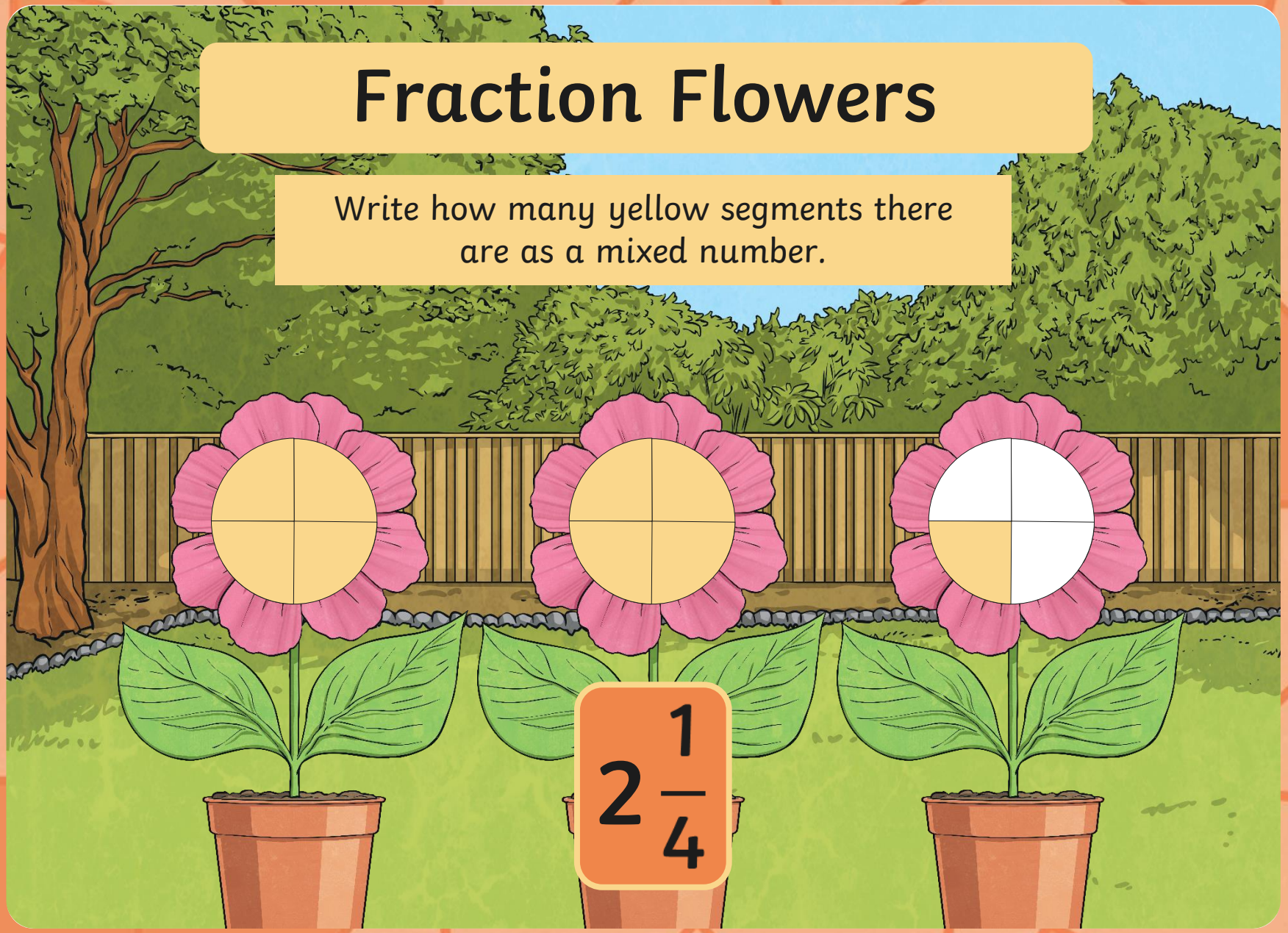
Multiply Fractions by whole numbers

In this lesson:

- you will understand that multiplication is the same as repeated addition.
- you will be able to use a fraction diagram to multiply proper fractions by whole numbers.
- you will be able to give the answer to a multiplication calculation as a mixed number.

