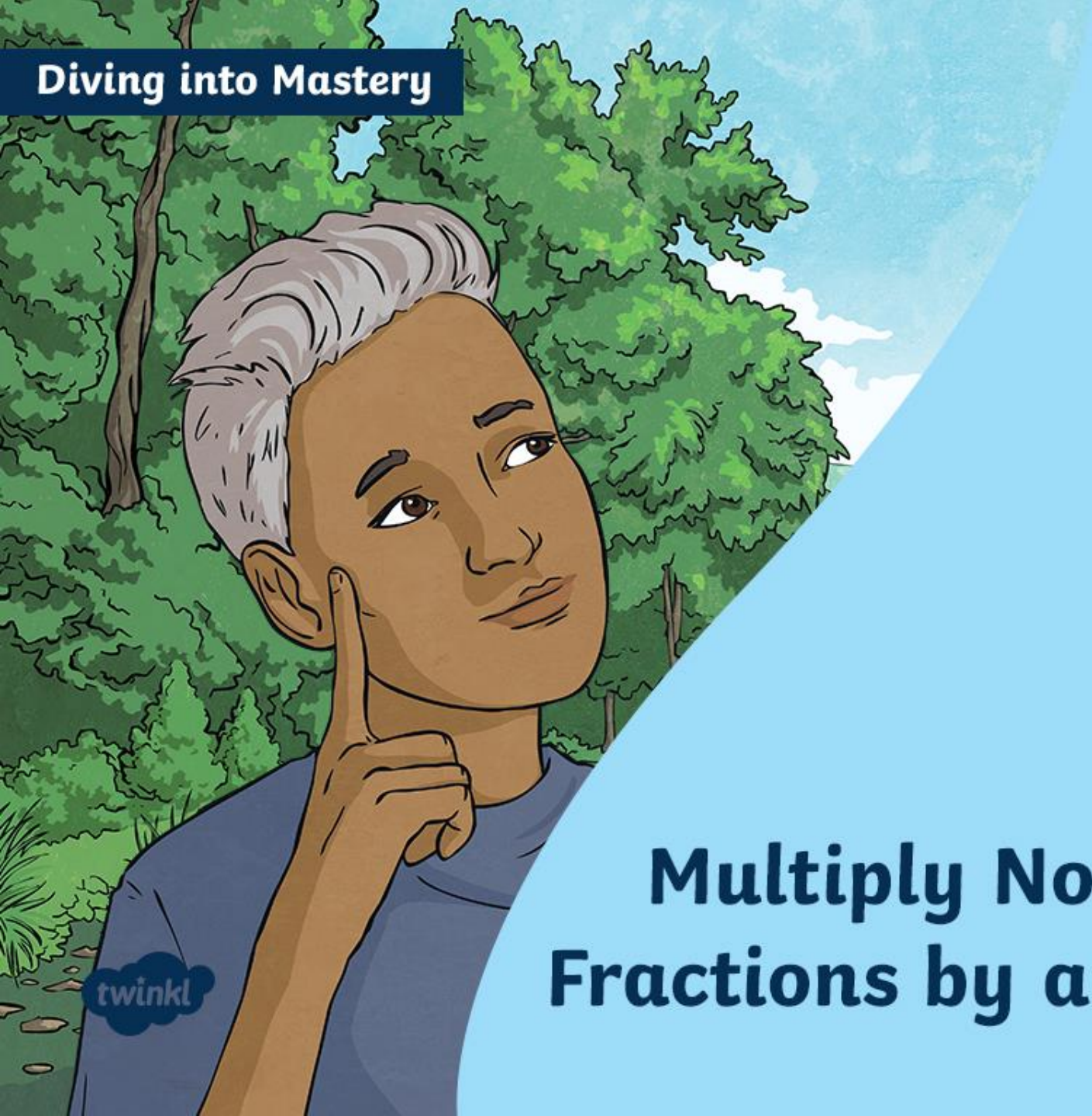
Diving into Mastery



Multiply Non-Unit Fractions by an Integer

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:

