



# M1g: Can use place value to divide whole numbers by 10, 100 or 1000

Commissioned by The PiXL Club Ltd.  
July 2018

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# Vocabulary: dividing whole numbers using place value

place value  
columns  
divide  
place holder

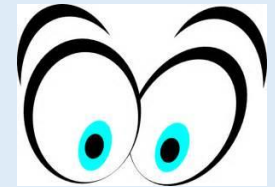


Teacher's Note:  
See 'Vocabulary Shorts' resource below for ideas and games to develop and embed vocabulary.

[Vocabulary Shorts](#)

# Can use place value to divide whole numbers by 10, 100 or 1000

## Dividing by 10, 100 or 1000



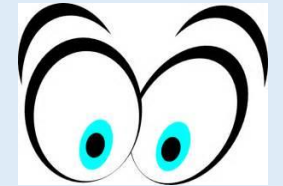
When we divide by **10**, we are making the number **smaller** so each digit moves **one** place to the **right**. Thousands move to the hundreds column, hundreds move to the tens column, tens move to the ones column, ones move to the tenths column. **THE DECIMAL POINT DOES NOT MOVE!**

Ten thousands	Thousands	Hundreds	Tens	Ones	.	Tenths



# Can use place value to divide whole numbers by 10, 100 or 1000

## Dividing by 10



Let's try an example:  $900 \div 10 =$

$$900 \div 10 = 90$$

Ten thousands	Thousands	Hundreds	Tens	Ones	.	Tenths
		9	0	0		
			9	0	.	0

We can see in our place value chart that the answer is actually 90.0 (the units have moved to the tenths column). However, **90.0 is the same as 90** so we can **ignore the 0 in the tenths column!**

# Can use place value to divide whole numbers by 10, 100 or 1000

How would you explain to a friend **why** we don't need the 0 in the tenths column?

Can we also ignore the 0 in the ones column?

Ten thousands	Thousands	Hundreds	Tens	Ones	.	Tenths
		9	0	0		
			9	0	.	0

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Your turn

Divide each of these numbers by 10:

4000

350

582

204



Ten thousands	Thousands	Hundreds	Tens	Ones

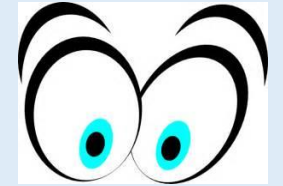
# Reasoning

Show me a number that when divided by 10 gives an answer less than 7.4.



# Can use place value to divide whole numbers by 10, 100 or 1000

## Dividing by 100



What would  $900 \div 100$  be?

$$900 \div 100 = 9$$

Ten thousands	Thousands	Hundreds	Tens	Ones	.	Tenths
		9	0	0		
				9	.	0

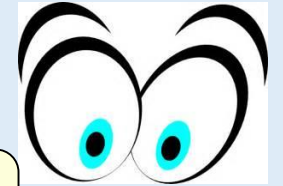
Red arrows indicate the movement of digits from the top row to the bottom row: from Hundreds to Ones, from Tens to Tenths, and from Ones to Hundredths.

Dividing by 100 is the same as dividing by 10 and dividing by 10 again. Therefore, when we divide by **100**, each digit moves **two** places to the **right**.



# Can use place value to divide whole numbers by 10, 100 or 1000

## Dividing by 100



What would  $3200 \div 100$  be?

$$3200 \div 100 = 32$$

Ten thousands	Thousands	Hundreds	Tens	Ones	.	Tenths
	3	2	0	0		
			3	2	.	0

Remember, when we divide by **100**, each digit moves **two** places to the **right**.

# Reasoning

Joe says the answer to  $25 \div 100$   
and  $250 \div 10$  is the same.  
Is he right?



# Problem Solving

How can you use  $6 \div 100 = 0.06$   
to work out  $60 \div 10$ ?



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Your turn

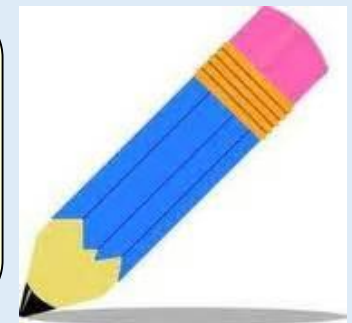
Divide each of these numbers by 100:

5000

2700

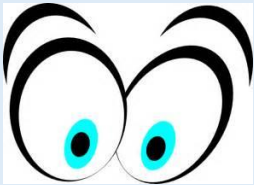
350

108



Ten thousands	Thousands	Hundreds	Tens	Ones

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What digits are missing?

$43 \square \div 10 = \square 3$

The easiest way to answer this question is to put the calculation into a place value chart:-

Ten thousands	Thousands	Hundreds	Tens	Ones	.	Tenths
		4	3	<input type="text"/>		
			<input type="text"/>	3	.	

The calculation in full is:  $430 \div 10 = 43$

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## Your turn

$$4 \square \square 0 \div 100 = \square 3$$

Ten thousands	Thousands	Hundreds	Tens	Ones	.	Tenths
	4	<input type="text"/>	<input type="text"/>	0		
			<input type="text"/>	3	.	

Red arrows indicate the movement of digits: one arrow from the '4' in the thousands place to the tens place, and another arrow from the '0' in the ones place to the ones place.

The calculation in full is:  $4300 \div 100 = 43$

# Can use place value to divide whole numbers by 10, 100 or 1000

## Your turn

5  7 ÷ 10 = 53.

Ten thousands	Thousands	Hundreds	Tens	Ones	.	Tenths
		5	<input type="text"/>	7		
			5	3	.	<input type="text"/>

The calculation in full is: 537 ÷ 10 = 53.7

# Problem Solving

A pile of 1000 sheets of paper measures 14cm. What is the width of one piece of paper?





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Further links:

M1a, M1h, Interactive resources – Multiplying and  
Dividing by 10, 100