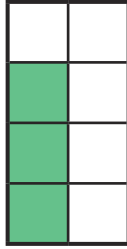
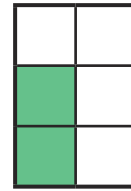




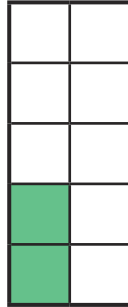
1a) $\frac{3}{4} \times \frac{1}{2} = \frac{3}{4}$ of $\frac{1}{2}$



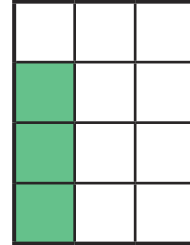
b) $\frac{2}{3} \times \frac{1}{2} = \frac{\boxed{2}}{\boxed{6}}$ or $\frac{\boxed{1}}{\boxed{3}}$



c) $\frac{2}{5} \times \frac{1}{2} = \frac{\boxed{2}}{\boxed{10}}$ or $\frac{\boxed{1}}{\boxed{5}}$



d) $\frac{3}{4} \times \frac{1}{3} = \frac{\boxed{3}}{\boxed{12}} = \frac{\boxed{1}}{\boxed{4}}$



2)

$\frac{1}{\boxed{2}} \times \frac{2}{10} = \frac{\boxed{2}}{\boxed{20}}$ or $\frac{1}{10}$

$\frac{2}{5} \times \frac{5}{\boxed{6}} = \frac{\boxed{10}}{\boxed{30}}$ or $\frac{1}{3}$

$\frac{\boxed{4}}{5} \times \frac{3}{8} = \frac{\boxed{12}}{\boxed{40}}$ or $\frac{3}{10}$

$\frac{1}{\boxed{4}} \times \frac{2}{8} = \frac{\boxed{2}}{\boxed{32}}$ or $\frac{1}{16}$

1) Area model B is correct as the model shows that when we find $\frac{1}{2}$ of $\frac{3}{5}$ we need to firstly split the model into fifths then split our model in half, shading in three of the new sections we have made. The area model will now show $\frac{3}{10}$ overall shaded in.



The fraction shown by model A is $\frac{3}{15}$ or $\frac{1}{5}$.

2) The correct picture is Olivia's as it shows $\frac{1}{4}$ of $\frac{1}{2}$. The calculation we would use to show how much pizza Imran ate would be $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$.



1) Answers: $\frac{6}{1} \times \frac{5}{2} = 15$ and $\frac{5}{1} \times \frac{6}{2} = 15$

Answers: $\frac{1}{6} \times \frac{2}{5} = \frac{2}{30}$ or $\frac{1}{15}$ and $\frac{1}{5} \times \frac{2}{6} = \frac{2}{30}$ or $\frac{1}{15}$

Answers will vary, e.g. $\frac{4}{5} \times \frac{1}{3} = \frac{4}{15}$; $\frac{4}{5} \times \frac{1}{6} = \frac{4}{30}$ or $\frac{2}{15}$

2) Answers will vary. Examples may include:

$$\frac{8}{10} \times \frac{5}{8} = \frac{40}{80} = \frac{1}{2}$$

$$\frac{4}{5} \times \frac{10}{16} = \frac{40}{80} = \frac{1}{2}$$

Calculation Maze Challenge

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



Start with any fraction.

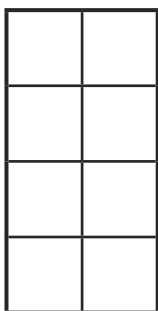
Take a route through the maze, writing down the calculations as you go. What fraction do you finish with?