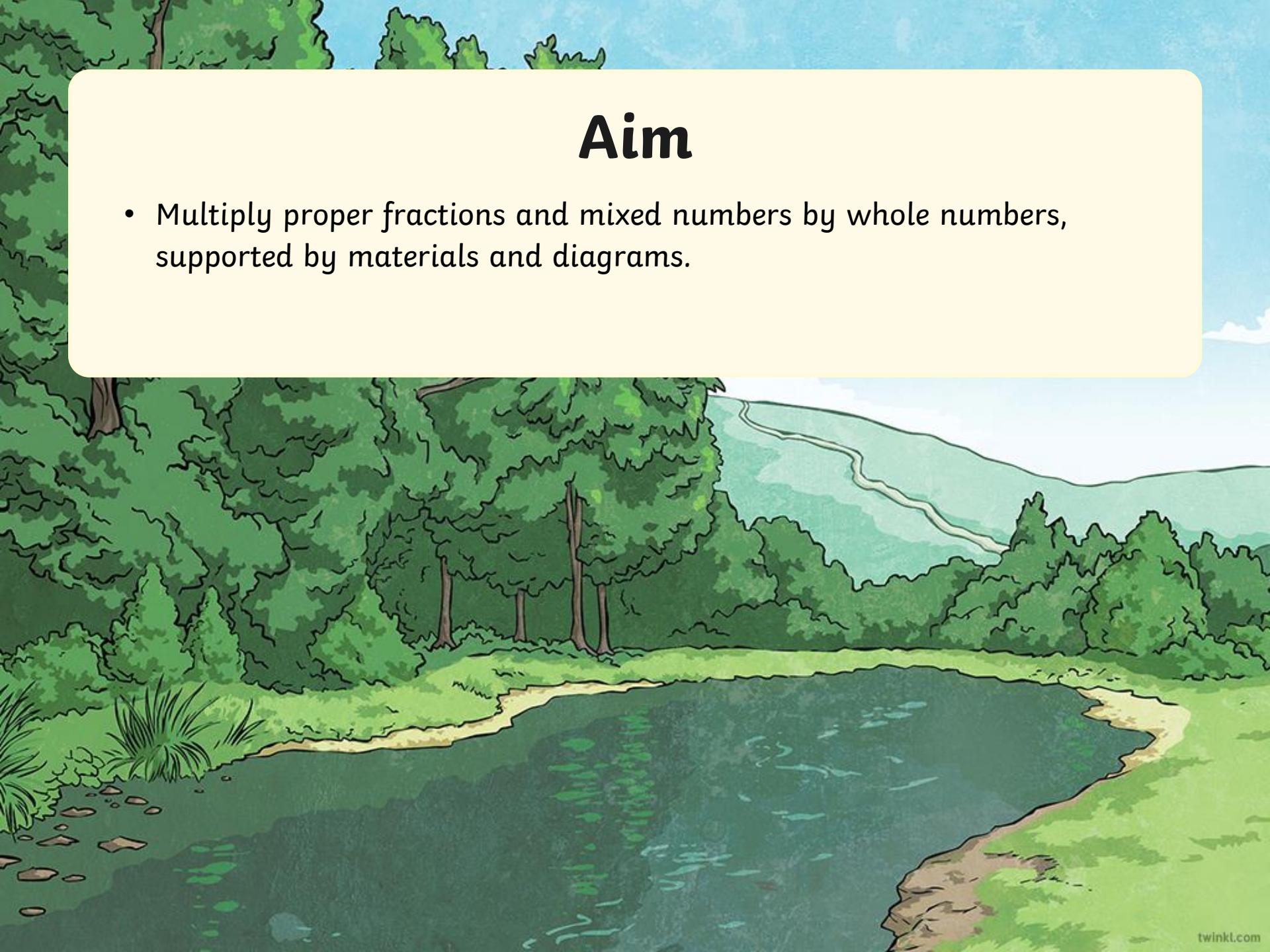
Diving

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

- Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.