Fraction Flowers

Write how many yellow segments there are as a mixed number.



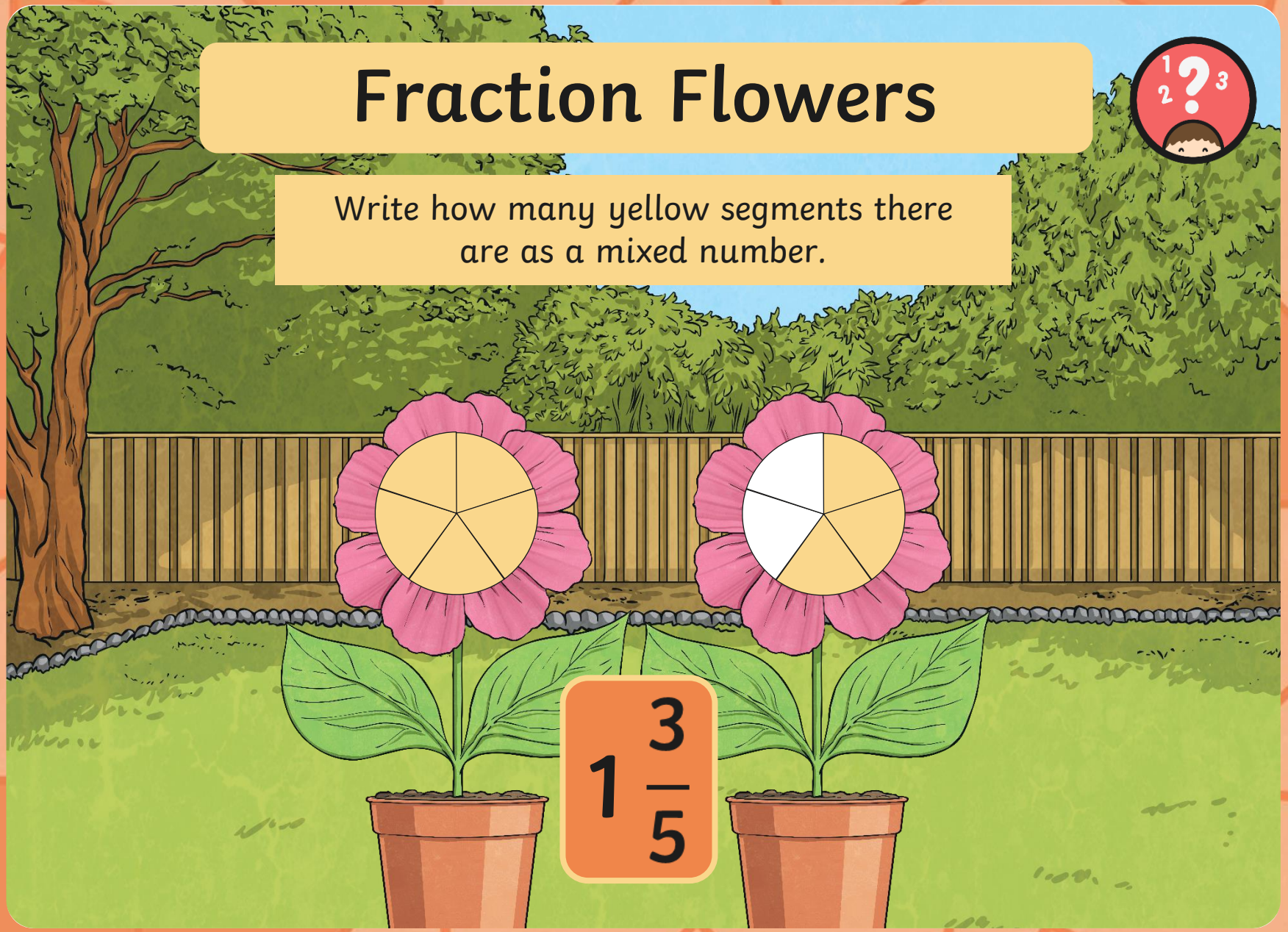
Fraction Flowers

Write how many yellow segments there are as a mixed number.

