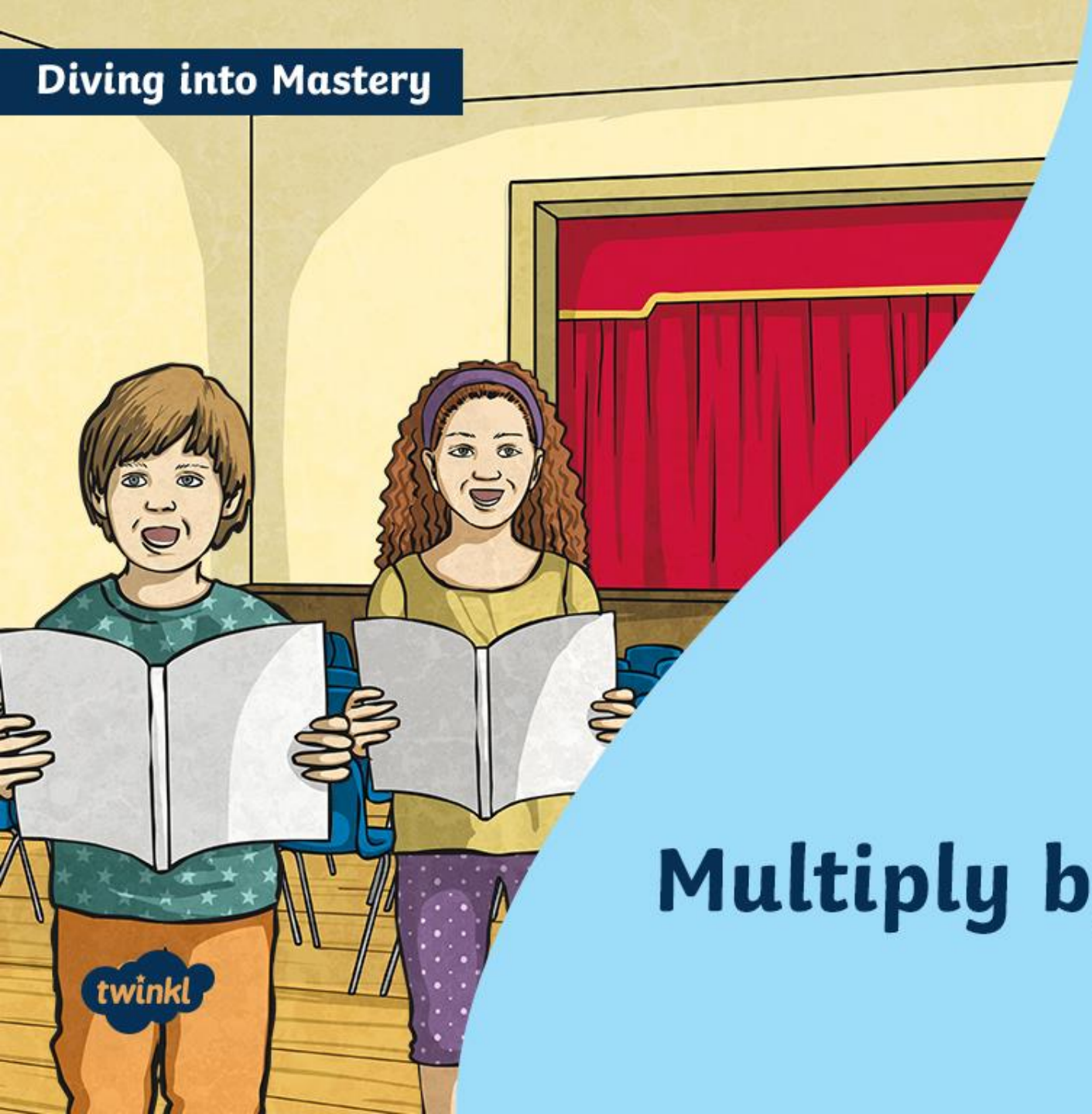
Diving into Mastery



Multiply by 100

Diving into Mastery Guidance for Educators

Each activity sheet is split into three sections, diving, deeper and deepest, which are represented by the following icons:

Diving

Deeper

Deepest

These carefully designed activities take your children through a learning journey, initially ensuring they are fluent with the key concept being taught; then applying this to a range of reasoning and problem-solving activities.

