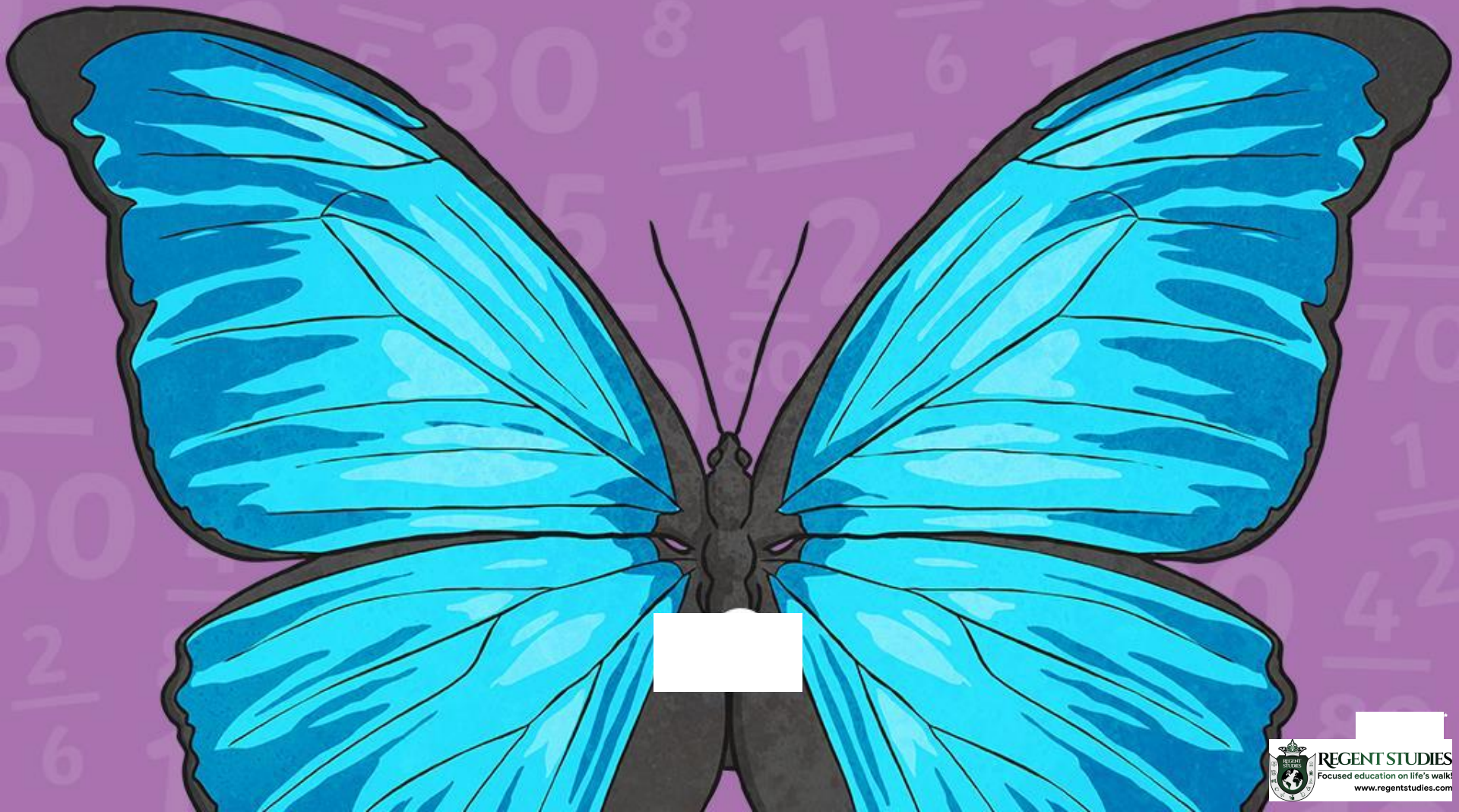
Maths

Fractions

Multiplying Fractions



Aim

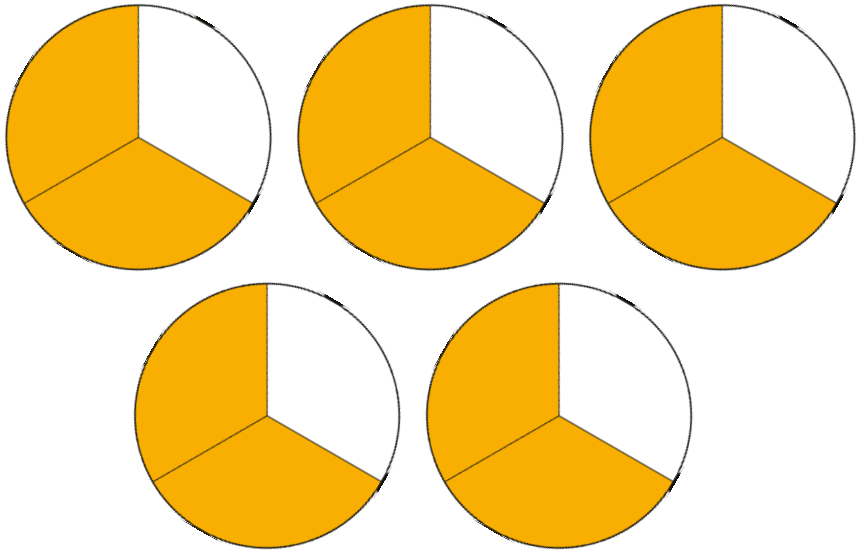
- I can multiply proper fractions together, writing the answer in its simplest form.

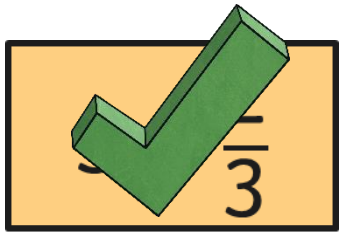
Success Criteria

- I can multiply numerators together first and multiply denominators together second.