Start	→ ←	$\times \frac{1}{4}$	→ ←	$\times \frac{1}{3}$	→ ←	$\times \frac{1}{5}$
↑ ↓		↑ ↓		↑ ↓		↑ ↓
$\times \frac{1}{3}$	→ ←	$\times \frac{1}{5}$	→ ←	$\times \frac{1}{4}$	→ ←	$\times \frac{1}{2}$
↑ ↓		↑ ↓		↑ ↓		↑ ↓
$\times \frac{1}{2}$	→ ←	$\times \frac{1}{3}$	→ ←	$\times \frac{1}{5}$	→ ←	$\times \frac{1}{3}$
↑ ↓		↑ ↓		↑ ↓		↑ ↓
$\times \frac{1}{4}$	→ ←	$\times \frac{1}{5}$	→ ←	$\times \frac{1}{2}$	→ ←	Finish



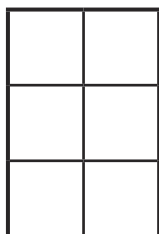
1a) Shade this area model to show that:

$$\frac{3}{4} \times \frac{1}{2} \text{ is the same as } \frac{3}{4} \text{ of } \frac{1}{2}$$



Now shade the area models to represent the answers to these calculations. Record your answers in their simplest form.

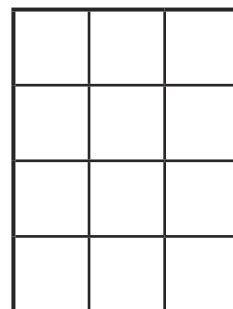
b) $\frac{2}{3} \times \frac{1}{2} = \frac{\square}{\square}$ or $\frac{\square}{\square}$



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



d) $\frac{3}{4} \times \frac{1}{3} = \frac{\square}{\square} = \frac{\square}{\square}$



2) Give the missing digits for each of these calculations.

$$\frac{1}{\square} \times \frac{2}{10} = \frac{\square}{\square} \text{ or } \frac{1}{10}$$

$$\frac{2}{5} \times \frac{5}{\square} = \frac{\square}{\square} \text{ or } \frac{1}{3}$$

$$\frac{\square}{5} \times \frac{3}{8} = \frac{\square}{\square} \text{ or } \frac{3}{10}$$

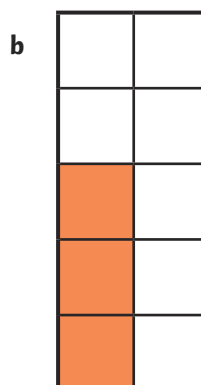
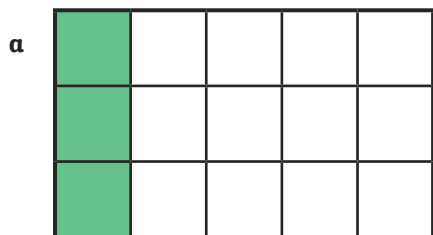
$$\frac{1}{\square} \times \frac{2}{8} = \frac{\square}{\square} \text{ or } \frac{1}{16}$$





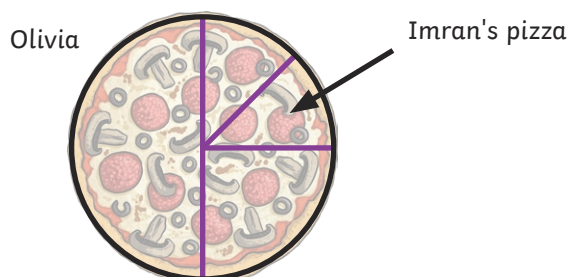
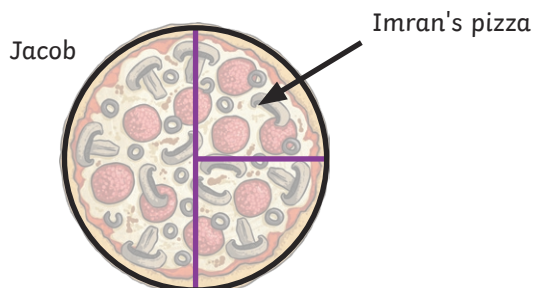
1) Archie has drawn two different area models to show what happens when $\frac{1}{2}$ is multiplied by $\frac{3}{5}$.