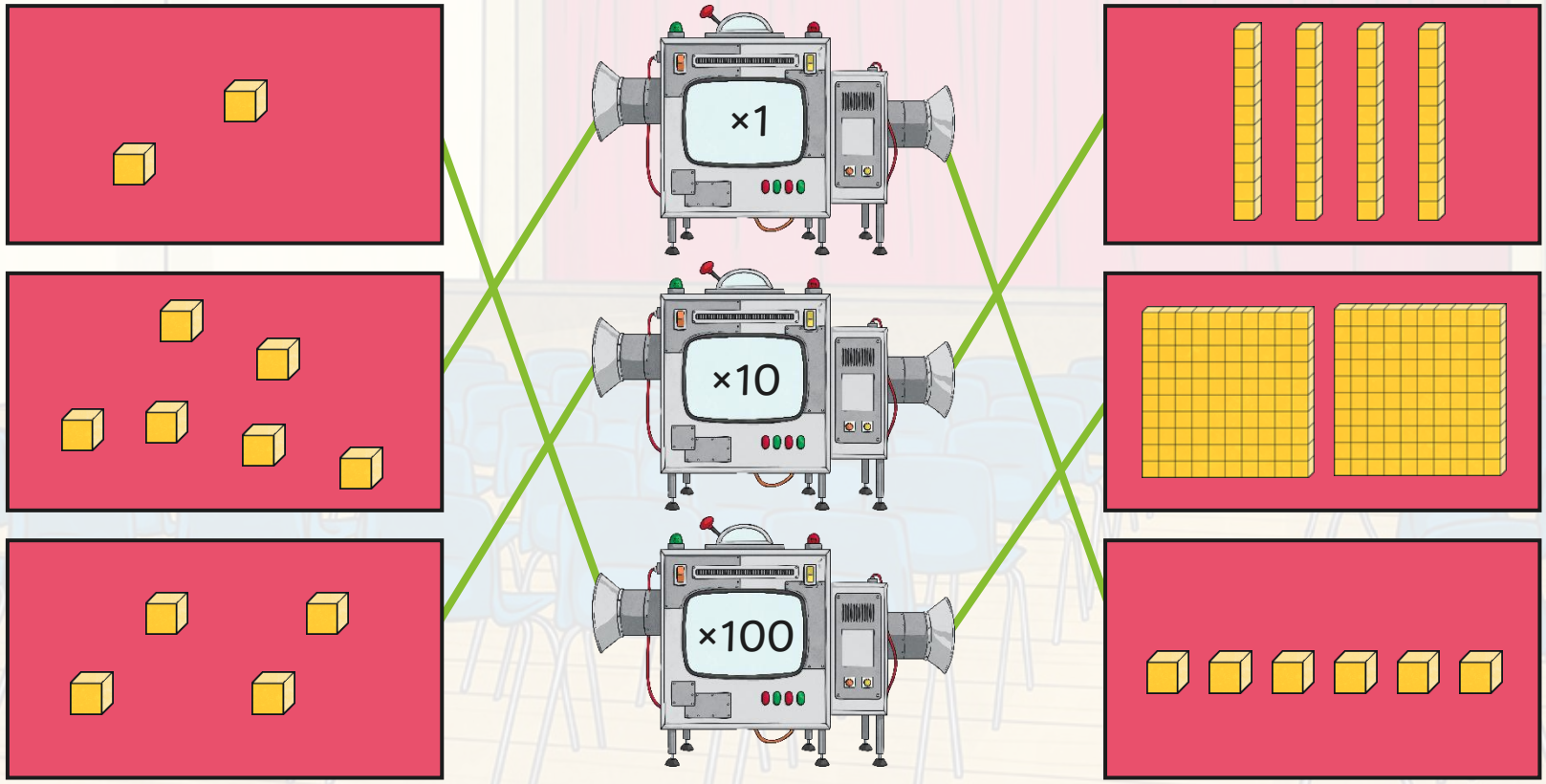
These sheets might not necessarily be used in a linear way. Some children might begin at the 'Deeper' section and in fact, others may 'dive straight in' to the 'Deepest' section if they have already mastered the skill and are applying this to show their depth of understanding.

Aim

- Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers.

Multiply by 100 | **Diving**

Match the images to the correct function machine to show the inputs and outputs.



Multiply by 100 | **Diving**

Use the place value grids to show the effect of each calculation before finding the answer.