- I can reduce a fraction to its simplest form by dividing the numerator and denominator by the greatest common factor.

Fraction Model Match-Up

Choose the expression that correctly describes the coloured parts of this fraction model:





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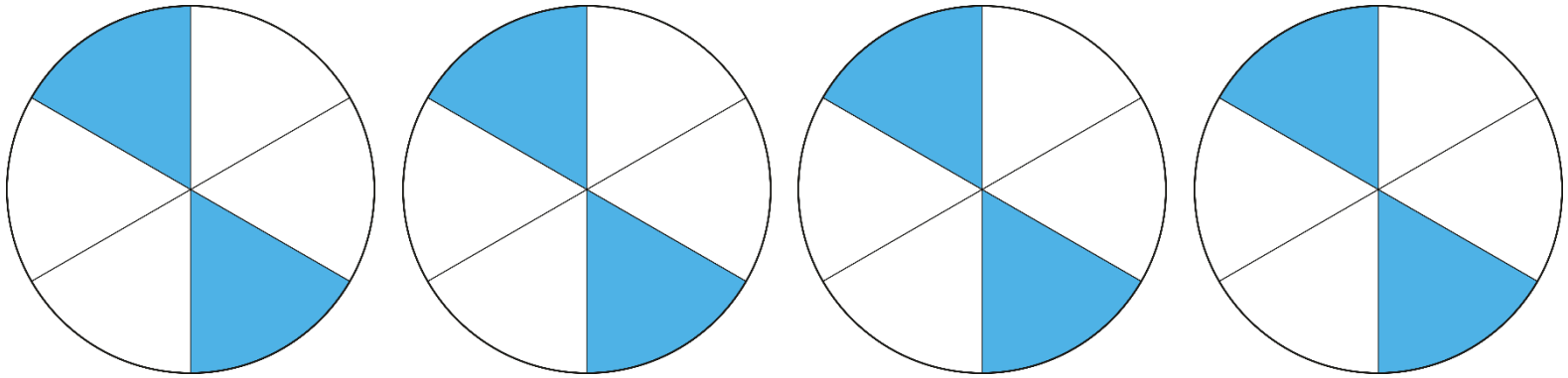