Explain to Archie which of his area models is correct and why.



2) A family ordered a large pizza to share. They managed to eat $\frac{1}{2}$ of the pizza and saved the rest. The next day Imran ate $\frac{1}{4}$ of the leftover pizza. How much of the whole pizza did Imran eat?

Jacob and Olivia both tried to represent the problem. Who was correct? What calculation shows how much pizza Imran ate?





1) Freya is given a set of digit cards from 1 to 6.

She uses four of the cards to make two fractions, e.g. $\frac{1}{2}$ and $\frac{3}{4}$.

She multiplies these fractions together to make $\frac{3}{8}$.

a) What is the greatest possible answer that Freya could make by using the digit cards 1 to 6 in this way?

(She can only use each digit once.)

b) What is the smallest possible fraction she can make?

c) Freya makes a fraction with a denominator > 6 . Can you find more than one way?

2) Using a different number (any number) for each part of the fraction, can you find five different ways to complete this calculation?

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



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. $\frac{4}{6} \times \frac{2}{4}$

2. $\frac{2}{5} \times \frac{3}{8}$

3. $\frac{4}{6} \times \frac{3}{5}$

4. $\frac{1}{4} \times \frac{4}{9}$

5. $\frac{3}{4} \times \frac{4}{5}$

6. $\frac{6}{7} \times \frac{8}{10}$

7. $\frac{4}{5} \times \frac{6}{8}$

8. $\frac{2}{6} \times \frac{4}{5}$



Multiplying Fractions Answers

Calculate the answer, show your working out.

1.

$$\frac{4}{6} \times \frac{2}{4}$$
$$\frac{4}{6} \times \frac{2}{4} = \frac{8}{24} = \frac{1}{3}$$

2.

$$\frac{2}{5} \times \frac{3}{8}$$
$$\frac{2}{5} \times \frac{3}{8} = \frac{6}{40} = \frac{3}{20}$$

3.

$$\frac{4}{6} \times \frac{3}{5}$$
$$\frac{4}{6} \times \frac{3}{5} = \frac{12}{30} = \frac{2}{5}$$

4.

$$\frac{1}{4} \times \frac{4}{9}$$
$$\frac{1}{4} \times \frac{4}{9} = \frac{4}{36} = \frac{1}{9}$$

5.

$$\frac{3}{4} \times \frac{4}{5}$$
$$\frac{3}{4} \times \frac{4}{5} = \frac{12}{20} = \frac{3}{5}$$

6.

$$\frac{6}{7} \times \frac{8}{10}$$
$$\frac{6}{7} \times \frac{8}{10} = \frac{48}{70} = \frac{24}{35}$$

7.

$$\frac{4}{5} \times \frac{6}{8}$$
$$\frac{4}{5} \times \frac{6}{8} = \frac{24}{40} = \frac{3}{5}$$

8.

$$\frac{2}{6} \times \frac{4}{5}$$
$$\frac{2}{6} \times \frac{4}{5} = \frac{8}{30} = \frac{4}{15}$$



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



Multiplying Fractions Answers

Calculate the answer, show your working out.

1.

$$\frac{4}{5} \times \frac{3}{8}$$
$$\frac{4}{5} \times \frac{3}{8} = \frac{12}{40} = \frac{3}{10}$$

2.

$$\frac{6}{7} \times \frac{5}{8}$$
$$\frac{6}{7} \times \frac{5}{8} = \frac{30}{56} = \frac{15}{28}$$

3.

$$\frac{4}{7} \times \frac{3}{6}$$
$$\frac{4}{7} \times \frac{3}{6} = \frac{12}{42} = \frac{2}{7}$$

4.

$$\frac{8}{12} \times \frac{4}{10}$$
$$\frac{8}{12} \times \frac{4}{10} = \frac{32}{120} = \frac{4}{15}$$

