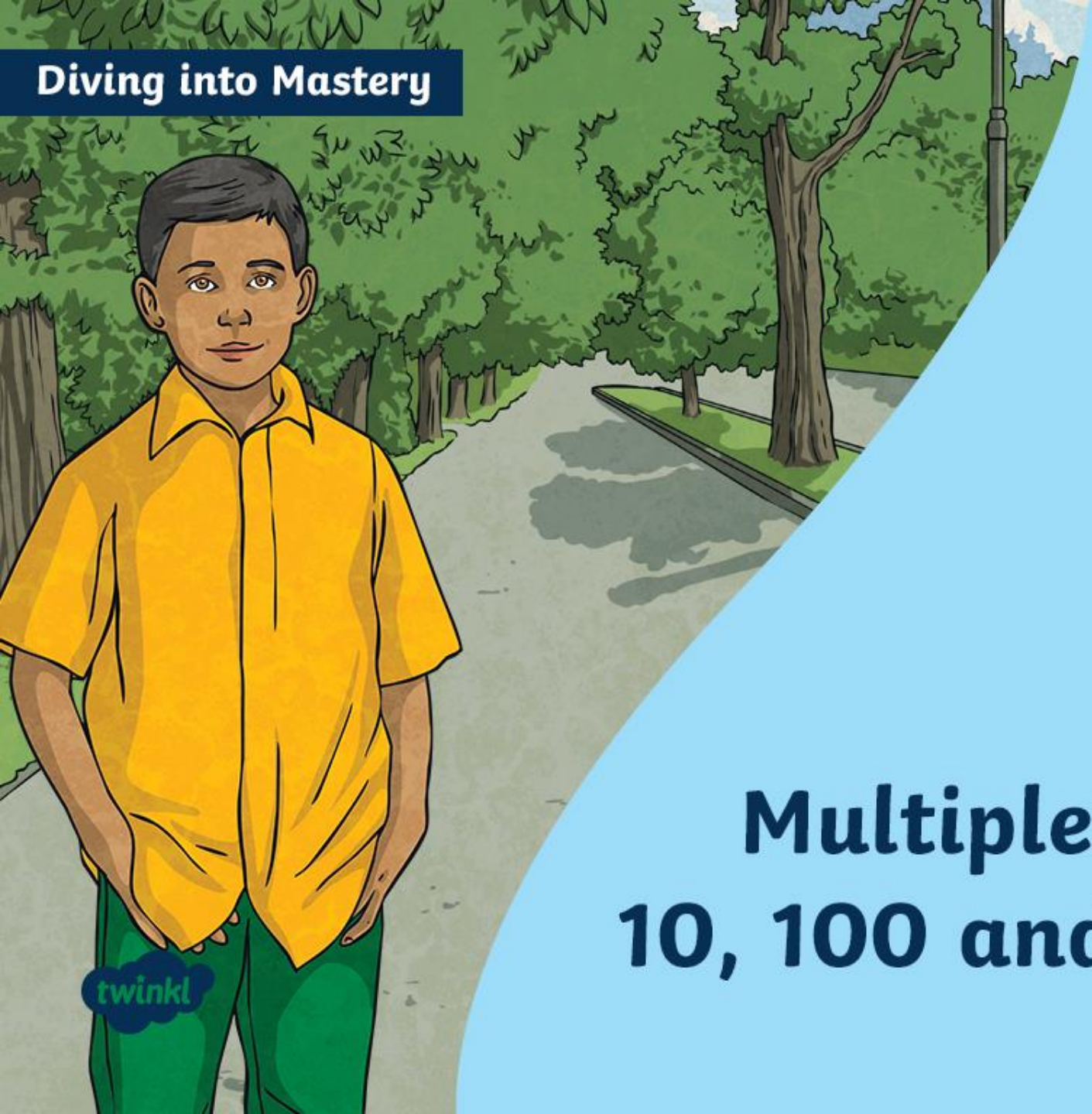
Diving into Mastery



Multiples of 10, 100 and 1000

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

- Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.

