b) $\frac{1}{10} < \frac{12}{100}$

d) $\frac{2}{10} = \frac{20}{100}$

3

Eva

You can only partition 25 hundredths into 2 tenths and 5 hundredths.

I can partition it another way.

Jack

Who do you agree with? Jack

Explain why.

25 hundredths = 1 tenth + 15 hundredths

Compare answers with a partner.

4 Fill in the missing numerators to make the statements correct.

a) $\frac{3}{10} = \frac{30}{100}$

b) $\frac{7}{10} = \frac{70}{100}$

c) $\frac{80}{100} = \frac{8}{10}$

d) $\frac{20}{100} = \frac{2}{10}$

e) $\frac{27}{100} = \frac{2}{10} + \frac{7}{100}$

f) $\frac{67}{100} = \frac{6}{10} + \frac{7}{100}$

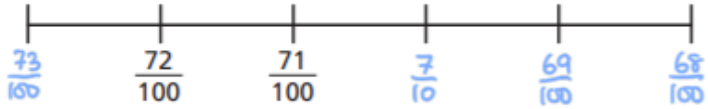
5 Complete the number lines using fractions.

a)

b)

c)

d)



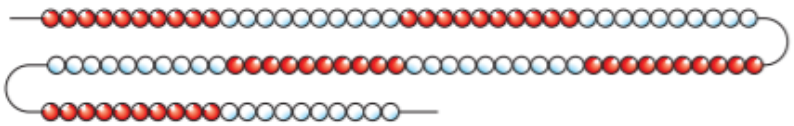
6 Amir is counting 67 hundredths on a bead string.

Amir

This will take a long time, because I have to count 67 beads.

You can do it faster by using tenths as well.

Annie

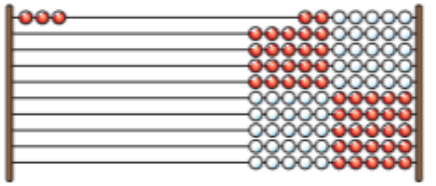
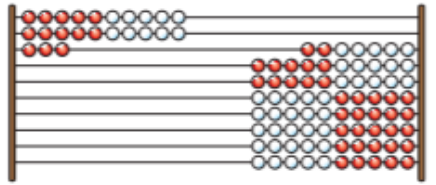
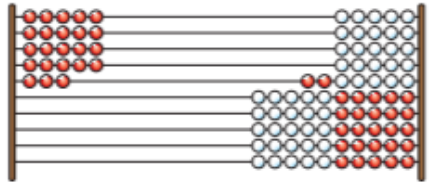
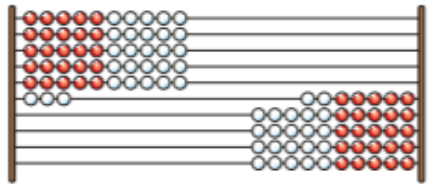


Explain to a partner how to use Annie's method.

7 These are Rekenreks made from 100 beads.

Each Rekenrek represents one whole.

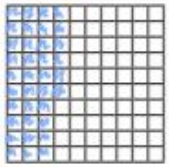
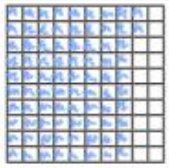
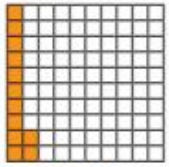
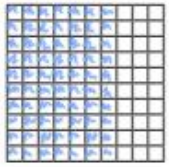
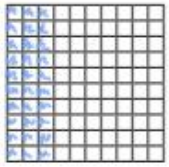
Write the fraction represented on the left and on the right.

		left	right
a)		3/100	97/100
b)		23/100	77/100
c)		23/100	77/100
d)		53/100	47/100

Did you use the same method as your partner?

Hundredths as decimals

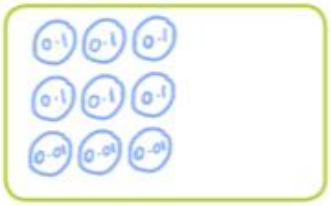
1 Complete the table.