Multiply Non-Unit Fractions by an Integer

Diving

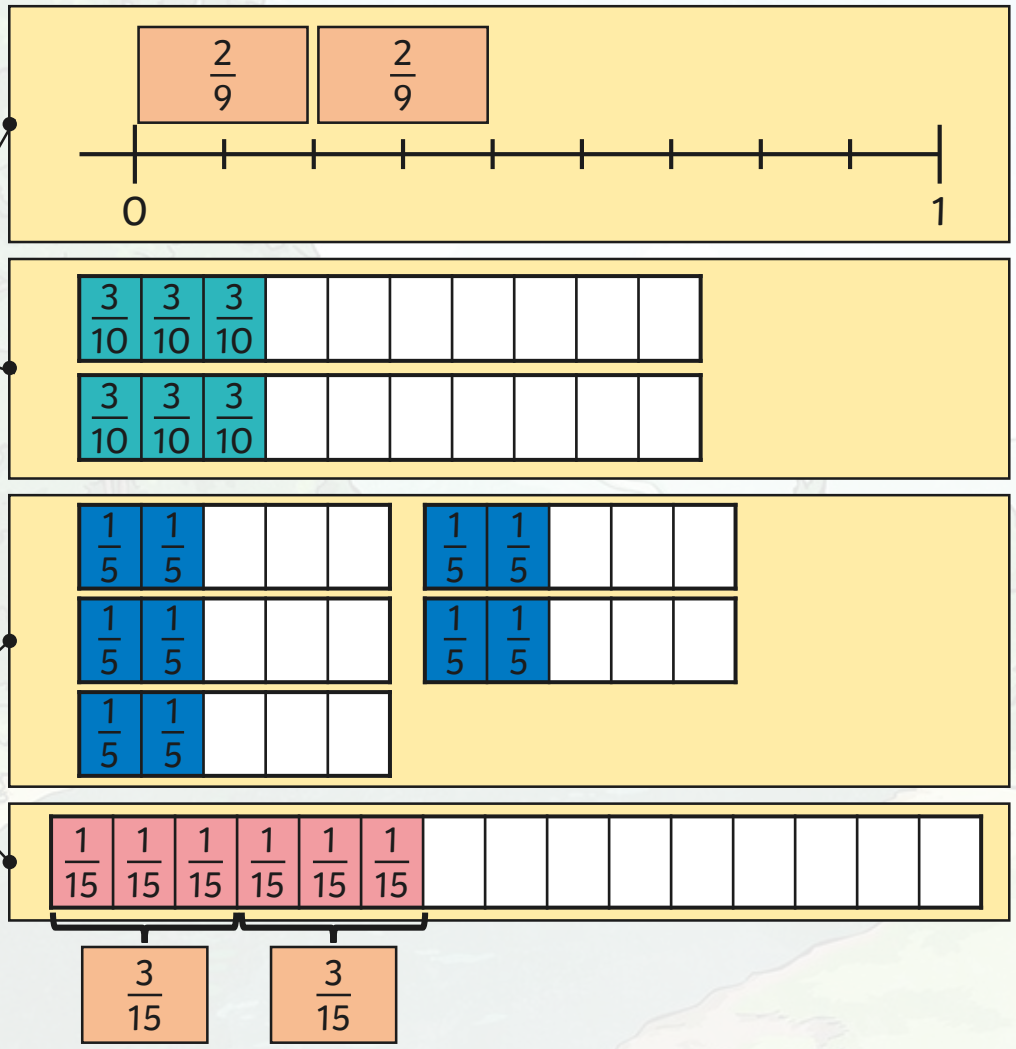
Match the calculation to the correct model that represents it and then complete the calculation.

$2 \times \frac{3}{10} = \frac{6}{10} = \frac{3}{5}$

$\frac{2}{9} \times 2 = \frac{4}{9}$

$\frac{3}{15} \times 2 = \frac{6}{15} = \frac{2}{5}$

$5 \times \frac{2}{5} = \frac{10}{5} = 2$



Multiply Non-Unit Fractions by an Integer

Diving

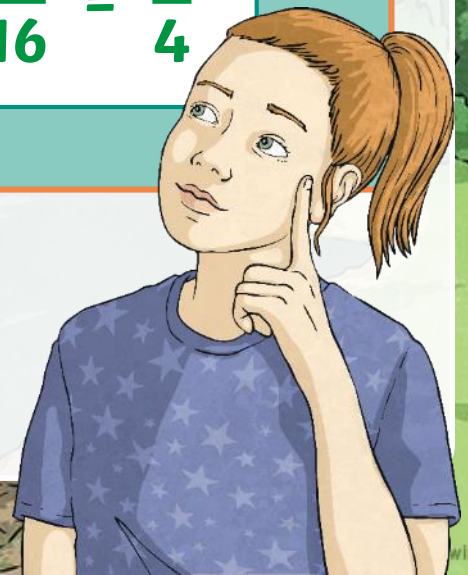
Complete these calculations. Simplify your answer where possible.