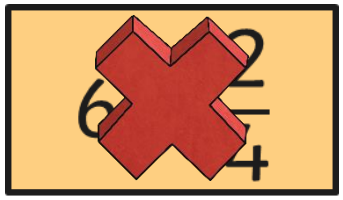

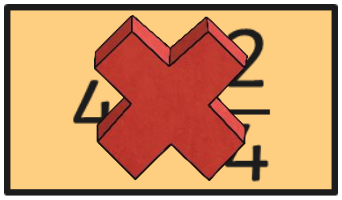

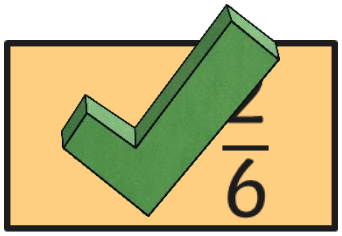

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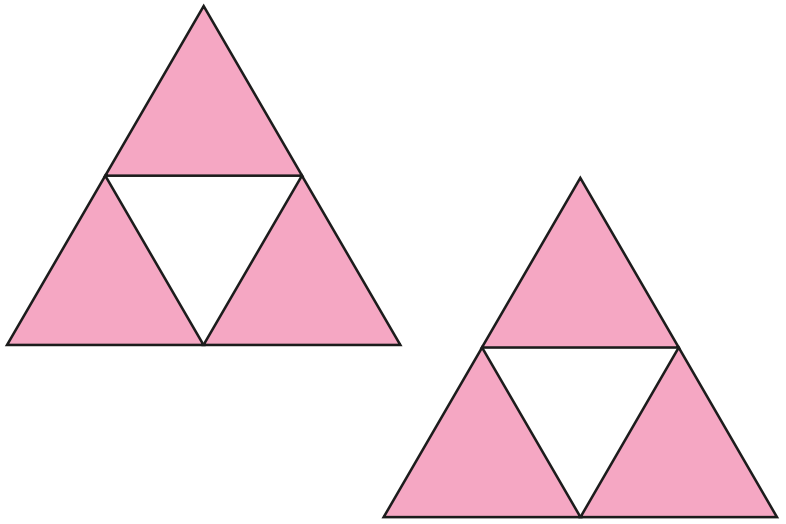

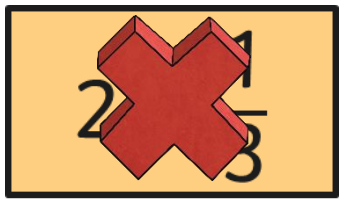

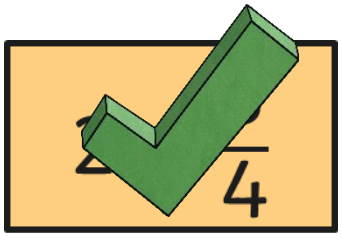

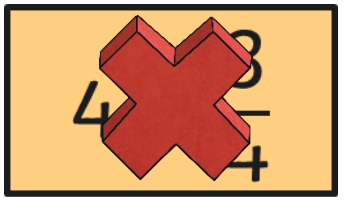

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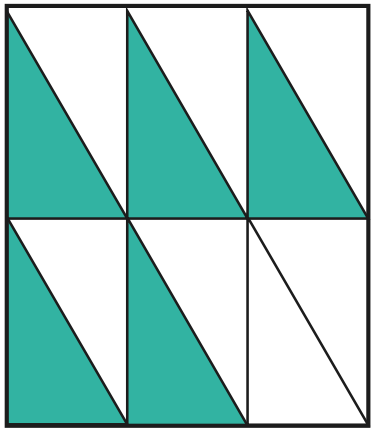

