

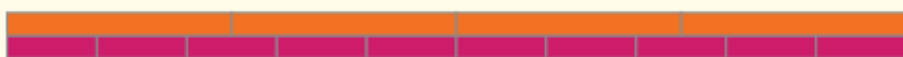
## Maths - Year 4

### Calculating 7: Mental strategies for multiplying and dividing by 10 and 100

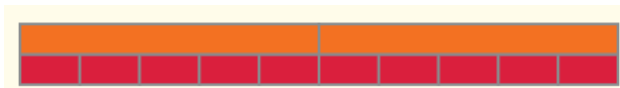
Key Vocabulary		Mathematical Skills
Grouping / sharing	Occurs in dividing when we know an amount and want to find out how many times a different amount will go into it, e.g. 2 goes into 10 five times.	<ul style="list-style-type: none"> <li>- Notice regular patterns when multiplying or dividing by 10.</li> <li>- Explain what always happens when multiplying or dividing by 10.</li> <li>- Notice regular patterns when multiplying or dividing by 100.</li> <li>- Use known multiplying facts to derive facts for multiplying with whole tens or hundreds, e.g. use <math>3 \times 5</math> to derive <math>3 \times 50</math> and <math>3 \times 500</math>.</li> </ul>
Commutative	When adding or multiplying 2 numbers, the answer will be the same no matter which order the numbers are in.	
Inverse	The reverse or the opposite.	
Ratio	A way of comparing two or more quantities measured in the same units, e.g. if $a$ is 3 times as much as $b$ this comparison can be written as the ratio $a : b$ is $3 : 1$ .	
Scale up/ scale down	Describes the amount by which something is increased or reduced to make it larger or smaller in proportion.	

### Mathematical Methods

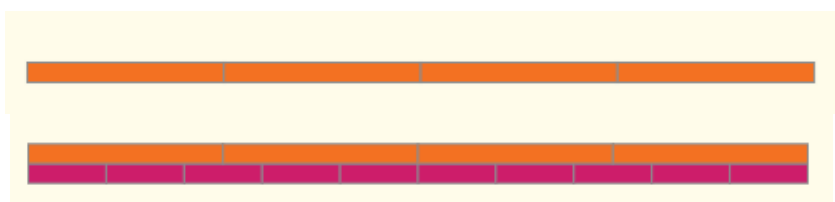
- Multiplying by 10 in a scaling problem e.g.  $4 \times 10 = 40$  or  $10 \times 4 = 40$ .



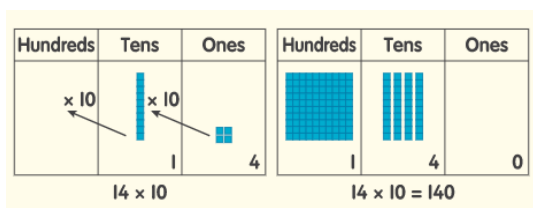
- Finding a rule for multiplying by 10 e.g. exploring how many ten rods are the same as a given number.



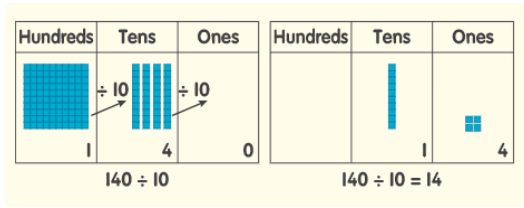
- Dividing multiples of 10 by 10 e.g.  $40 \div 10 = 4$ .



- Making connections between multiplying by 10 and place value.



- Making connections between dividing by 10 and place value.

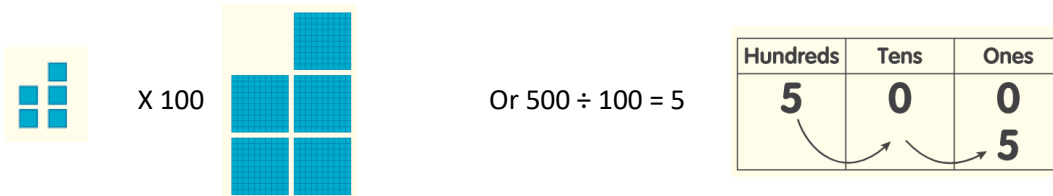


- Exploring connections between multiplying and dividing by 10 e.g.

Item	Number in 1 pack	Number in 10 packs
Pens	10	
Pencils	12	
Rubbers	25	
Exercise books	50	

Item	Number in 1 pack	Number in 10 packs
Felt pens		100
Coloured pencils		180
Rulers		240
Paper clips		1000

- Multiplying and dividing by 100.



### Can you..?

- Find 10 times this amount:

Hundreds	Tens	Ones
	2	5

- Fran saved the same amount each week. After 10 weeks, she had saved £25.00. What amount did she save each week?

- If 70m was made 10 times smaller, what would the new measurement be?