$4 \times \frac{2}{12} = \frac{8}{12} = \frac{2}{3}$

$\frac{3}{8} \times 2 = \frac{6}{8} = \frac{3}{4}$

$4 \times \frac{4}{20} = \frac{16}{20} = \frac{4}{5}$

$\frac{4}{16} \times 3 = \frac{12}{16} = \frac{3}{4}$



Multiply Non-Unit Fractions by an Integer

Deeper

True or false? Prove it!

$\frac{3}{15} \times 4 = \frac{12}{30}$	False $\frac{3}{15} \times 4 = \frac{12}{15}$ $\frac{12}{30} = \frac{6}{15}$ $\frac{12}{15} > \frac{6}{15}$
$\frac{2}{20} \times 8 > \frac{2}{10} \times 3$	True $\frac{16}{20} = \frac{8}{10}$ $\frac{8}{10} > \frac{6}{10}$
$\frac{4}{20} \times 4 < \frac{3}{10} \times 3$	True $\frac{16}{20} = \frac{8}{10}$ $\frac{8}{10} < \frac{9}{10}$
$\frac{2}{8} \times 3 < \frac{2}{16} \times 2$	False $\frac{2}{8} \times 3 = \frac{6}{8}$ $\frac{4}{16} = \frac{2}{8}$ $\frac{6}{8} > \frac{2}{8}$

Multiply Non-Unit Fractions by an Integer

Deeper

Harley is having a pizza party for his birthday with 3 friends. They make 1 pizza and cut it into 15 slices. They each eat $\frac{3}{15}$ of a pizza.

How many slices have they eaten altogether? How many slices are left over?

$$\frac{3}{15} \times 4 = \frac{12}{15}$$

12 slices eaten

3 slices left over

Multiply Non-Unit Fractions by an Integer

Deepest

Find 3 possible solutions where the product is less than 1.

$$\frac{3}{\square} \times \square = \frac{\square}{15}$$

Possible answers include:

$\frac{3}{15} \times 2 = \frac{6}{15} = \frac{2}{5}$

$\frac{3}{15} \times 3 = \frac{9}{15} = \frac{3}{5}$

$\frac{2}{5} \times 2 = \frac{4}{5} = \frac{12}{15}$

Multiply Non-Unit Fractions by an Integer

Deepest

Now find 3 possible solutions where the product is greater than 1 but less than 2.

$$\frac{3}{\square} \times \square = 1\frac{\square}{15}$$

Possible answers include:

$$\frac{3}{15} \times 6 = \frac{18}{15} = 1\frac{3}{15}$$

$$\frac{3}{15} \times 7 = \frac{21}{15} = 1\frac{6}{15}$$

$$\frac{3}{5} \times 3 = \frac{9}{5} = \frac{27}{15} = 1\frac{12}{15}$$

Multiply Non-Unit Fractions by an Integer

Deepest

Sofia multiplies a non-unit fraction by an integer.

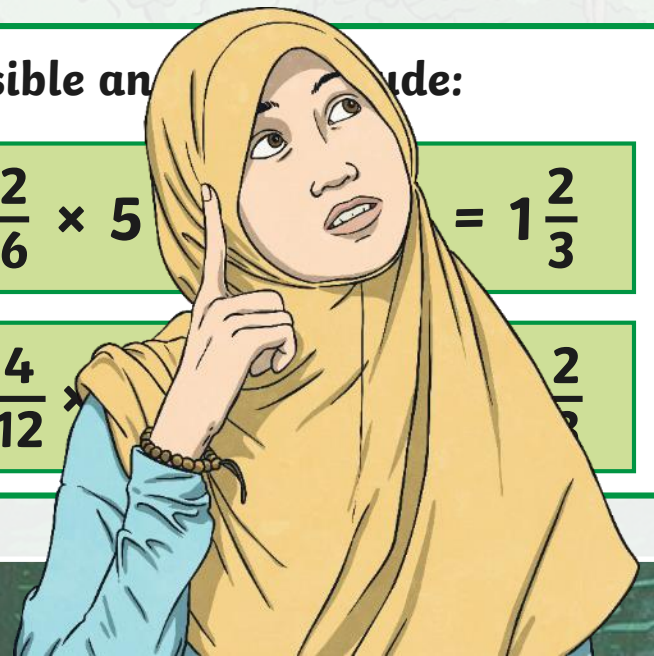
The fraction has a denominator which is a multiple of 6.