$3\frac{2}{3}$

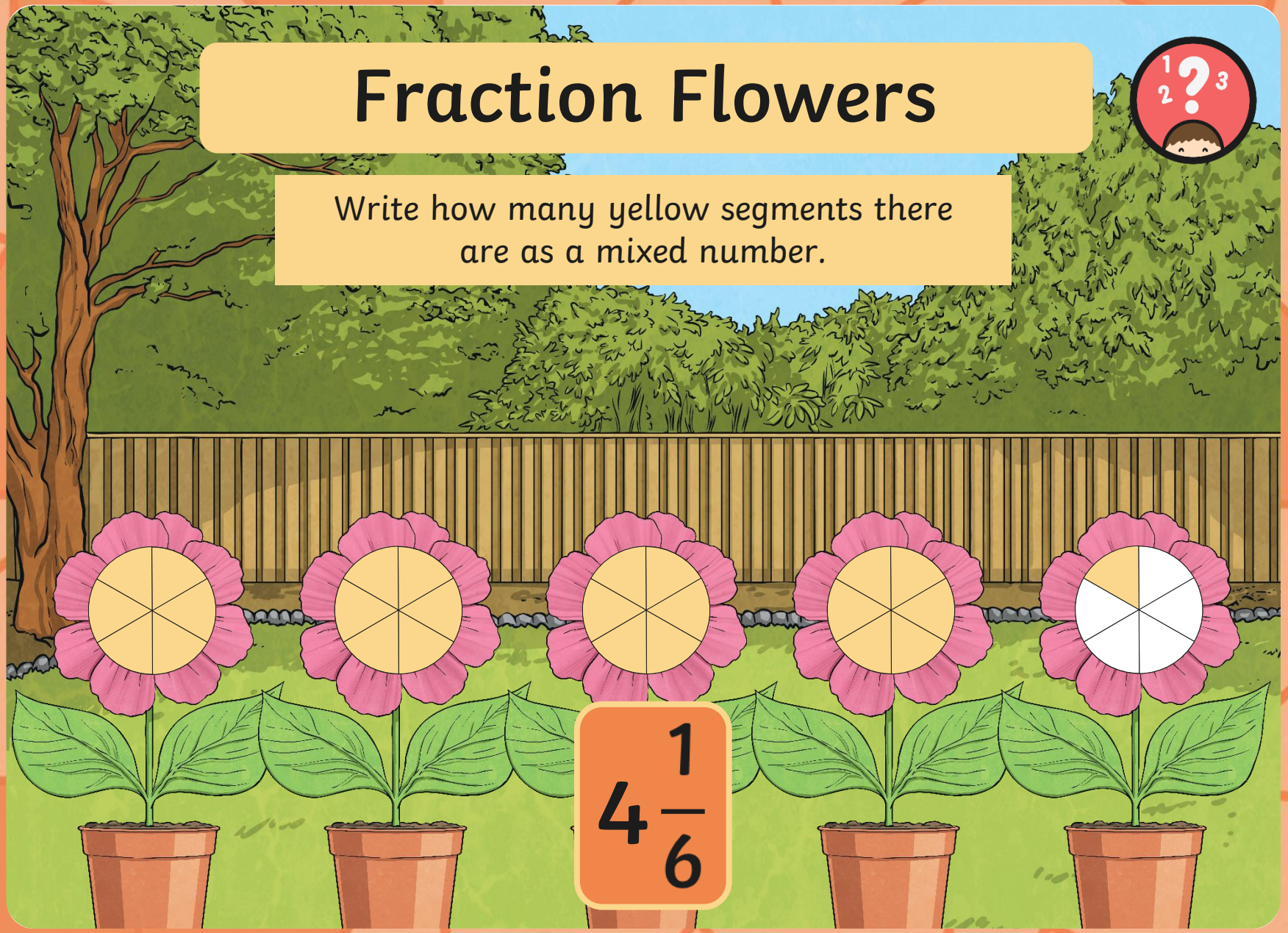
Fraction Flowers

Write how many yellow segments there are as a mixed number.