Multiples of 10, 100 and 1000

Diving

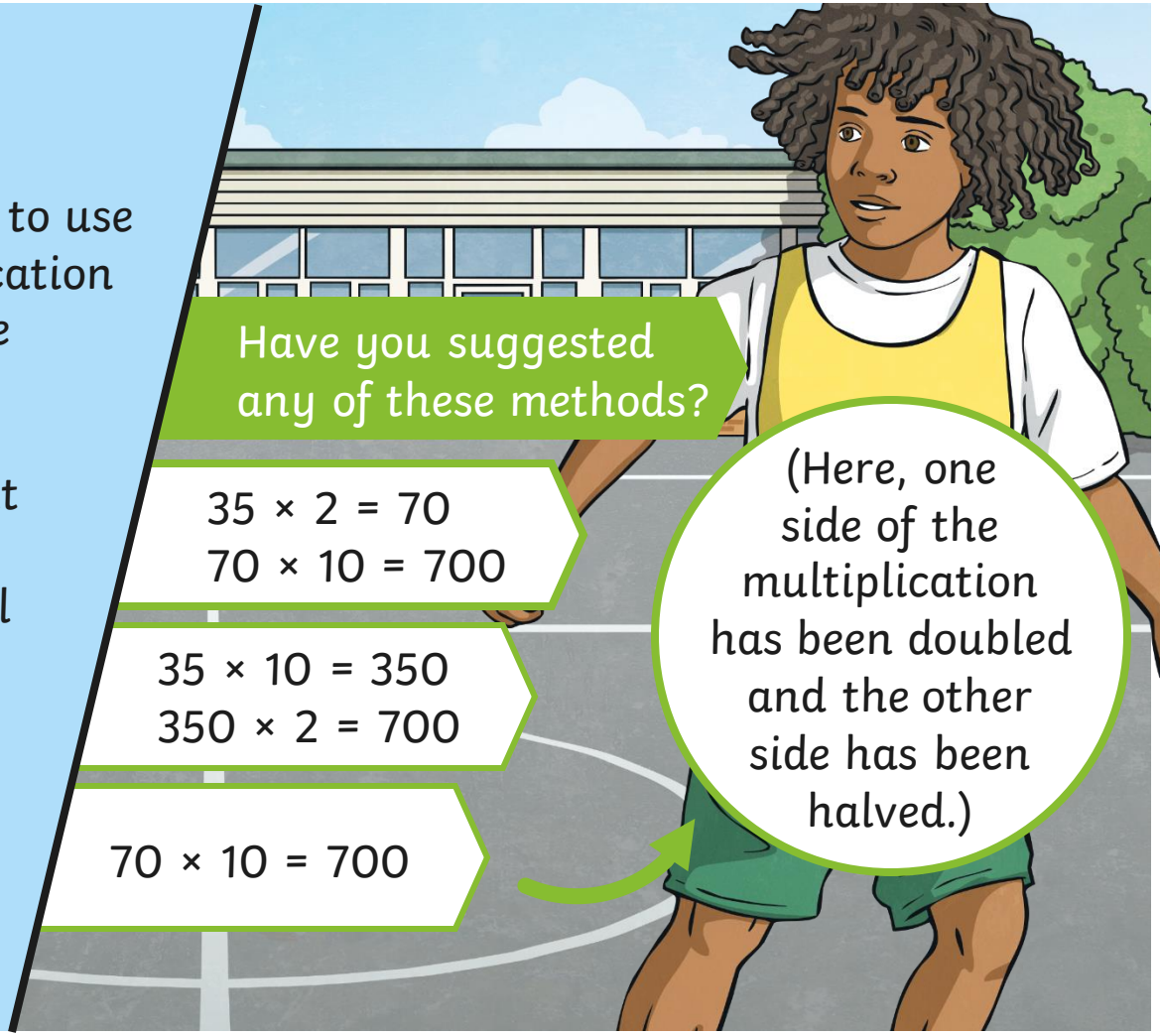
26 × 20 = 520	**36 × 25 = 900**
26 × 200 = **5200**	360 × 25 = **9000**
20 × 130 = **2600**	360 × 250 = **90 000**
130 × 200 = **26 000**	18 × 50 = **900**

