LO: We are learning to multiply and divide by 10, 100 and 1000

Top Tips

- Read the number carefully
- Choose a method: mental or written
- Written method: Draw a place value grid
- Digits move left for multiply
- Digits move right for divide
- Remember to use 0 as a place holder
- Double check you have included a decimal point in the right place

10 000	1000	100	10	1	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$

Multiplying		**Dividing**	
X 10	digits move LEFT **1** space	÷ 10	digits move RIGHT **1** space
X 100	digits move LEFT **2** spaces	÷ 100	digits move RIGHT **2** spaces
X 1000	digits move LEFT **3** spaces	÷ 1000	digits move RIGHT **3** spaces

Mathematical Talk

Discuss these questions with someone at home and/or record your written answers.

Multiplying by 10, 100, 1000

Mathematical Talk

Which direction do the digits move when you multiply by 10, 100 or 1,000?

How many places do you move to the left?

When we have an empty place value column to the right of our digits what number do we use as a place holder?

Can you use multiplying by 100 to help you multiply by 1,000? Explain why.

Dividing by 10, 100, 1000

Mathematical Talk

What happens to the digits?

How are dividing by 10, 100 and 1,000 related to each other?

How are dividing by 10, 100 and 1,000 linked to multiplying by 10, 100 and 1,000?

What does 'inverse' mean?

Varied Fluency

Varied Fluency

Complete the following questions using counters and a place value grid.

$234 \times 100 =$ ____   ____ $= 324 \times 100$

$100 \times 36 =$ ____ $1,000 \times 207 =$ ____

$45,020 \times 10 =$ ____   ____ $= 3,406 \times 1,000$

Use $<$, $>$ or $=$ to complete the statements.

$71 \times 1,000$ ◯ 71×100

100×32 ◯ $16 \times 1,000$

48×100 ◯ $48 \times 10 \times 10 \times 10$

Varied Fluency

HTh	TTh	Th	H	T	O
	◯	◯ ◯	◯ ◯ ◯		

What number is represented in the place value grid?
Divide the number by 100
Which direction do the counters move?
How many columns do they move? How do you know how many columns to move?
What number do we have now?

Complete the following using a place value grid.
- Divide 460 by 10
- Divide 5,300 by 100
- Divide 62,000 by 1,000

Divide these numbers by 10, 100 and 1,000

     80,000   300,000   547,000

Calculate $45,000 \div 10 \div 10$
How else could you calculate this?

Reasoning and Problem Solving

Rosie has £300 in her bank account.

Tommy has 100 times more than Rosie in his bank account.

How much more money does Tommy have than Rosie?

Whitney has £1,020 in her bank account.

Tommy has £120 in his bank account.

Whitney says,

I have ten times more money than you

Is Whitney correct? Explain your reasoning.

Jack is thinking of a 3-digit number.

When he multiplies his number by 100, the ten thousands and hundreds digit are the same.

The sum of the digits is 10

What number could Jack be thinking of?

Here are the answers to some problems:

| 5,700 | 405 | 397 | 6,203 |

Can you write at least two questions for each answer involving dividing by 10, 100 or 1,000?

Challenge Questions

Multiply and Divide by 10, 100 and 1000

Correct the calculations that are incorrect:

$34 \times 10 = 340$

$0.6 \times 10 = 60$

$5.7 \times 10 = 57$

$0.003 \text{ x} \times 10 = 0.3$

$8900 \times 10 = 890$

$902 \times 10 = 9200$

$8.03 \times 10 = 80.3$

Multiply and Divide by 10, 100 and 1000

Here is a calculation:

$$0.3 \div 10 =$$

Calculate the answer.

Give two different real life examples where this calculation would be used to give the answer.

Explain how to calculate the answer.

Multiply and Divide by 10, 100 and 1000

In which of these problems will the answer be found by multiplying by 100. Calculate the answers.

1. 100 children are each given £1.20. How much money is given out altogether?

2. At a school disco, there are 34 litres of lemonade. The 100 children at the disco are each given an equal share. How much lemonade does each child receive?

3. Some children lay 100 pencils in a long line. Each pencil is 0.14m long. What is the length of the line of pencils?