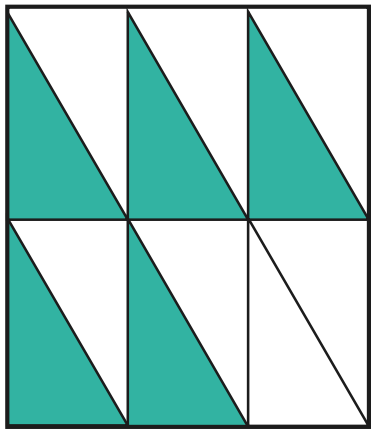

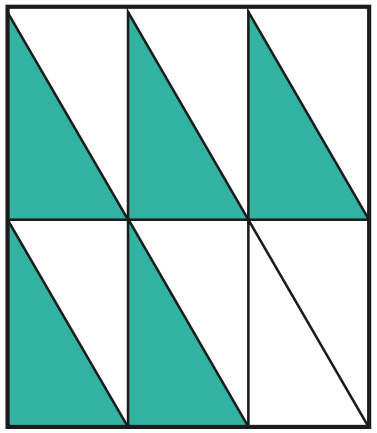

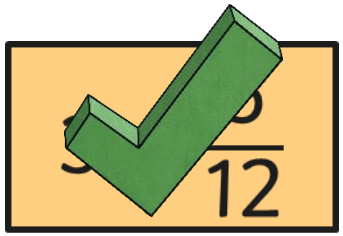

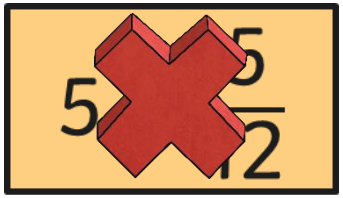

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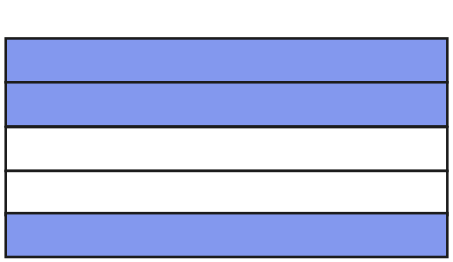
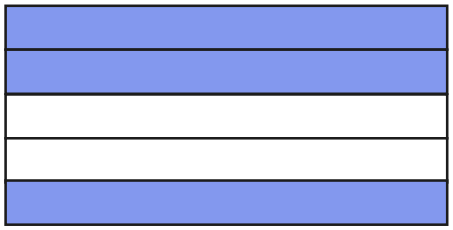
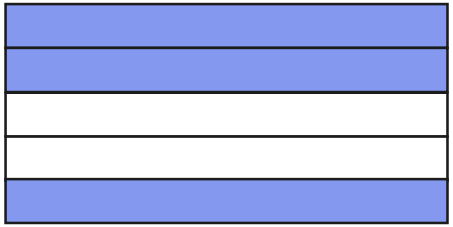
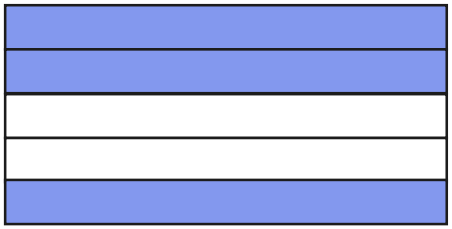
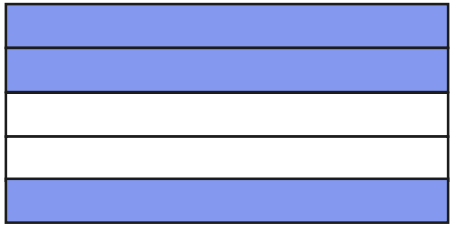
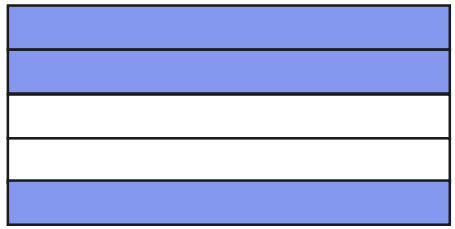


