

## Diving into Mastery



# Multiply Unit Fractions by an Integer

twinkl

# 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.

The background of the slide is a colorful illustration of a classroom. In the foreground, there are several wooden desks with green metal frames and black chairs. In the background, there is a world map on the left wall, a lighthouse on a rocky island in a window, and two ladybugs on the wall. A grey cabinet is visible on the right side.

# Aim

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

# Multiply Unit Fractions by an Integer

# Diving



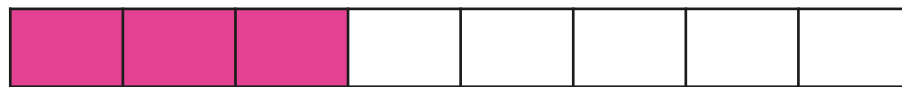
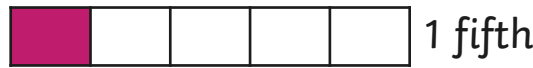
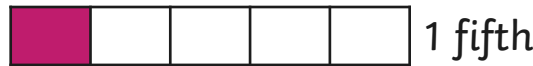
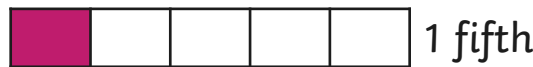
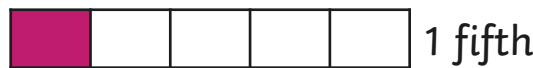
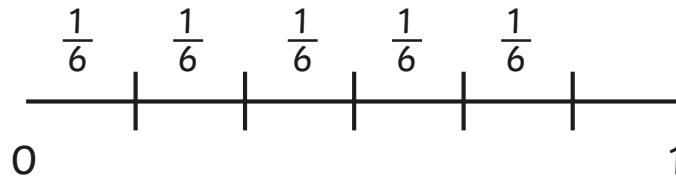
Match each calculation to the correct model that represents it and then complete the calculations.

$$4 \times \frac{1}{5} = \frac{4}{5}$$

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

$$\frac{1}{8} \times 3 = \frac{3}{8}$$

$$\frac{1}{4} \times 3 = \frac{3}{4}$$



## Multiply Unit Fractions by an Integer

## Diving



Complete these calculations. You could draw one of the models similar to the ones on the previous slide to help.

Simplify your answers where possible.

$$4 \times \frac{1}{4} = \frac{4}{4} = 1$$

$$\frac{1}{8} \times 5 = \frac{5}{8}$$

$$7 \times \frac{1}{14} = \frac{7}{14} = \frac{1}{2}$$

$$\frac{1}{6} \times 9 = \frac{9}{6} = 1\frac{3}{6} = 1\frac{1}{2}$$



## Multiply Unit Fractions by an Integer

## Deeper



True or false? Prove it!

Simplify fractions where possible.

a

$$\frac{1}{5} \times 4 = 8 \times \frac{1}{10}$$

True  $\frac{4}{5} = \frac{8}{10} = \frac{4}{5}$

b

$$\frac{1}{4} \times 3 > \frac{1}{8} \times 7$$

False  $\frac{3}{4} < \frac{7}{8}$

c

$$\frac{1}{7} \times 5 = \frac{1}{6} \times 7$$

False  $\frac{5}{7} < \frac{7}{6} = 1\frac{1}{6}$

d

$$\frac{1}{6} \times 4 < 10 \times \frac{1}{12}$$

True  $\frac{4}{6} < \frac{10}{12} = \frac{5}{6}$



## Multiply Unit Fractions by an Integer

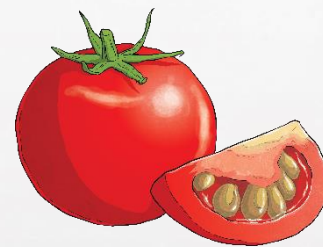
## Deeper



Jez is having a pizza party for his birthday. He needs  $\frac{1}{3}$  of a pack of tomatoes for each pizza. Jez is making 6 pizzas. How many packs of tomatoes will he need?

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

Jez will need 2 packs of tomatoes.



## Multiply Unit Fractions by an Integer

## Deepest



Find 3 possible solutions to complete the calculation.

$$\frac{1}{\square} \times \square = 1 \frac{\square}{4}$$



Three math problems are pinned to the corkboard:

- Top paper:  $\frac{1}{4} \times 5 = 1 \frac{1}{4}$
- Middle paper:  $\frac{1}{4} \times 7 = 1 \frac{3}{4}$
- Bottom paper:  $\frac{1}{4} \times 10 = \frac{10}{8} = 1 \frac{2}{8} = 1 \frac{10}{4}$



## Multiply Unit Fractions by an Integer

## Deepest



Jessie multiplies a unit fraction by an integer.  
The fraction has a denominator which is a factor of 8.  
The product is less than 1.  
The integer is a factor of 10.  
What could the calculation be?