9 × 1 =

H	T	O
		●●●● ●●●● ●

9 × 10 =

H	T	O
	●●●● ●●●● ●	

9 × 100 =

H	T	O
●●●● ●●●● ●		

23 × 1 =

Th	H	T	O
		●●	●●●

23 × 10 =

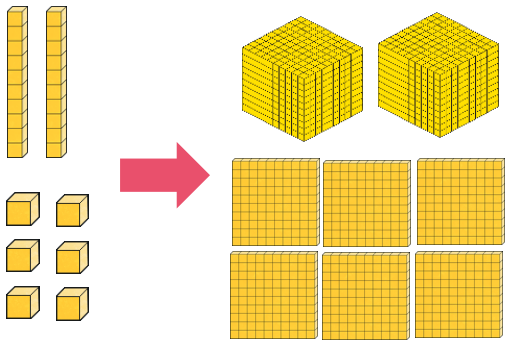
Th	H	T	O
	●●	●●●	

23 × 100 =

Th	H	T	O
●●	●●●		

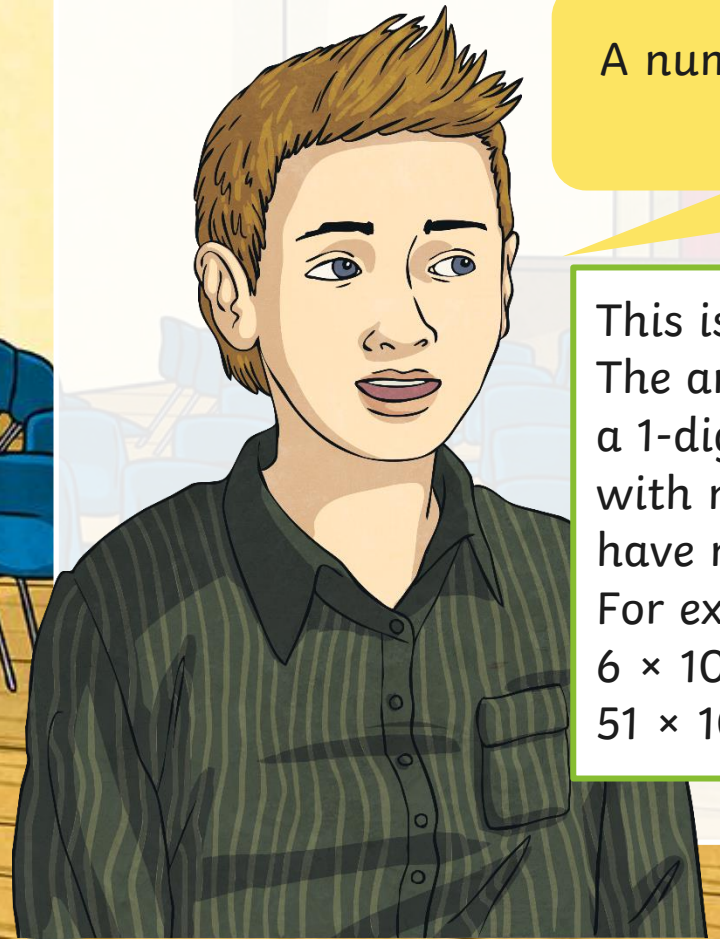
Multiply by 100 **Deeper**

Colin and Meena have been calculating the answer to 26 multiplied by 100. Look at their representations and answers.
Who is correct and who is incorrect? Explain why.

Name	Representation	Correct or Incorrect?	Explanation
Colin 		✓	When you multiply a number by 100, each digit becomes 100 times greater. The 6 ones become 6 hundreds and the 2 tens become 2 thousands.
Meena 	$26 \times 10 \times 10 \times 10$	✗	Meena is incorrect because multiplying by 10, 10 and 10 again is actually multiplying by 1000.

Multiply by 100 **Deeper**

Is Charlie's statement sometimes, always or never true?
Explain your reasoning.

