

Divide by 100

Notes and guidance

In this small step, children build on their understanding of dividing by 10 and notice the link between dividing by 10 and dividing by 100. They need to be able to visualise making a number one-hundredth the size and understand that “one-hundredth the size” is the same as “dividing by 100”.

Children use concrete resources and a place value chart to see the link between dividing by 100 and the position of the digits before and after the calculation. They realise that when dividing by 100, the digits move two place value columns to the right. They begin to understand that multiplying by 100 and dividing by 100 are the inverses of each other.

Money is a good real-life context for this small step, as exchanging, for example, pounds for pence can be used for the concrete stage.

Things to look out for

- Children may need support in recognising that one-hundredth the size is the same as dividing by 100
- Children may divide by 10 instead of 100
- Children may confuse multiplying and dividing by 100, and move the digits in the wrong direction.

Key questions

- What happens when you divide a number by 10 and then divide the answer by 10 again? How does the final answer compare to the original number?
- How can you use dividing by 10 to help you divide by 100?
- What happens to the digits in a number when you divide by 100?
- How can you use a place value chart to show dividing _____ by 100?
- What is _____ divided by 100?
- What number is one-hundredth the size of _____?

Possible sentence stems

- _____ \div 100 = _____ \div 10 \div 10 = _____ \div 10 = _____
- _____ \div 100 = _____, so _____ = _____ \div 100
- _____ is one-hundredth the size of _____

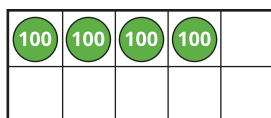
National Curriculum links

- Recall multiplication and division facts for multiplication tables up to 12×12
- Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000 (Y5)

Divide by 100

Key learning

- Use the ten frame and counters to complete the sentences.



There are _____ groups of 100 in 400

$$400 \div 100 = \underline{\quad}$$

- Use counters to complete the divisions.

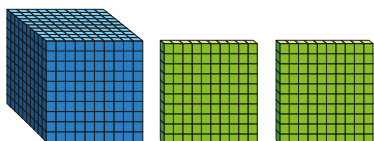
▶ $600 \div 100 = \underline{\quad}$

▶ $900 \div 100 = \underline{\quad}$

▶ $\underline{\quad} = 1,000 \div 100$

▶ $\underline{\quad} = 700 \div 100$

- Teddy uses base 10 to work out 1,200 divided by 100



1,200 = 1 thousand and 2 hundreds
1 thousand = 10 hundreds
There are 12 groups of 100
 $1,200 \div 100 = 12$

Use Teddy's method to complete the divisions.

▶ $3,000 \div 100 = \underline{\quad}$

▶ $4,500 \div 100 = \underline{\quad}$

▶ $\underline{\quad} = 5,100 \div 100$

▶ $2,300 \div 100 = \underline{\quad}$

- Amir uses a place value chart to work out $3,400 \div 100$

Th	H	T	O
●●	●●		

$\div 100$

Th	H	T	O
		●●	●●

I can see that when I divide by 100, all the counters move two places to the right on a place value chart.

$$3,400 \div 100 = 34$$

Use Amir's method to work out the divisions.

$$4,900 \div 100$$

$$5,300 \div 100$$

$$8,100 \div 100$$

- Kim has collected 800 1p coins.

How much money has Kim collected altogether?

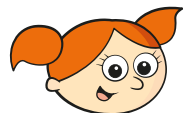
Give your answer in pounds.

Divide by 100

Reasoning and problem solving

Alex and Tommy are dividing numbers by 10 and 100

They both start with the same 4-digit number.



My answer has 8 ones and 2 tens.

Alex

My answer has 2 hundreds, 8 tens and 0 ones.



Tommy

What number did Alex and Tommy both start with?

Who divided by what?

2,800

Alex: 100

Tommy: 10

Use the digits 1 to 9 to complete the calculations.

$$170 \div 10 = _ _$$

$$_20 \times 10 = 3,_00$$

$$1,8_0 \div 10 = 1_6$$

$$_9 \times 100 = 5,_00$$

$$6_ = 6,400 \div 100$$

$$170 \div 10 = 17$$

$$320 \times 10 = 3,200$$

$$1,860 \div 10 = 186$$

$$59 \times 100 = 5,900$$

$$64 = 6,400 \div 100$$

Without working out the answers, use $<$, $>$ or $=$ to compare the calculations.

$$3,600 \div 10 \bigcirc 3,600 \div 100$$

$$2,700 \div 100 \bigcirc 270 \div 10$$

Explain your reasoning.

$>$

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