There are 3 possible answers. Can you find them all?

$$\frac{1}{2} \times 1 = \frac{1}{2}$$

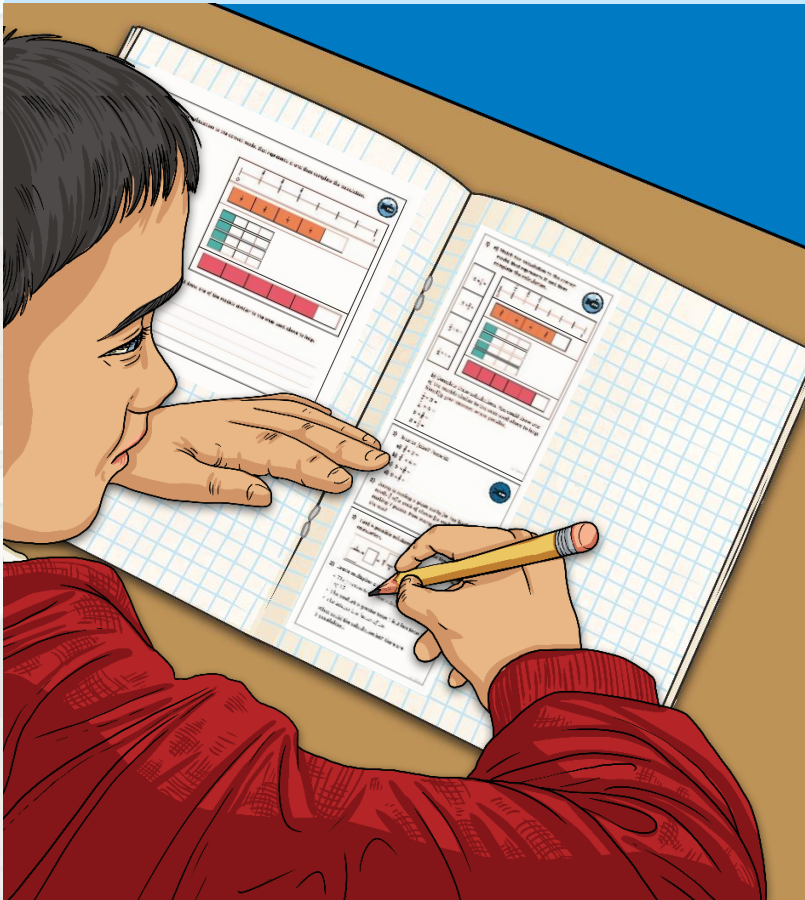
$$\frac{1}{4} \times 2 = \frac{2}{4} = \frac{1}{2}$$

$$\frac{1}{8} \times 5 = \frac{5}{8}$$



## Multiply Unit Fractions by an Integer

Dive in by completing your own activity!



1) True or false? Prove it!

a)  $\frac{1}{2} \times 3 =$  \_\_\_\_\_

b)  $\frac{1}{3} \times 4 =$  \_\_\_\_\_

c)  $5 \times \frac{1}{2} =$  \_\_\_\_\_

d)  $8 \times \frac{1}{3} =$  \_\_\_\_\_

2) Jenny is having a pizza party. How many packs of chips?

A large empty rectangular box provided for the student to write their answer to question 2.

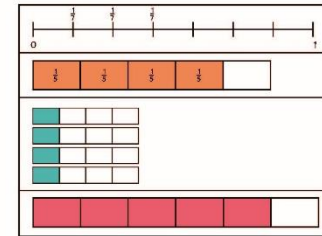
1) a) Match the calculation to the correct model that represents it and then complete the calculation.

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

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

$\frac{1}{2} \times 4 =$

$\frac{1}{4} \times 4 =$



b) Complete these calculations. You could draw one of the models similar to the ones used above to help. Simplify your answers where possible.

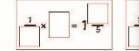
$\frac{1}{2} \times 3 =$  \_\_\_\_\_

$\frac{2}{3} \times 4 =$  \_\_\_\_\_

$5 \times \frac{1}{2} =$  \_\_\_\_\_

$8 \times \frac{1}{3} =$  \_\_\_\_\_

1) Find 4 possible solutions to  $\frac{1}{2} \times \square = \frac{1}{4}$



2) Jessie multiplies a unit fraction

- The fraction has a denominator of 4.
- The product is greater than 1.
- The integer is a factor of 16.

What could the calculation be?