The product is greater than 1 but less than 2.

The integer is a factor of 15.

What could the calculation be? Find 4 possibilities. Remember to simplify the product where possible.

Possible an ude:



$\frac{2}{6} \times 5 = 1\frac{2}{3}$

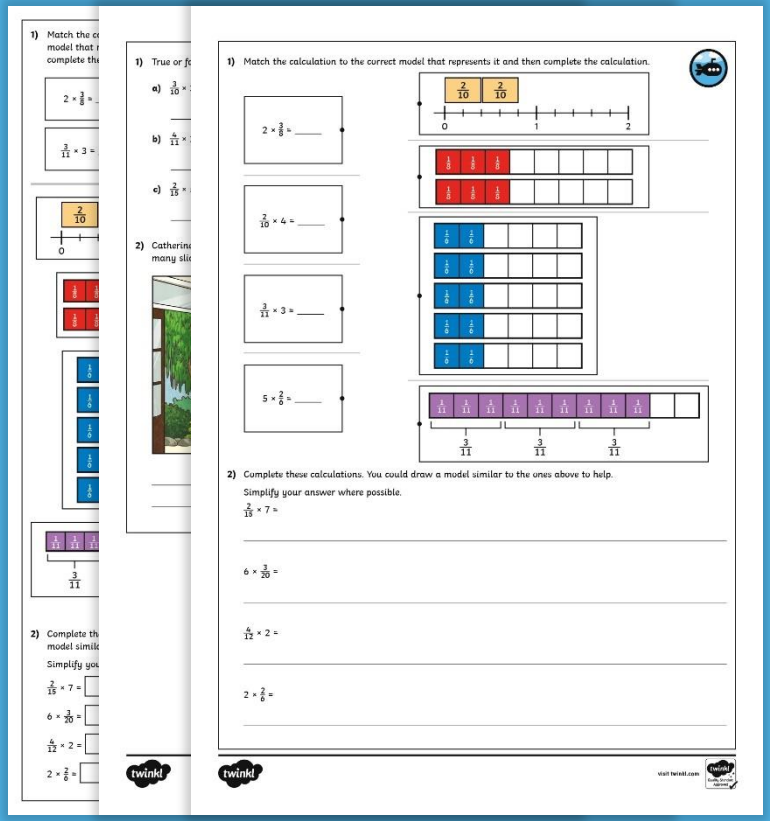
$\frac{7}{18} \times 3 = \frac{21}{18} = 1\frac{3}{18} = 1\frac{1}{6}$

$\frac{4}{12} \times \frac{2}{}$

$\frac{2}{6} \times 5 = \frac{10}{6} = 1\frac{4}{6} = 1\frac{2}{3}$

Multiply Non-Unit Fractions by an Integer

Dive in by completing your own activity!



1) Match the calculation to the correct model that represents it and then complete the calculation.

$2 \times \frac{3}{8} =$ ____

$\frac{2}{10} \times 4 =$ ____

$\frac{3}{11} \times 3 =$ ____

$5 \times \frac{2}{6} =$ ____

2) Complete these calculations. You could draw a model similar to the ones above to help.
Simplify your answer where possible.

$\frac{2}{15} \times 7 =$

$6 \times \frac{3}{20} =$

$\frac{4}{12} \times 2 =$

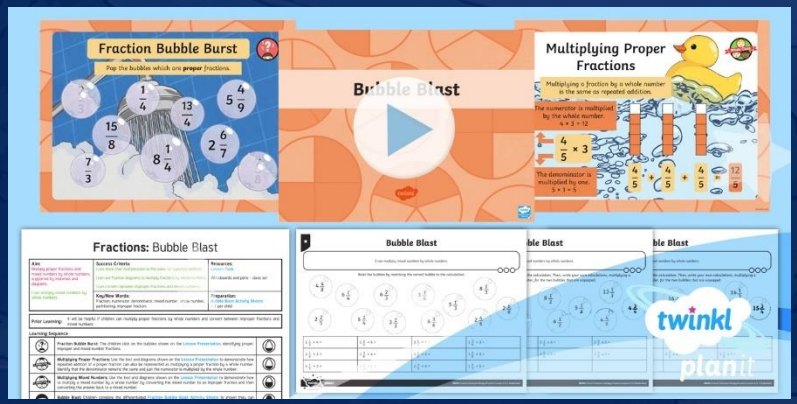
$2 \times \frac{2}{6} =$

Need Planning to Complement this Resource?