5.

$$\frac{8}{12} \times \frac{5}{8}$$
$$\frac{8}{12} \times \frac{5}{8} = \frac{40}{96} = \frac{5}{12}$$

6.

$$\frac{4}{25} \times \frac{3}{10}$$
$$\frac{4}{25} \times \frac{3}{10} = \frac{12}{250} = \frac{6}{125}$$

7.

$$\frac{12}{15} \times \frac{4}{6}$$
$$\frac{12}{15} \times \frac{4}{6} = \frac{48}{90} = \frac{8}{15}$$

8.

$$\frac{12}{18} \times \frac{5}{10}$$
$$\frac{12}{18} \times \frac{5}{10} = \frac{60}{180} = \frac{1}{3}$$



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. $\frac{5}{15} \times \frac{15}{20}$



Multiplying Fractions Answers

Calculate the answer, show your working out.

1.

$$\frac{3}{25} \times \frac{4}{6}$$

$$\frac{3}{25} \times \frac{4}{6} = \frac{12}{150} = \frac{2}{25}$$

2.

$$\frac{4}{6} \times \frac{12}{15}$$

$$\frac{4}{6} \times \frac{12}{15} = \frac{48}{90} = \frac{8}{15}$$

3.

$$\frac{3}{5} \times \frac{6}{18}$$

$$\frac{3}{5} \times \frac{6}{18} = \frac{18}{90} = \frac{1}{5}$$

4.

$$\frac{4}{5} \times \frac{10}{16}$$

$$\frac{4}{5} \times \frac{10}{16} = \frac{40}{80} = \frac{1}{2}$$

5.

$$\frac{12}{25} \times \frac{5}{10}$$

$$\frac{12}{25} \times \frac{5}{10} = \frac{60}{250} = \frac{6}{25}$$

6.

$$\frac{4}{9} \times \frac{12}{18}$$

$$\frac{4}{9} \times \frac{12}{18} = \frac{48}{162} = \frac{8}{27}$$

7.

$$\frac{10}{12} \times \frac{16}{20}$$

$$\frac{10}{12} \times \frac{16}{20} = \frac{160}{240} = \frac{2}{3}$$

8.

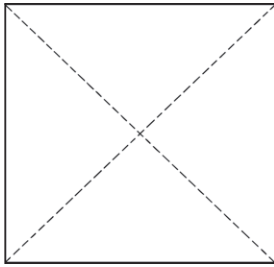
$$\frac{5}{15} \times \frac{15}{20}$$

$$\frac{5}{15} \times \frac{15}{20} = \frac{75}{300} = \frac{1}{4}$$

Multiplying Fractions Fortune Teller

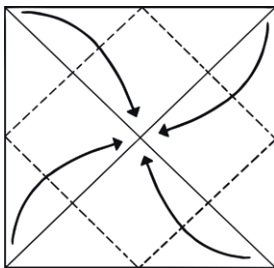
Instructions

①



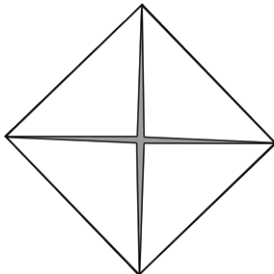
With pictures face down, fold on both diagonal lines. Unfold.

②



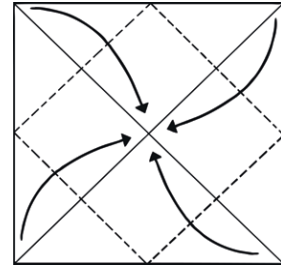
Fold all four corners to the centre.

③



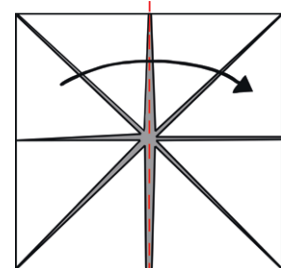
Turn paper over.