650 ÷ 25 = 26	**5400 ÷ 200 = 27**
6500 ÷ 25 = **260**	5400 ÷ 20 = **270**
6500 ÷ 250 = **26**	540 ÷ 20 = **27**
325 ÷ 25 = **13**	2700 ÷ 100 = **27**

Use the facts at the top of the table to help you complete the other calculations.

Zak says that he needs to use a formal long multiplication method to complete the calculation **35 × 20**.

Can you find 3 different methods that he could use other than a formal method, using your knowledge of mental strategies?



Multiples of 10, 100 and 1000 | **Deeper**

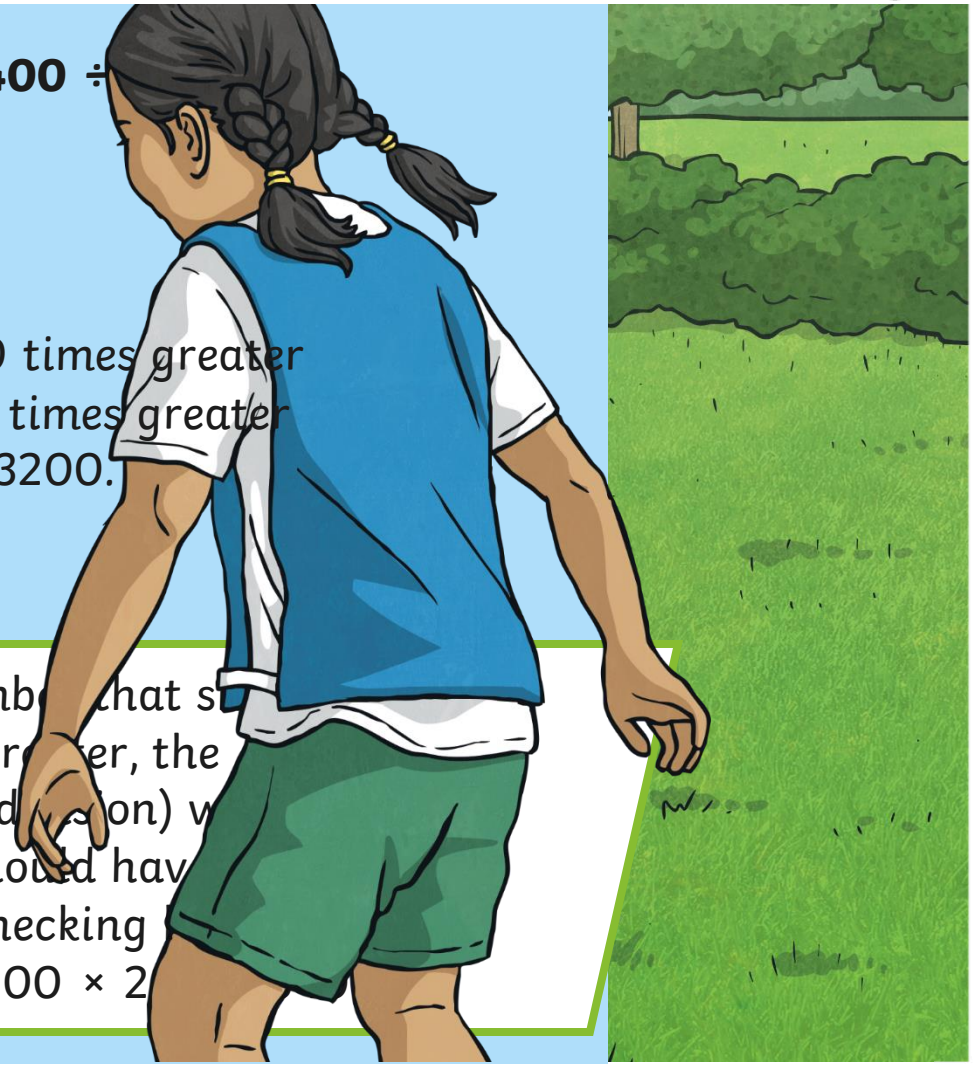
Cleo has been given this fact: **6400 ÷**

She has been asked to solve the calculation **6400 ÷ 200**.

