

Divide a 1-digit number by 10

Notes and guidance

In this small step, children divide a 1-digit number by 10, resulting in a decimal number with 1 decimal place.

To begin with, they see that the number is shared into 10 equal parts. This can be shown by exchanging each place value counter worth 1 for ten 0.1 counters.

They recognise that when using a place value chart, they move all of the digits one place to the right when dividing by 10. Any misconceptions around “tricks” that work for this step, such as moving the decimal point to the beginning of the number or adding “zero point” in front of the word should be addressed at this stage. This will help to prevent errors later on, when children progress to dividing 2-digit numbers by 10 and then move on to dividing by 100 and dividing by decimals.

Things to look out for

- Children may overgeneralise and see dividing by 10 as putting the decimal point in front of the number.
- Children may move the digits in the wrong direction.

Key questions

- What number is represented on the place value chart?
- When dividing a number by 10, how many equal parts is the number split into?
- How many tenths are there in 1 whole/2 wholes/3 wholes?
- How can you use counters and a place value chart to show dividing a number by 10?
- What is the same and what is different before and after a 1-digit number is divided by 10?

Possible sentence stems

- _____ is 10 times the size of _____
- _____ is one-tenth the size of _____

National Curriculum links

- Find the effect of dividing a 1- or 2-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths

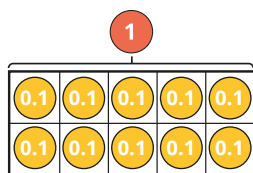
Divide a 1-digit number by 10

Key learning

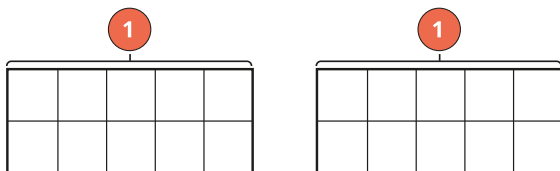
- Huan is dividing 1 by 10

He exchanges 1 whole for 10 tenths and uses a ten frame to share the counters.

He knows that one of these counters is the answer to $1 \div 10$



- Use Huan's model to work out the answer to $1 \div 10$
- Use Huan's method to work out $2 \div 10$

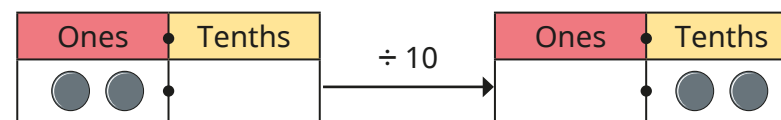


- Use counters to help you work out the divisions.

$3 \div 10$	$4 \div 10$	$7 \div 10$	$9 \div 10$
-------------	-------------	-------------	-------------

What do you notice about your answers?

- Dora uses a place value chart to work out that $2 \div 10 = 0.2$



- What is the value of the 2 in the question?
- What is the value of the 2 in the answer?

- Use a place value chart to find the missing numbers.

$8 \div 10 = \underline{\quad}$ $\underline{\quad} = 9 \div 10$ $0.4 = \underline{\quad} \div 10$

- Write $<$, $>$ or $=$ to make the statements correct.

$5 \div 10$ $10 \div 5$

3 tens $3 \div 10$

7 tenths $7 \div 10$

$3 \div 10$ $4 \div 10$

Divide a 1-digit number by 10

Reasoning and problem solving

Choose a digit card from 1 to 9 and place a counter over the top of that number on the Gattegno chart.

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



To divide by 10,
I need to move the
counter to the right.

Do you agree with Tommy?

Use the Gattegno chart to explain your answer.

No

Complete the number sentences.

$$4 \div 10 = 8 \div \underline{\hspace{1cm}} \div 10$$

$$15 \div 3 \div 10 = \underline{\hspace{1cm}} \div 10$$

$$64 \div \underline{\hspace{1cm}} \div 10 = 32 \div 4 \div 10$$

$$\underline{\hspace{1cm}} \times 10 = 6$$

2

5

8

0.6

Max thinks of a number and
divides it by 10



The answer is
equal to 4 wholes
and 7 tenths.

What number was Max thinking of?

47