④



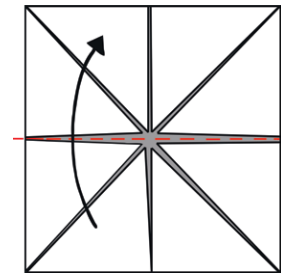
Once again, fold all corners to the centre.

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.

7	$\frac{2}{3} + \frac{5}{4}$	3
$\frac{5}{12} + \frac{4}{10}$	$\frac{5}{6}$	$\frac{3}{5} + \frac{4}{14}$
$\frac{1}{6}$	$\frac{2}{5}$	$\frac{4}{15}$
$\frac{15}{7}$	$\frac{9}{5}$	$\frac{3}{5} + \frac{4}{14}$
$\frac{10}{7} + \frac{6}{14}$	$\frac{3}{10}$	$\frac{9}{5}$
5	$\frac{8}{3} + \frac{5}{14}$	$\frac{9}{28}$
	$\frac{3}{4} + \frac{1}{14}$	$\frac{1}{9}$

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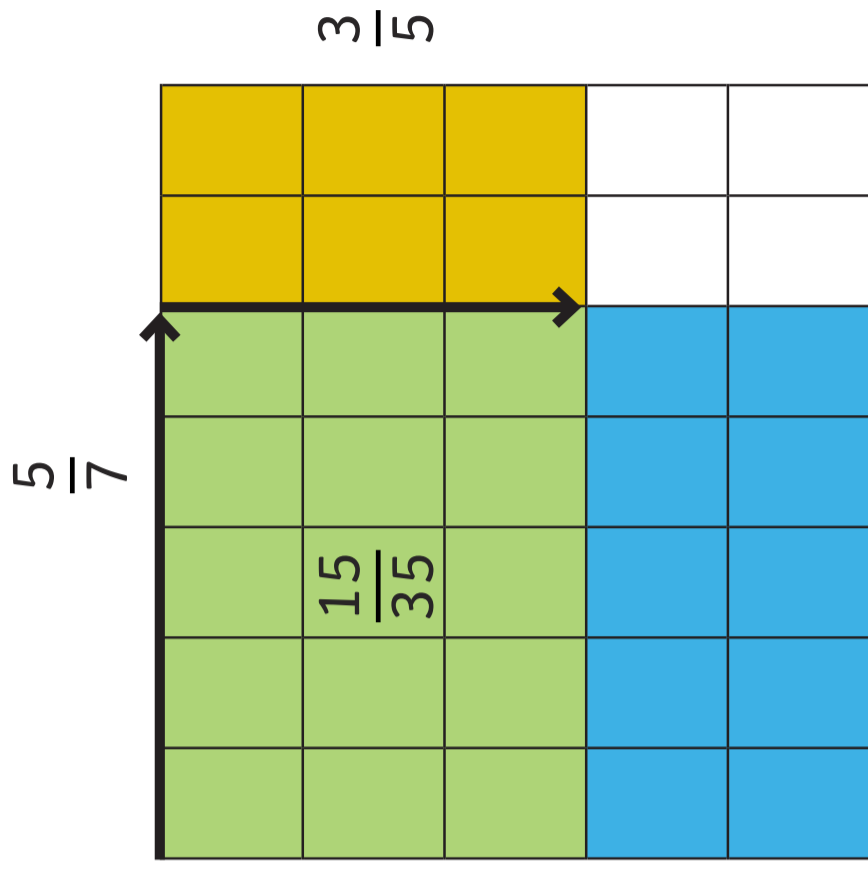
How to Multiply Fractions

Use a fraction multiplication bar model.

It is helpful to substitute the word 'of' for the multiplication sign.

Remember to simplify the answer if possible.

$$\frac{5}{7} \times \frac{3}{5} = \frac{15}{35} = \frac{3}{7}$$



Multiply the numerators together.

Multiply the denominators together.