Hundred square	Words	Fraction	Decimal
	thirty-six hundredths	$\frac{36}{100}$	0·36
	eighty-two hundredths	$\frac{82}{100}$	0·82
	twenty-seven hundredths	$\frac{27}{100}$	0.27
	twelve hundredths	$\frac{12}{100}$	0·12
	seven tenths	$\frac{7}{10}$	0·7
	three tenths	$\frac{3}{10}$	0.3

2 Draw decimal place value counters to represent the numbers.

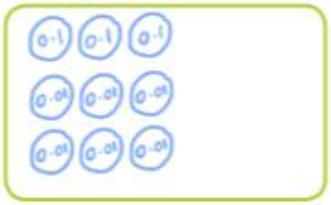
a) 0.03

c) 0.63



b) 0.6

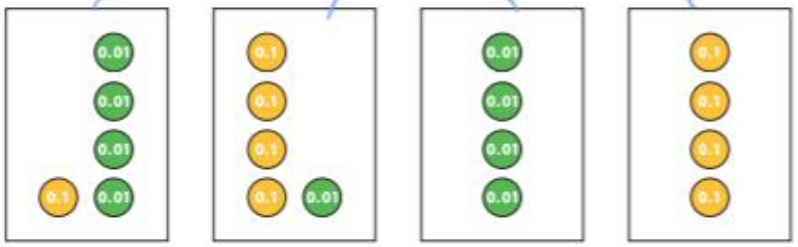
d) 0.36



3 The counters represent tenths and hundredths.

a) Match the decimals to the groups of counters.

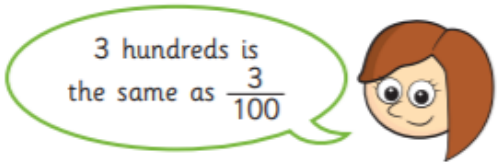
0.04 0.4 0.14 0.41



b) Write each decimal as a fraction.

0.04 = $\frac{4}{100}$ 0.4 = $\frac{4}{10}$ 0.14 = $\frac{14}{100}$ 0.41 = $\frac{41}{100}$

4



Is Rosie correct? No

Explain your answer.

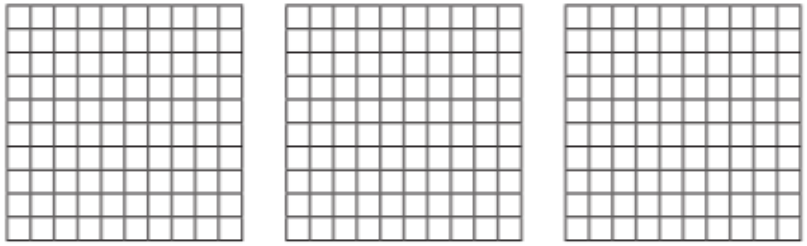
3 hundreds = 300 3 hundredths = $\frac{3}{100}$

5 Match the decimals to the descriptions.

Some of the numbers can be described in two ways.

1.3	one tenth and three hundredths
	thirty hundredths
0.03	one and three tenths
	thirteen tenths
0.3	thirteen hundredths
	three tenths
0.13	three hundredths

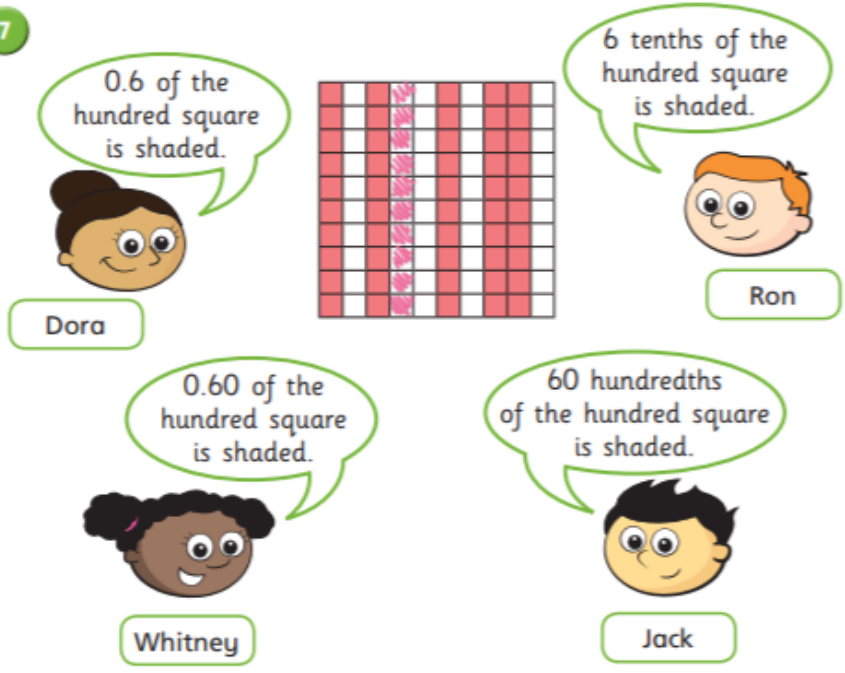
6 Shade the hundred squares to represent 12 hundredths in three different ways. Various answers



Compare answers with a partner.

What is the same? What is different?

7



Who do you agree with? All

Explain why.