She says that, because 200 is 10 times greater than 20, the answer must be 10 times greater too, so 6400 ÷ 200 must equal 3200.

Cleo is incorrect. Explain why.

Because the divisor (the numb hat s is dividing by) is ten times gr er, the quotient (the answer to her d on) w be ten times smaller. Cleo shou d hav recognised her mistake by checking answer using the inverse (3200 × 2



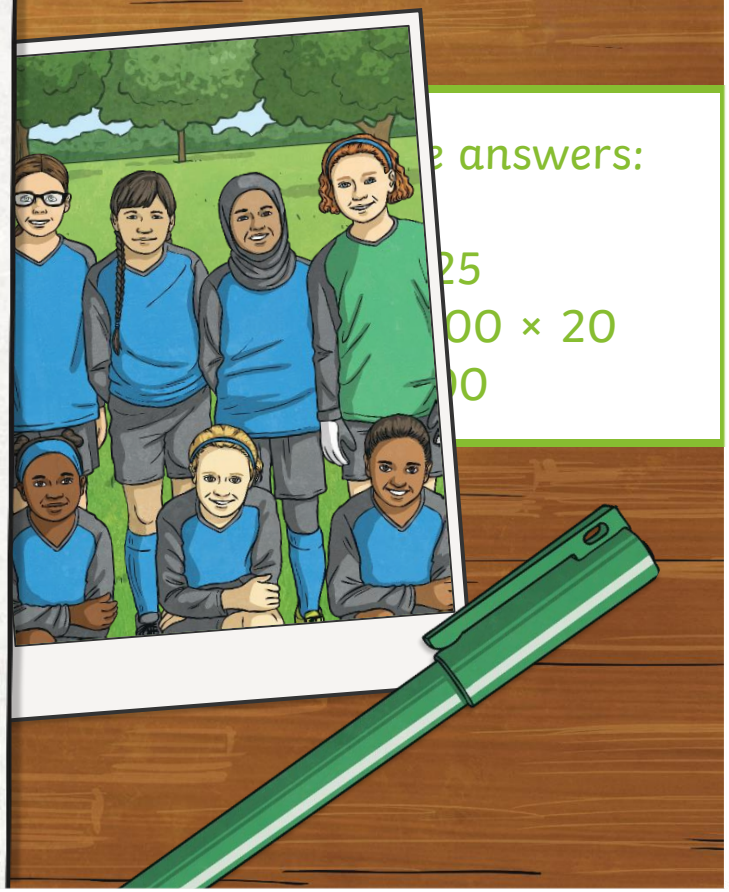
Multiples of 10, 100 and 1000

Deeper

320 × 25 = 32 × 250
Prove it!

When multiplying, if you make one of the factors (numbers that are being multiplied) 10 times smaller and the other 10 times greater, this creates an equivalent calculation. This means that the calculations have the same value.
320 × 25 = 32 × 250 = 8000