Simplify the answer if possible.

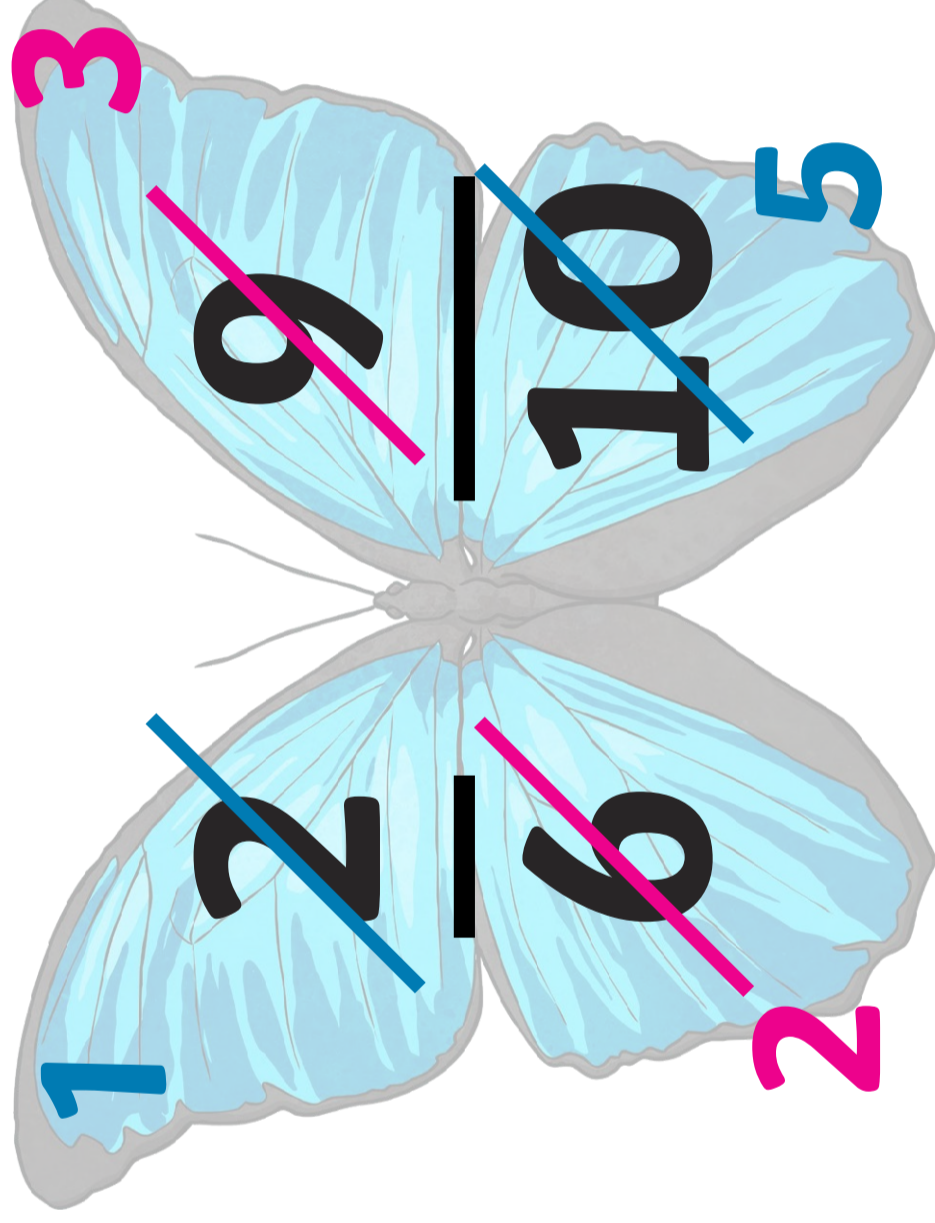
$$\frac{4}{6} \times \frac{3}{8} = \frac{12}{48} = \frac{1}{4}$$

$4 \times 3 = 12$
 $6 \times 8 = 48$

Look at the diagonal numbers of the fractions and identify whether there are any common factors.