Fraction Flowers

Write how many yellow segments there are as a mixed number.

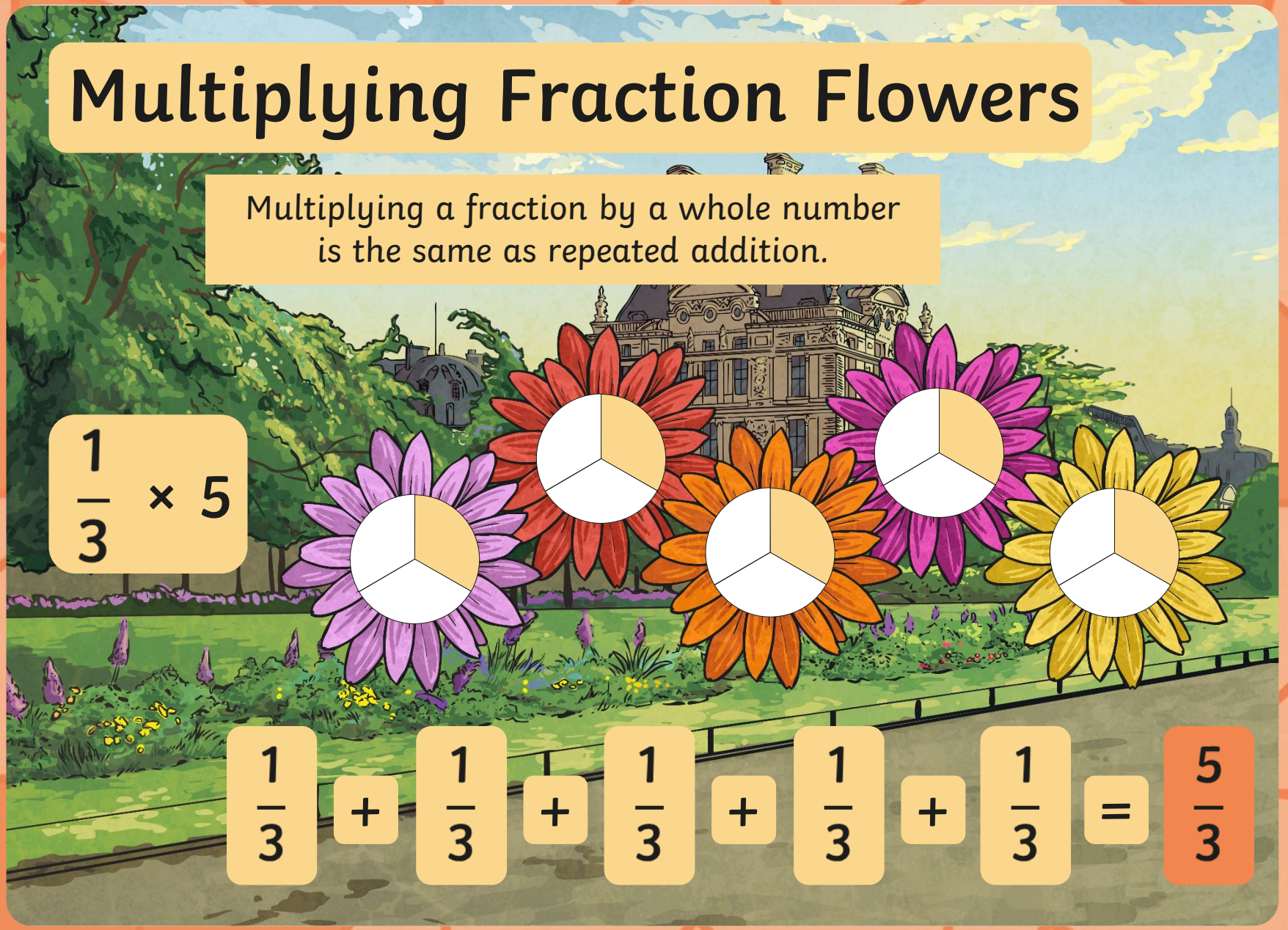


$4\frac{1}{6}$

Multiplying Fraction Flowers

Multiplying a fraction by a whole number is the same as repeated addition.