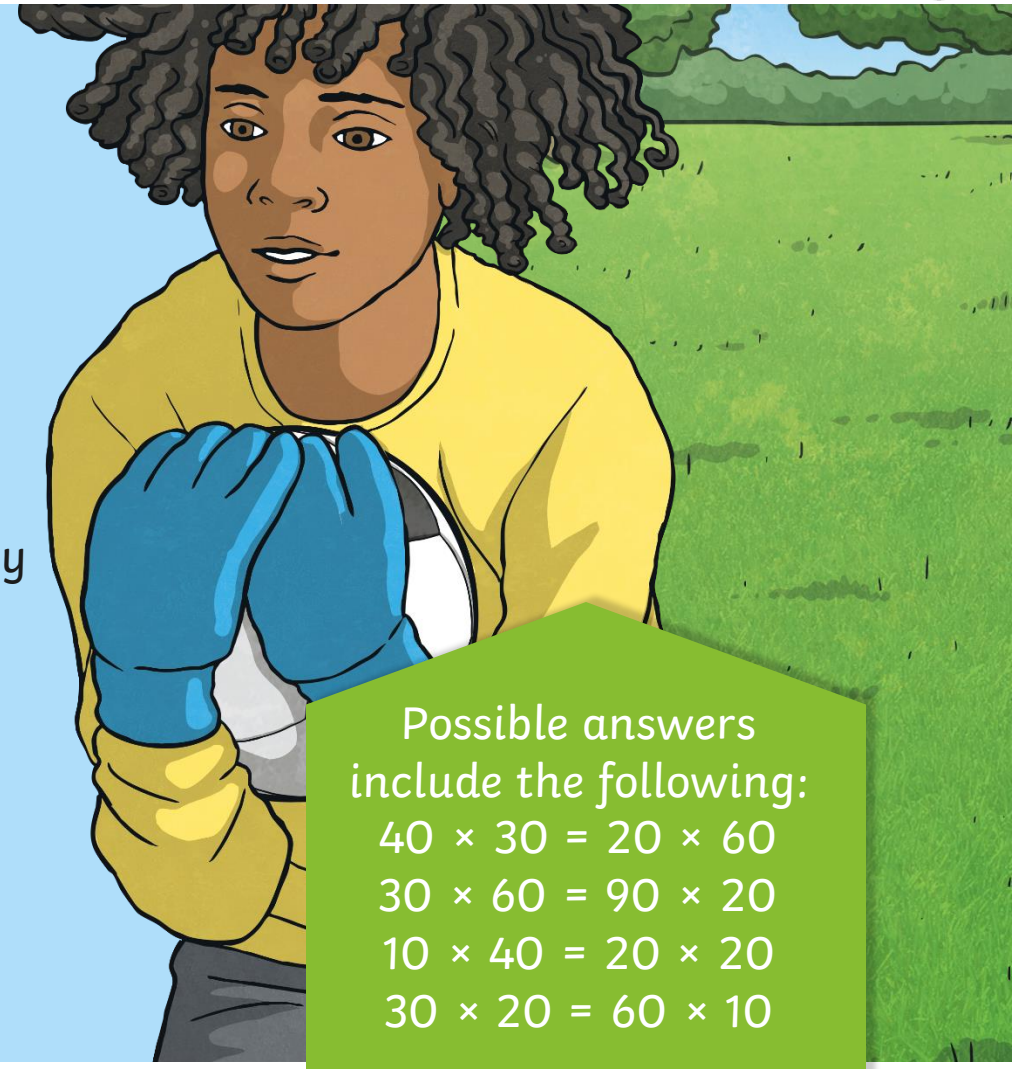
Write down 3 of your own equivalent calculations similar to the ones above.



e answers:

25
00 × 20
0

Multiples of 10, 100 and 1000 | **Deepest**



In the calculation below, each square represents a missing digit.

Find 5 possible solutions to make the statement correct.

You cannot use commutativity (just swapping the order of the numbers), such as $40 \times 30 = 30 \times 40$.