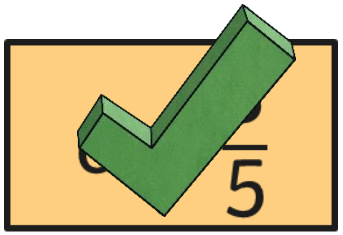






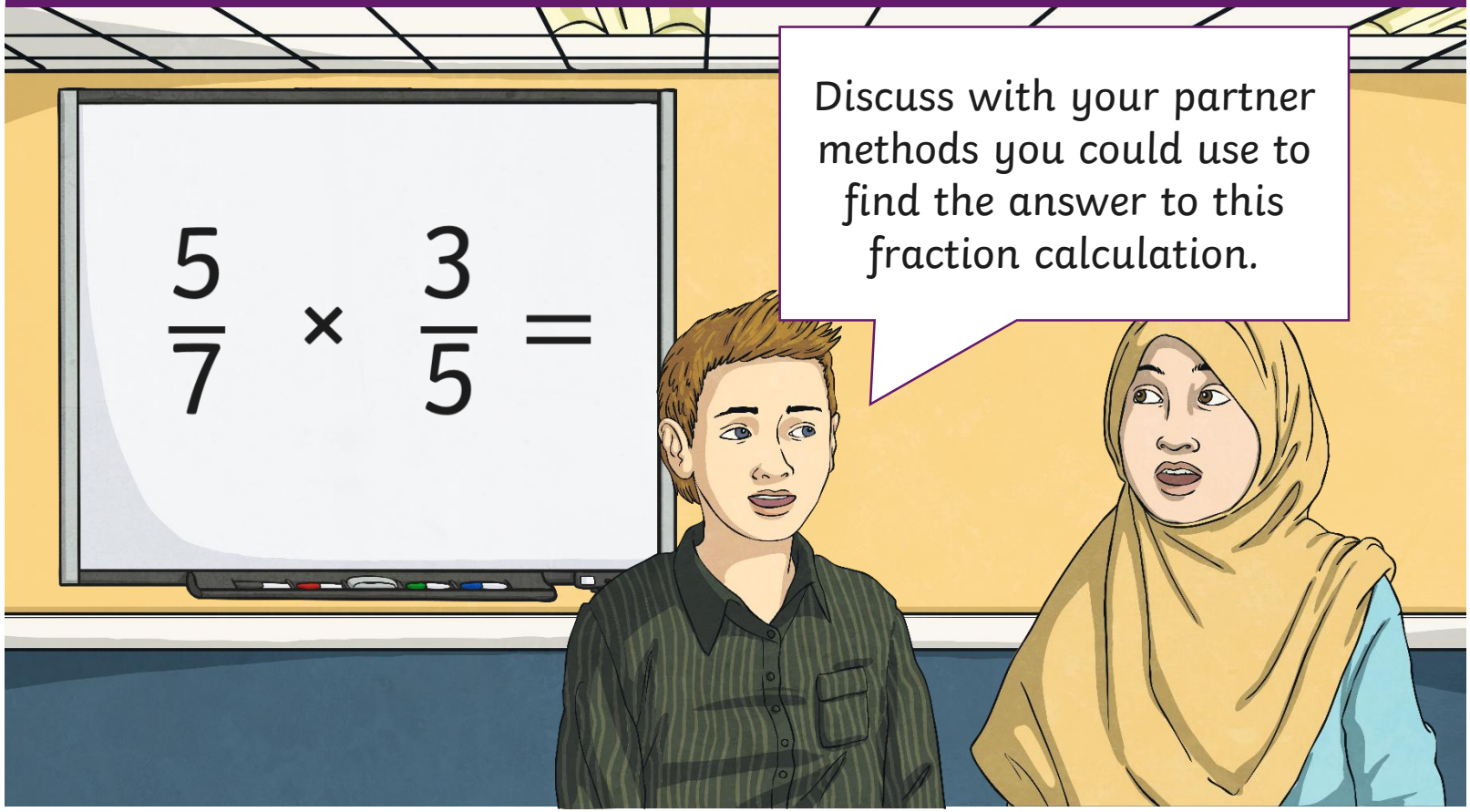






Multiplying Proper Fractions

Look at this fraction calculation:



Multiplying Proper Fractions

Whole Class

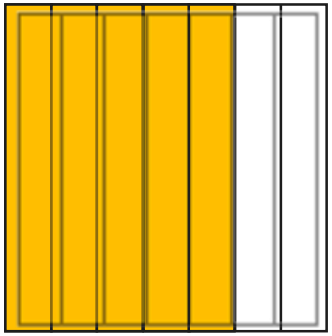
Method 1

Multiplying Proper Fractions

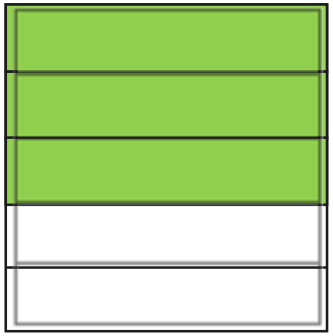
We can use a fraction multiplication bar model. It is helpful to substitute the word 'of' for the multiplication sign:

$\frac{5}{7} \times \frac{3}{5}$ becomes $\frac{5}{7}$ of $\frac{3}{5}$

First, represent the fraction $\frac{5}{7}$ by dividing the bar **vertically**:



Now, represent the fraction $\frac{3}{5}$ by dividing the bar **horizontally**:



When we combine the two models, we can see that

$$\frac{5}{7} \text{ of } \frac{3}{5} = \frac{15}{35} \text{ which can be simplified to } \frac{3}{7}$$

Multiplying Proper Fractions

Whole Class

Method 2

Multiplying Proper Fractions

Multiply the numerators together.

If necessary, simplify the fraction by dividing by the greatest common factor.

$$\frac{4}{6} \times \frac{3}{8} = \frac{12}{48} = \frac{1}{4}$$

Multiply the denominators together.

Here, the greatest common factor is 12.