$\frac{1}{3} \times 5$

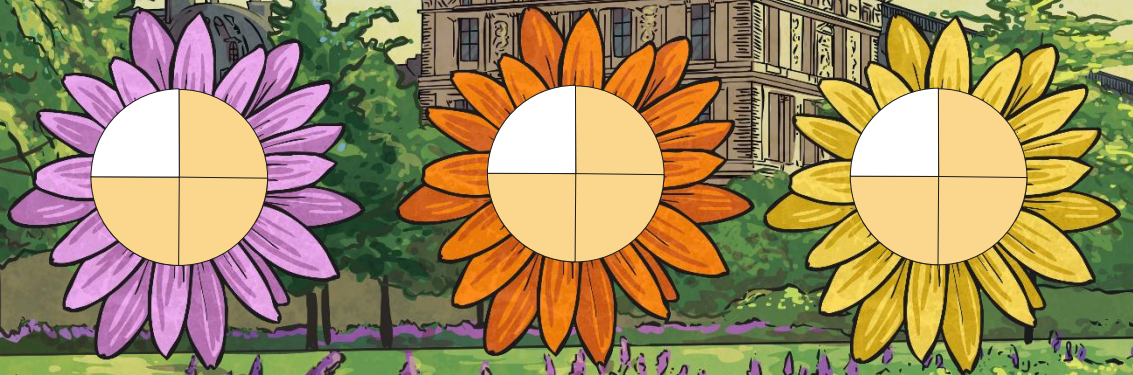


$$\frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} = \frac{5}{3}$$

Multiplying Fraction Flowers

Multiplying a fraction by a whole number is the same as repeated addition.

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

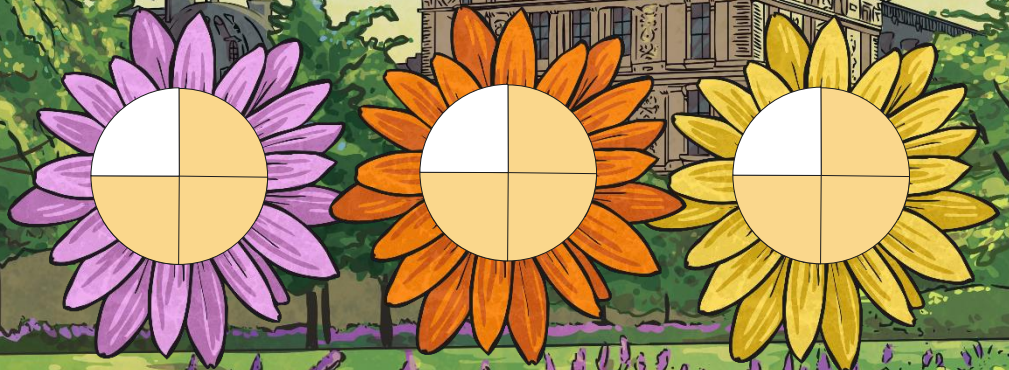


$\frac{3}{4} + \frac{3}{4} + \frac{3}{4} = \frac{9}{4}$

Multiplying Fraction Flowers

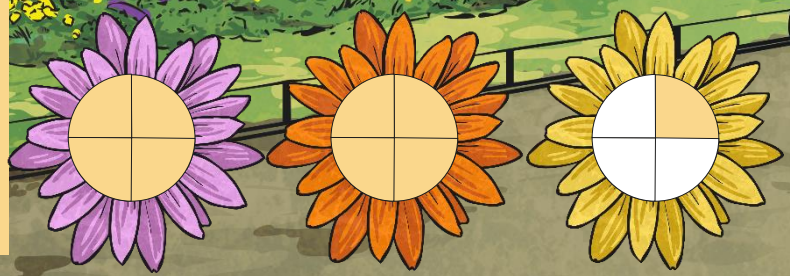
The answer to this fraction multiplication is an improper fraction:

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



$= \frac{9}{4}$

The answer can be written as an equivalent mixed number:

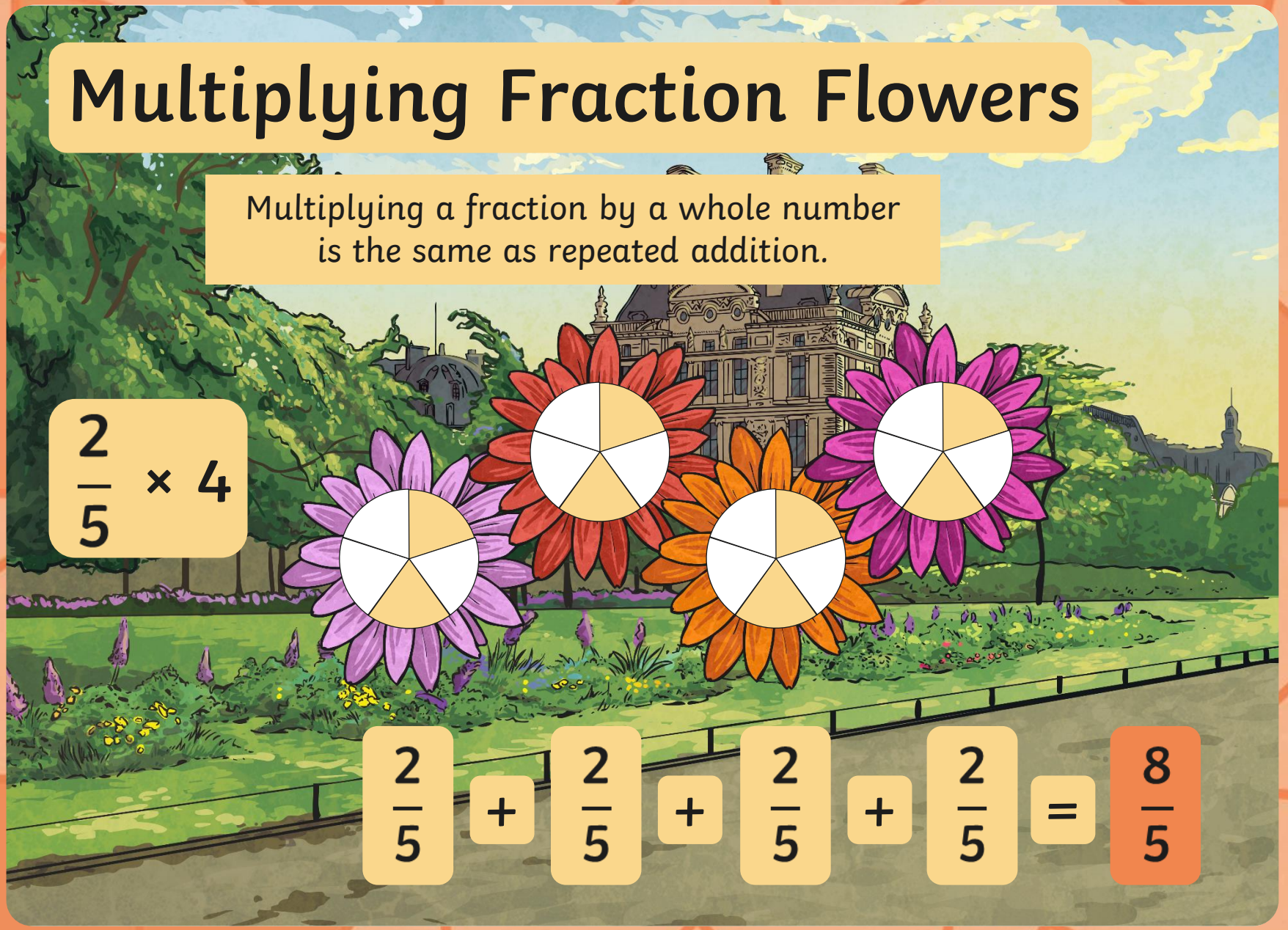


$\frac{9}{4} = 2\frac{1}{4}$

Multiplying Fraction Flowers

Multiplying a fraction by a whole number is the same as repeated addition.