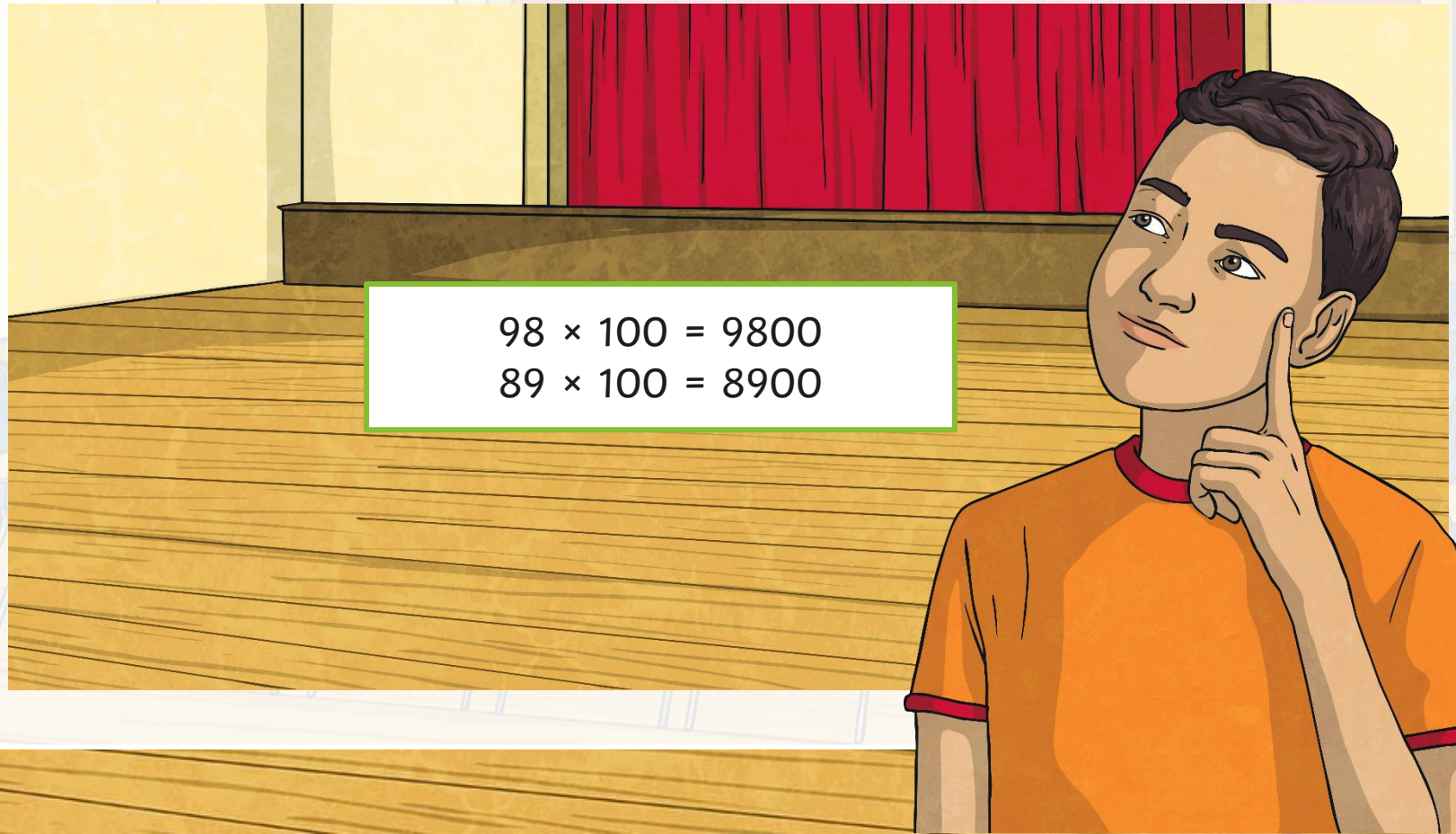


A number multiplied by 100 will always have an answer with 3 digits.

This is sometimes true.
The answer will only have 3 digits if you multiply a 1-digit number by 100. If you multiply a number with more than 1 digit by 100, your answer will have more than 3 digits.
For example:
6 × 100 = 600 (3-digit number)
51 × 100 = 5100 (4-digit number)