Multiplying Proper Fractions

Whole Class

Method 3

Multiplying Proper Fractions

Whole Class

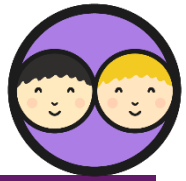
Use the butterfly method to simplify the fractions before multiplying:

Create the wings of the butterfly by looking at the diagonal numbers of the fractions and identifying if there are any common factors.

$$\frac{2}{2} \times \frac{9}{15} = \frac{3}{10}$$

Finally, multiply the deniominators together.

Multiplying Proper Fractions

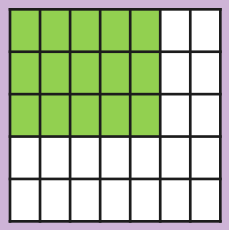


Solve these multiplying fraction problems using any of the methods:

Method 1

Bar Model

$\frac{5}{7} \times \frac{3}{5}$



Method 2

Multiply numerators and denominators then simplify.

$\frac{4}{6} \times \frac{3}{8} = \frac{12}{48} = \frac{1}{4}$

Method 3

Butterfly -

Look for common factors on the diagonal to simplify first. Then, multiply numerators and denominators.

$\frac{1}{2} \times \frac{3}{5} = \frac{3}{10}$ $\quad \frac{4}{9} \times \frac{2}{4} = \frac{2}{9}$ $\quad \frac{7}{10} \times \frac{2}{5} = \frac{7}{25}$

Multiplying Fractions

Multiplying Fractions

I can multiply simple pairs of proper fractions, writing the answer in its simplest form.

Calculate the answer, show your working out.

1. $\frac{3}{25} \times \frac{4}{6}$	2. $\frac{4}{6} \times \frac{12}{15}$
3. $\frac{3}{5} \times \frac{6}{18}$	4. $\frac{4}{5} \times \frac{10}{16}$
5. $\frac{12}{25} \times \frac{5}{10}$	6. $\frac{4}{9} \times \frac{12}{18}$
7. $\frac{10}{12} \times \frac{16}{20}$	8. $\frac{5}{15} \times \frac{15}{20}$

plying Fractions

of proper fractions, writing the answer in its simplest form.

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	2. $\frac{6}{7} \times \frac{5}{8}$
	4. $\frac{8}{12} \times \frac{4}{10}$
	6. $\frac{4}{25} \times \frac{3}{10}$
	8. $\frac{12}{18} \times \frac{5}{10}$