National Curriculum Aim

Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.

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



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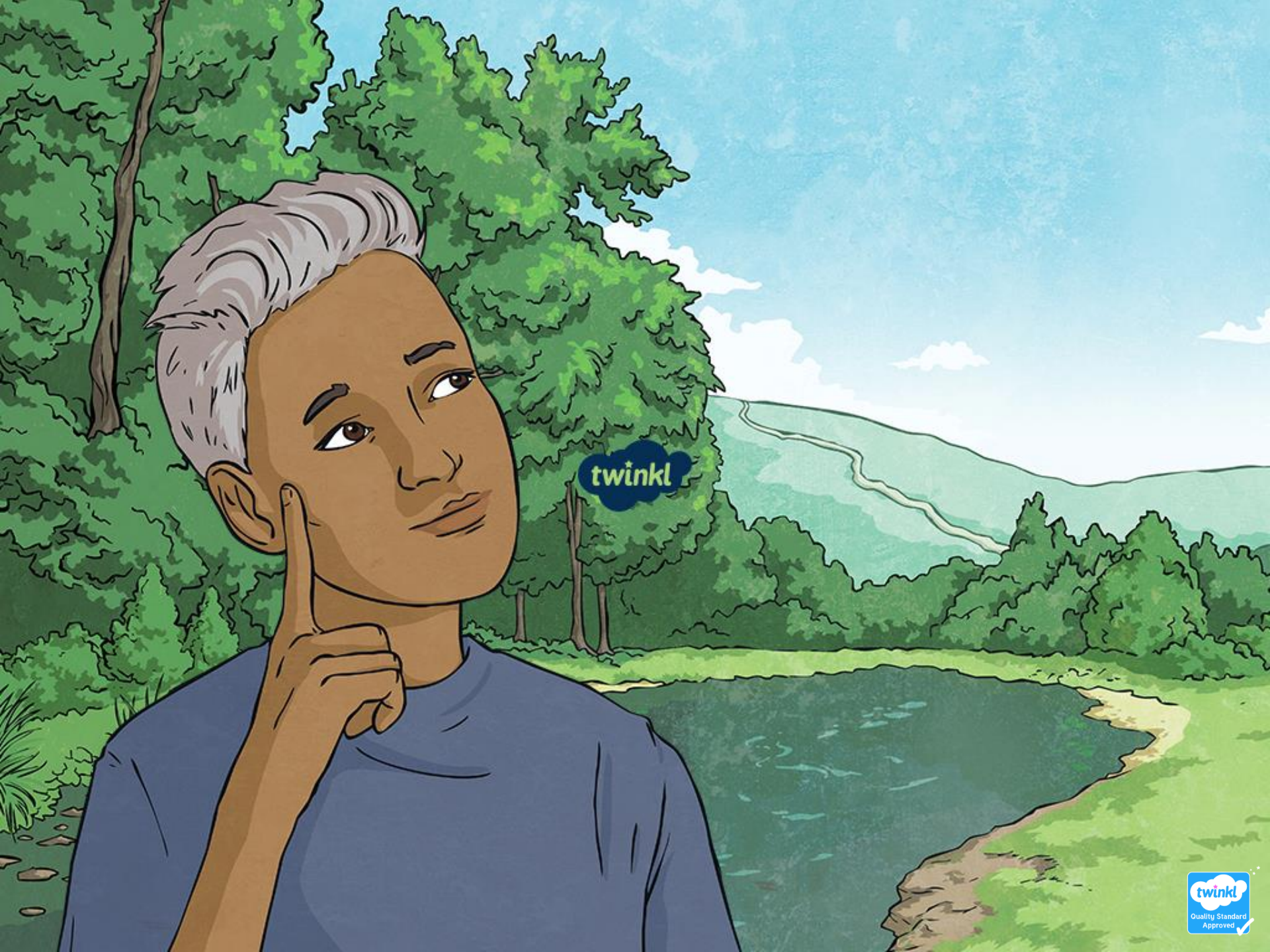
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