Multiply by 100 | **Deepest**

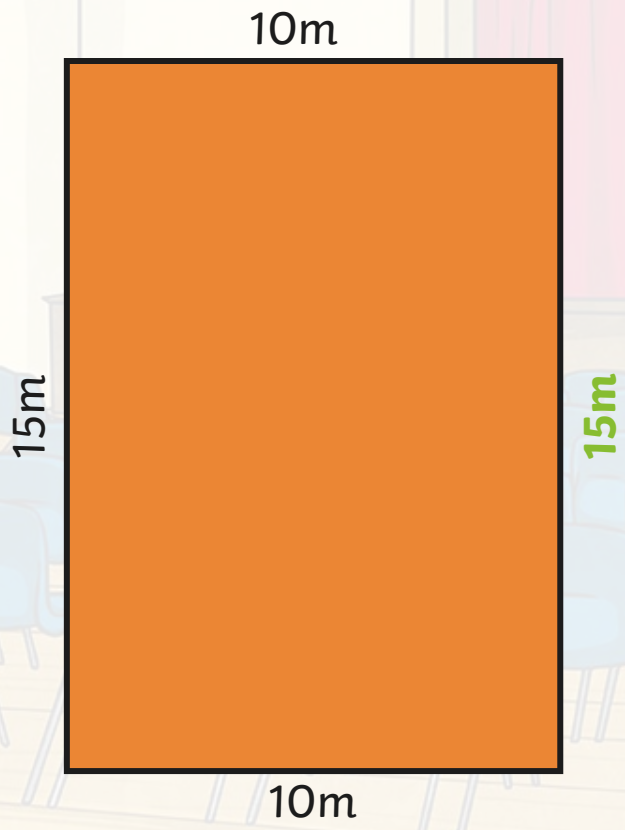
Ed multiplies a whole number by 100. His answer has four digits. The sum of the digits is 17. What could Ed's original number and calculation have been? How many possible answers could there have been?



$98 \times 100 = 9800$
$89 \times 100 = 8900$

Multiply by 100 | **Deepest**

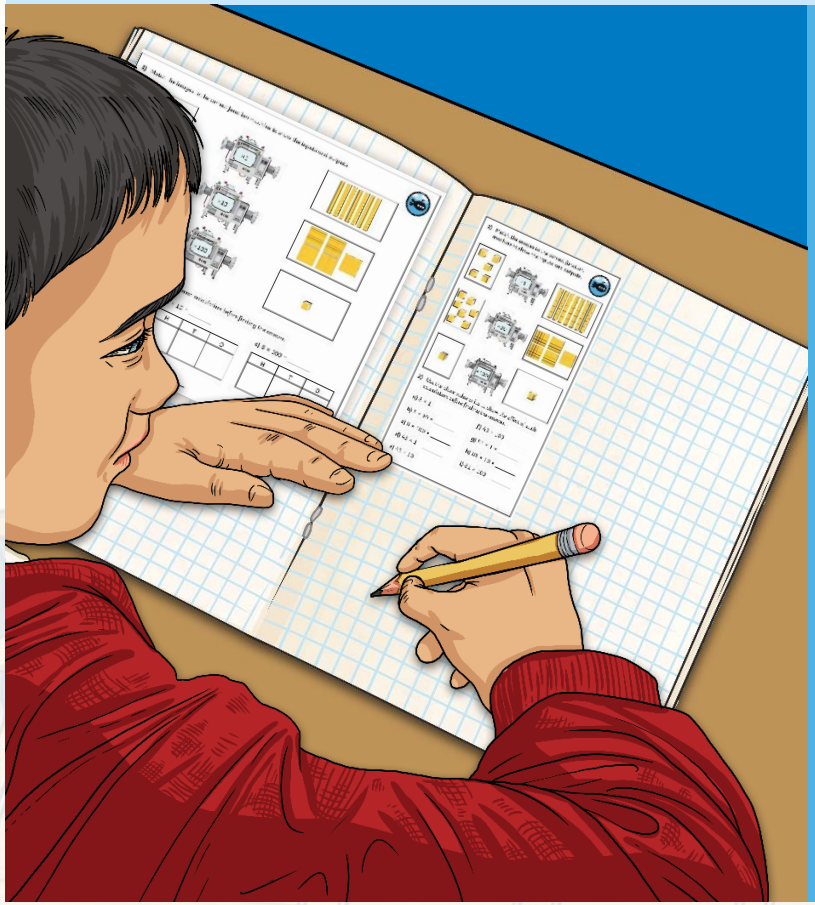
A school hall has a perimeter of 50m. What is the length of the missing side? Give your answer in centimetres.