□0 × □0 = □0 × □0

Possible answers include the following:

$40 \times 30 = 20 \times 60$

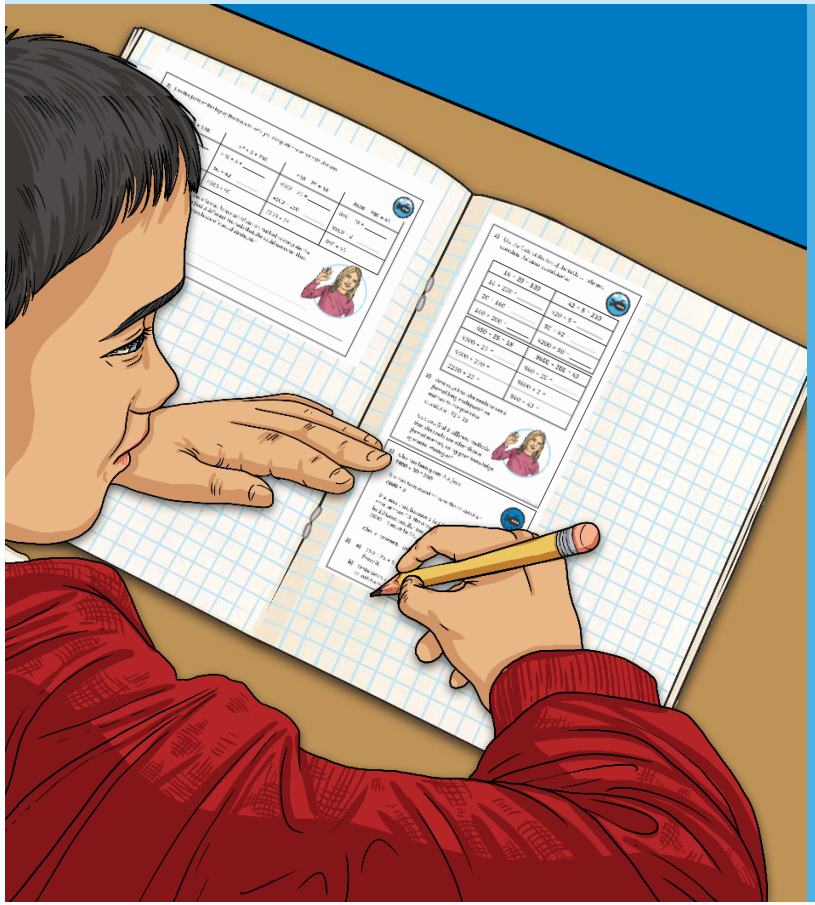
$30 \times 60 = 90 \times 20$

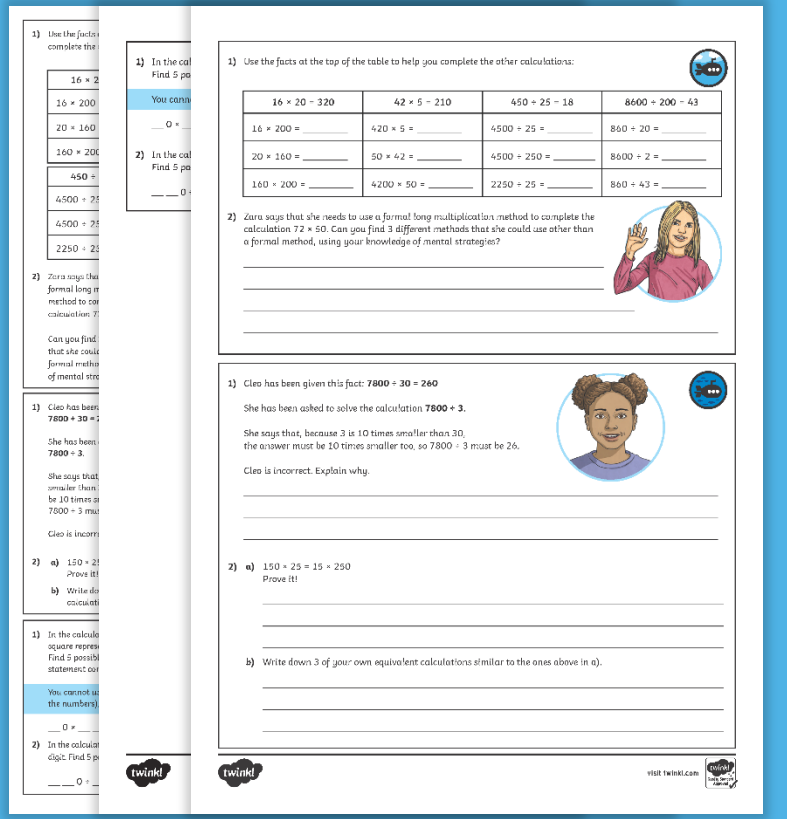
$10 \times 40 = 20 \times 20$

$30 \times 20 = 60 \times 10$

Multiples of 10, 100 and 1000

Dive in by completing your own activity!