Hundredths on a place value grid

1 Write the decimal that is represented in each place value chart.

a)

Ones	Tenths	Hundredths
		●●●●

0·04

b)

Ones	Tenths	Hundredths
	●●●	●●●● ●

0·35

c)

Ones	Tenths	Hundredths
●●●● ●●	●●	●●●● ●●●

6·27

d)

Ones	Tenths	Hundredths
●●		●●●● ●

2·05

e)

Ones	Tenths	Hundredths
●●●	●●●● ●	

3·5

2 Use place value counters to make each number.

Draw your answers on the place value charts.

a) 0.06

Ones	Tenths	Hundredths
		○○○○○○

b) 0.24

Ones	Tenths	Hundredths
	○○	○○○○

c) 1.72

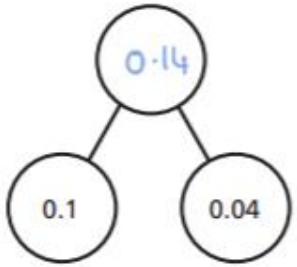
Ones	Tenths	Hundredths
○	○○○○○○○	○○

d) 3.08

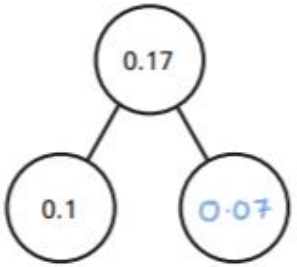
Ones	Tenths	Hundredths
○○○		○○○○○○○○

3 Complete the part-whole models.

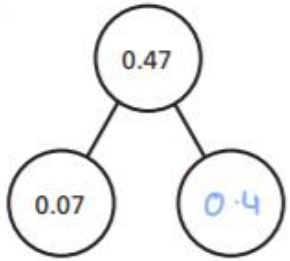
a)



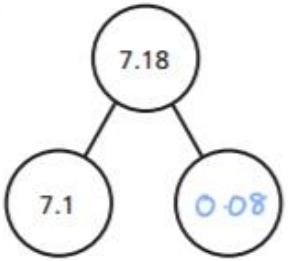
b)



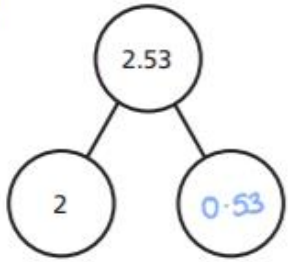
c)



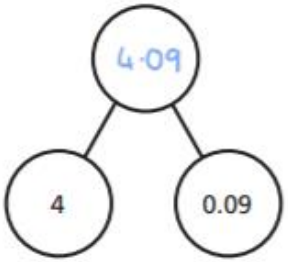
e)



d)



f)



4 Complete the sentences.

a) 2 tenths can be exchanged for [20] hundredths.

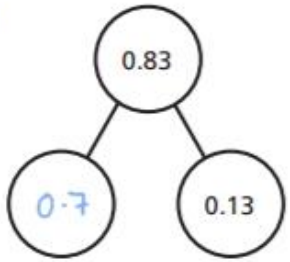
b) 7 tenths can be exchanged for [70] hundredths.

c) 7 tenths and 4 hundredths is equivalent to [74] hundredths.

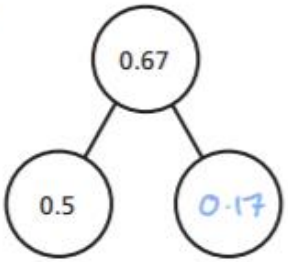
d) [2] tenths and [6] hundredths is equivalent to 26 hundredths.

5 Complete the part-whole models.

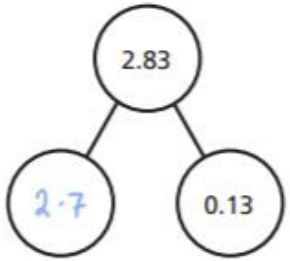
a)



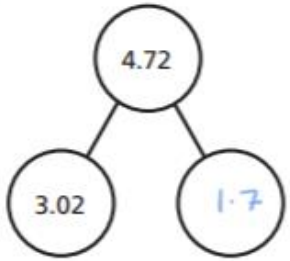
b)



c)



d)



6 Whitney, Tommy, Esther and Dexter each have the same three digit cards and a place value chart.

Ones	Tenths	Hundredths

0 **3** **6**

When they put the cards in the chart with one in each space, they each make a different number.

Use the clues to work out each person's number and write it on their place value chart.

- Dexter makes the greatest number possible.
- Tommy makes the number closest to four.
- Esther and Whitney choose the two numbers closest together (Esther makes the slightly greater number).

Dexter

Ones	Tenths	Hundredths
6	3	0

Tommy

Ones	Tenths	Hundredths
3	6	0

Whitney

Ones	Tenths	Hundredths
0	3	6

Esther

Ones	Tenths	Hundredths
0	6	3