ultiplying Fractions

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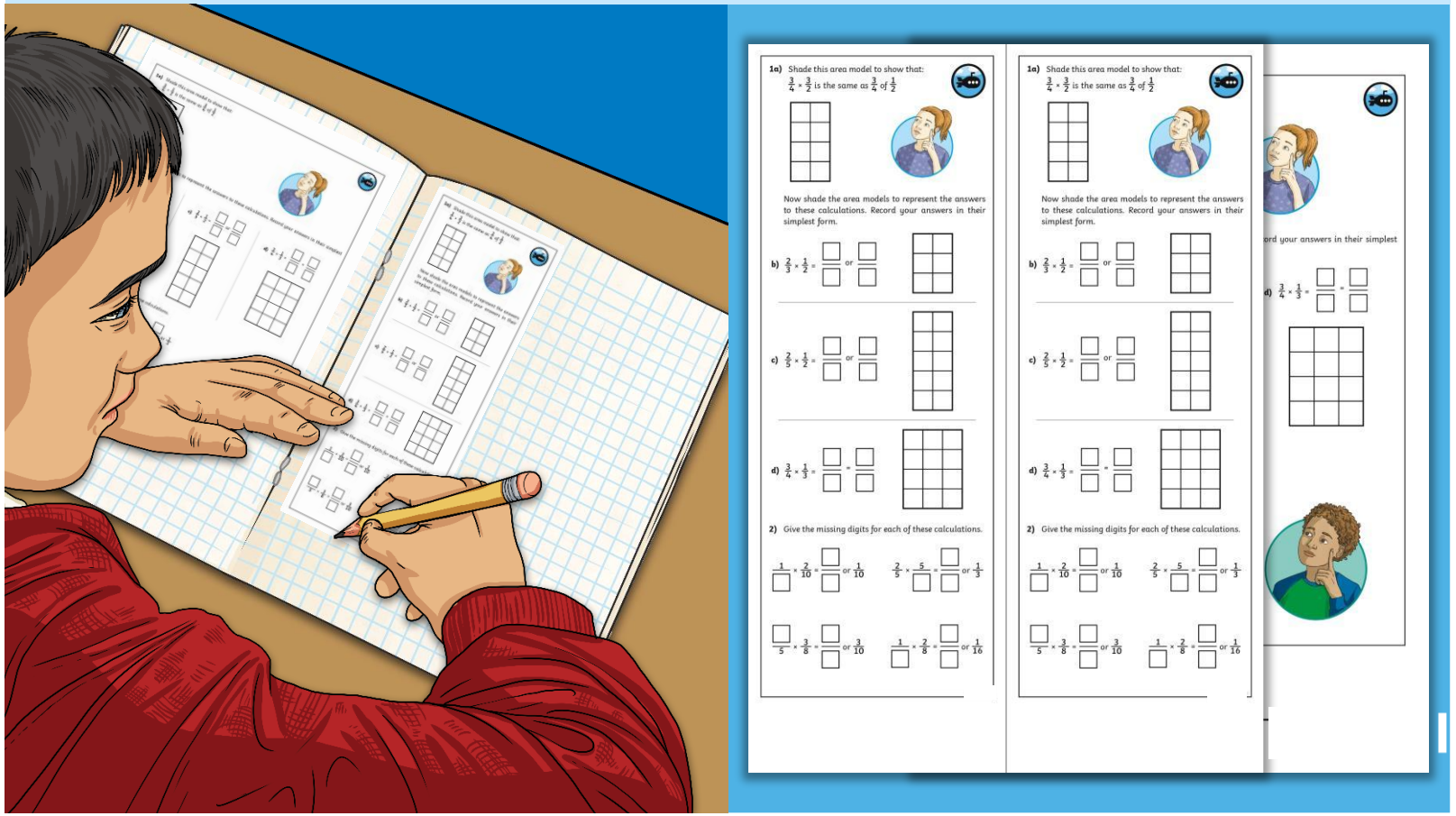
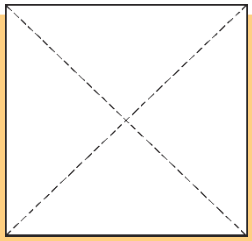
$\frac{2}{4}$	2. $\frac{2}{5} \times \frac{3}{8}$
$\frac{3}{5}$	4. $\frac{1}{4} \times \frac{4}{9}$
$\frac{4}{5}$	6. $\frac{6}{7} \times \frac{8}{10}$
$\frac{6}{8}$	8. $\frac{2}{6} \times \frac{4}{5}$

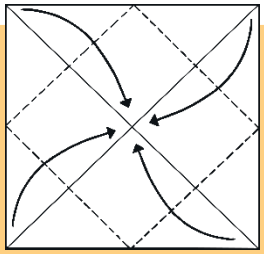
Diving into Mastery

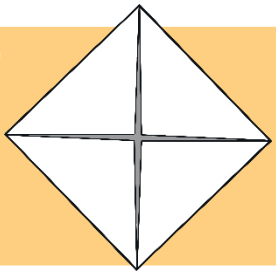
Dive in by completing your own activity!

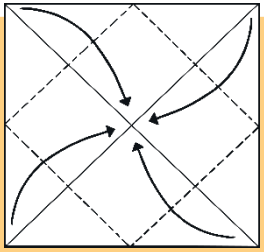


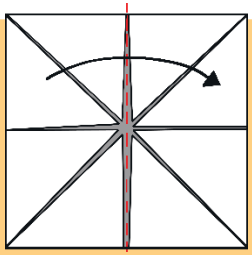
Multiplying Fractions Fortune Teller

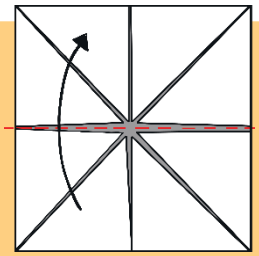
1. 
With pictures face down, fold on both diagonal lines. Unfold.

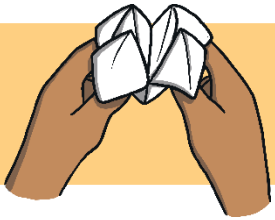
2. 
Fold all corners to the centre.

3. 
Turn paper over.

4. 
Once again, fold all corners to the centre.

5. 
Fold paper in half and unfold.

6. 
Fold in half from top to bottom. Do not unfold.

7. 
Slide thumbs and forefingers under the squares and move the fortune teller back and forth to play.

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