$\frac{2}{5} \times 4$



$$\frac{2}{5} + \frac{2}{5} + \frac{2}{5} + \frac{2}{5} = \frac{8}{5}$$

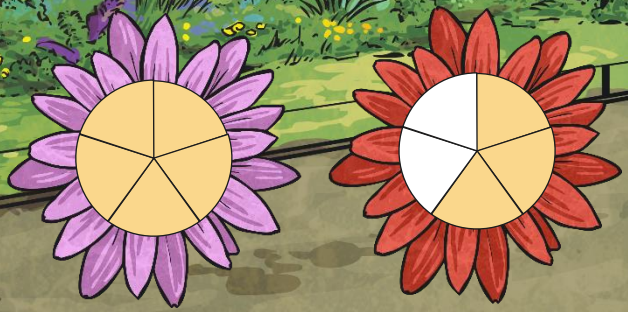
Multiplying Fraction Flowers

The answer to this fraction multiplication is an improper fraction:

$\frac{2}{5} \times 4$ = $\frac{8}{5}$

The answer can be written as an equivalent mixed number:

$\frac{8}{5} = 1\frac{3}{5}$



Investigate It

Look at the calculations we have completed so far.

What happens to the **numerator** when you multiply a fraction by a whole number?

What happens to the **denominator** when you multiply a fraction by a whole number?