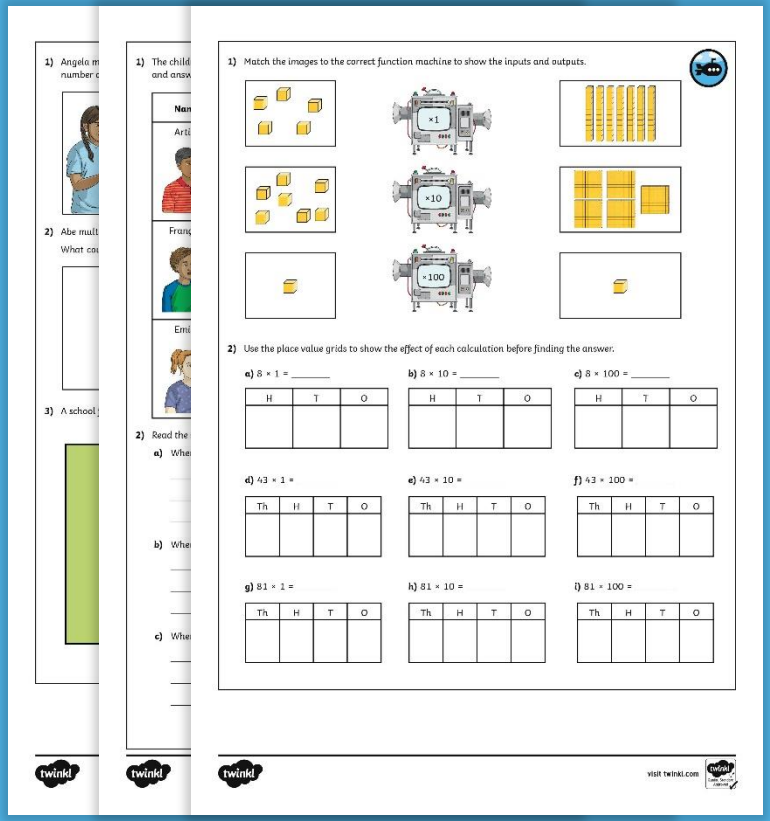


50 - 10 - 10 - 15 = 15
15 × 100 = 1500
15m = 1500cm

Multiply by 100

Dive in by completing your own activity!





1) Match the images to the correct function machine to show the inputs and outputs.

×1

×10

×100

2) Use the place value grids to show the effect of each calculation before finding the answer.

a) 8 × 1 = _____

b) 8 × 10 = _____

c) 8 × 100 = _____

H	T	O

d) 43 × 1 =

e) 43 × 10 =

f) 43 × 100 =

Th	H	T	O

g) 81 × 1 =

h) 81 × 10 =

i) 81 × 100 =

twinkl

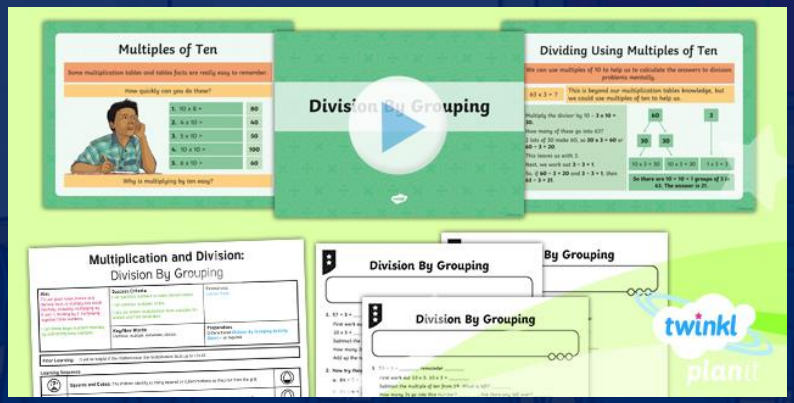
visit twinkl.com

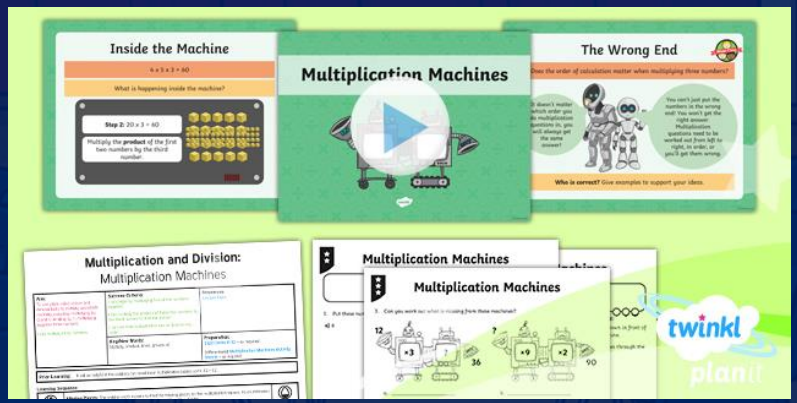
Need Planning to Complement this Resource?

National Curriculum Aim

Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers.

For more planning resources to support this aim, click here.





Twinkl PlanIt is our award-winning scheme of work with over 4000 resources.

twinkl planit


twinkl
twinkl
Quality Standard
Approved