1) Use the facts at the top of the table to help you complete the other calculations:

16 × 20 = 320	42 × 5 = 210	450 ÷ 25 = 18	8600 ÷ 200 = 43
16 × 200 = _____	420 × 5 = _____	4500 ÷ 25 = _____	860 ÷ 20 = _____
20 × 160 = _____	50 × 42 = _____	4500 ÷ 250 = _____	8600 ÷ 2 = _____
160 × 200 = _____	4200 × 50 = _____	2250 ÷ 25 = _____	860 ÷ 43 = _____

2) Zara says that she needs to use a formal long multiplication method to complete the calculation 72 × 50. Can you find 3 different methods that she could use other than a formal method, using your knowledge of mental strategies?

1) Cleo has been given this fact: **7800 ÷ 30 = 260**

She has been asked to solve the calculation **7800 ÷ 3.**

She says that, because 3 is 10 times smaller than 30, the answer must be 10 times smaller too, so 7800 ÷ 3 must be 26.

Cleo is incorrect. Explain why.

2) a) 150 × 25 = 15 × 250
Prove it!

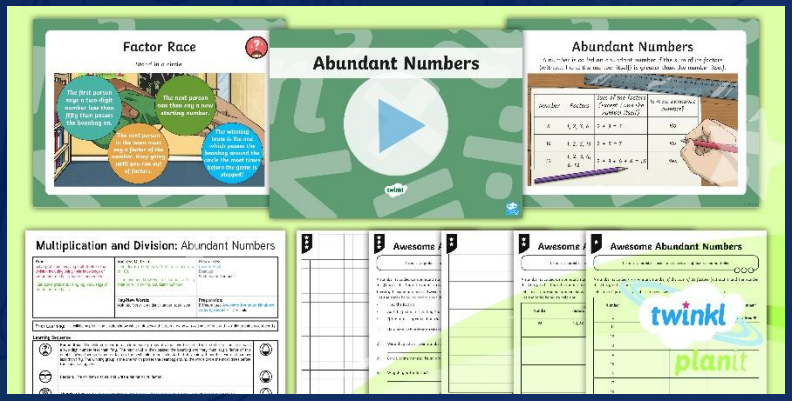
b) Write down 3 of your own equivalent calculations similar to the ones above in a).

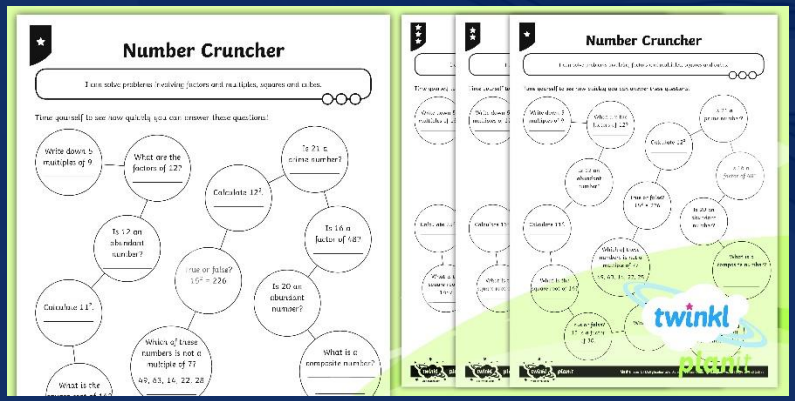
Need Planning to Complement this Resource?

National Curriculum Aim

Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.

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