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

$$\frac{3}{4} \times 3 = \frac{9}{4}$$

$$\frac{2}{5} \times 4 = \frac{8}{5}$$

Investigate It

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

We multiply the denominator by one.
$3 \times 1 = 3$

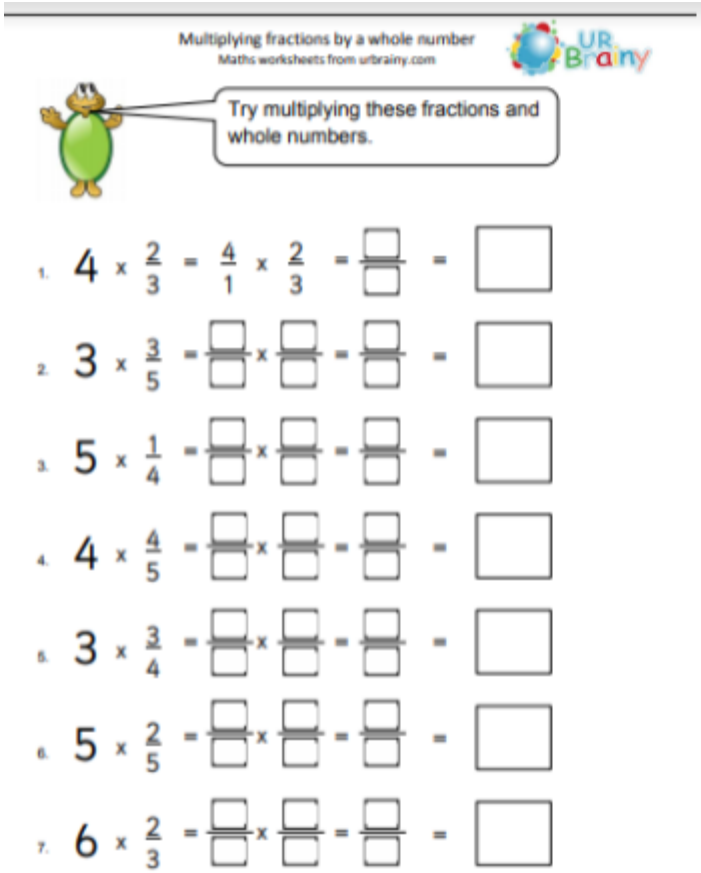
$$\frac{3}{4} \times 3 = \frac{9}{4}$$

We multiply the denominator by one.
$4 \times 1 = 4$

$$\frac{2}{5} \times 4 = \frac{8}{5}$$

We multiply the denominator by one.
$5 \times 1 = 5$

Your turn- Complete p3 in your maths booklet

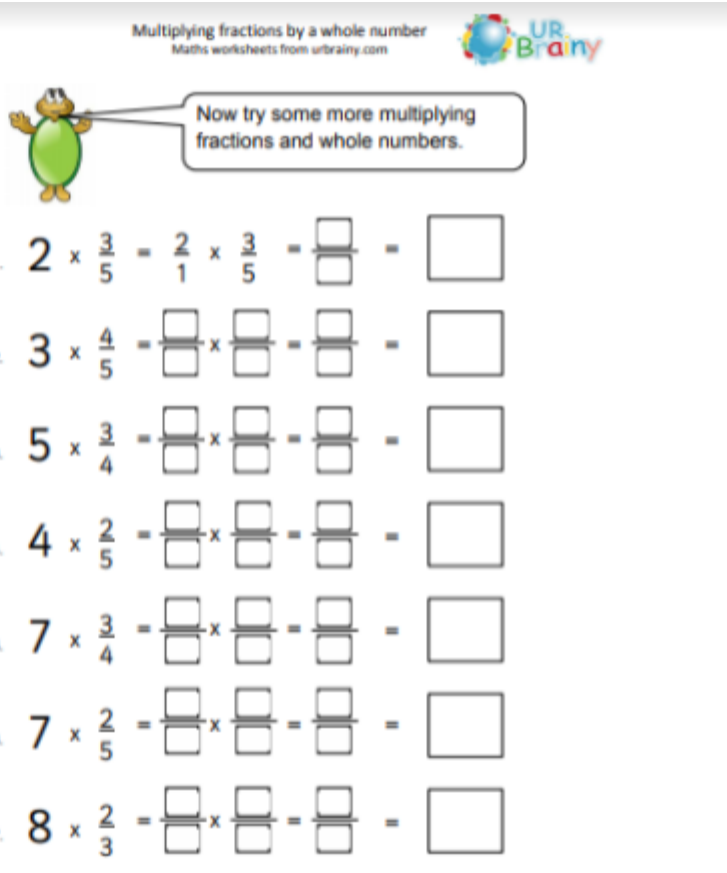


Multiplying fractions by a whole number

Maths worksheets from urbrainy.com

Try multiplying these fractions and whole numbers.

1. $4 \times \frac{2}{3} = \frac{4}{1} \times \frac{2}{3} = \frac{\square}{\square} = \square$
2. $3 \times \frac{3}{5} = \frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square} = \square$
3. $5 \times \frac{1}{4} = \frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square} = \square$
4. $4 \times \frac{4}{5} = \frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square} = \square$
5. $3 \times \frac{3}{4} = \frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square} = \square$
6. $5 \times \frac{2}{5} = \frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square} = \square$
7. $6 \times \frac{2}{3} = \frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square} = \square$



Multiplying fractions by a whole number

Maths worksheets from urbrainy.com

Now try some more multiplying fractions and whole numbers.

1. $2 \times \frac{3}{5} = \frac{2}{1} \times \frac{3}{5} = \frac{\square}{\square} = \square$
2. $3 \times \frac{4}{5} = \frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square} = \square$
3. $5 \times \frac{3}{4} = \frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square} = \square$
4. $4 \times \frac{2}{5} = \frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square} = \square$
5. $7 \times \frac{3}{4} = \frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square} = \square$
6. $7 \times \frac{2}{5} = \frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square} = \square$
7. $8 \times \frac{2}{3} = \frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square} = \square$