Simplify the diagonals if possible.

Then, multiply the numerators together and multiply the denominators together.



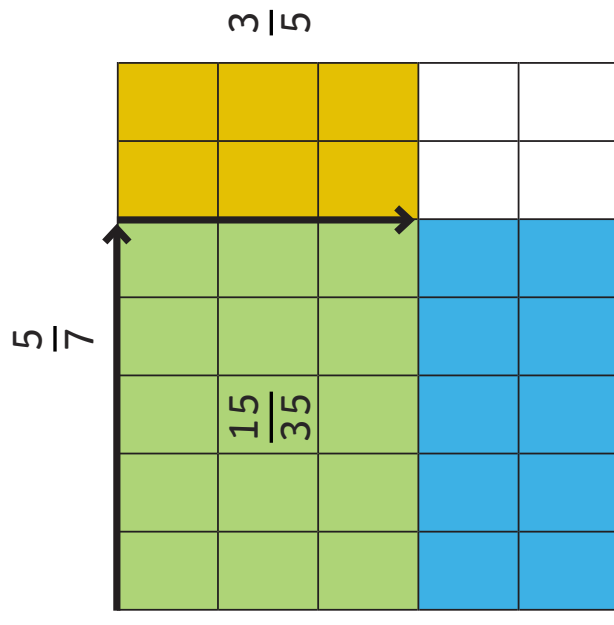
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Multiply the denominators together.

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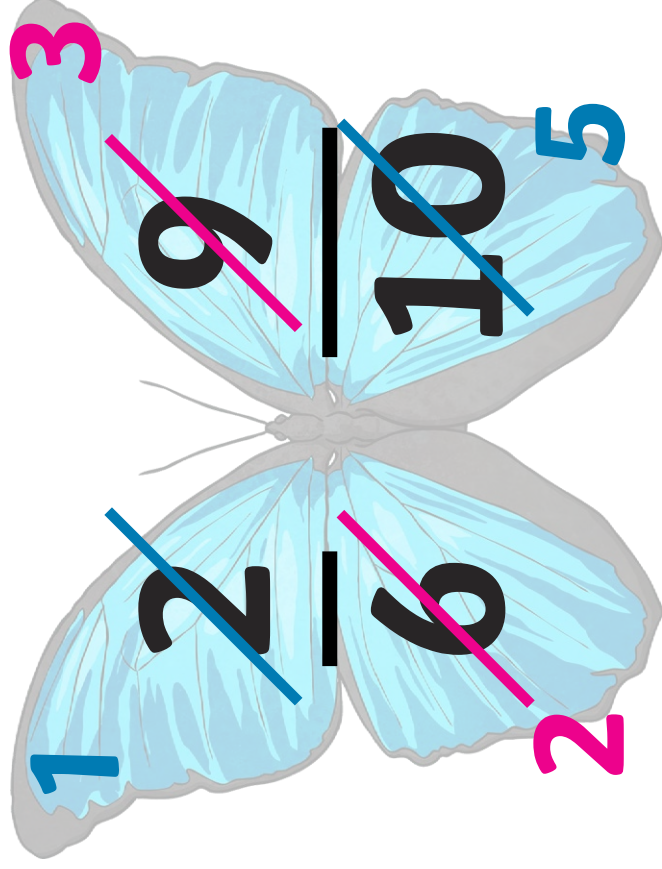
$$\frac{4}{6} \times \frac{3}{8} = \frac{12}{48} = \frac{1}{4}$$

$4 \times 3 = 12$
 $6 \times 8 = 48$

Look at the diagonal numbers of the fractions and identify whether there are any common factors.

Simplify the diagonals if possible.

Then, multiply the numerators together and multiply the denominators together.



How to Multiply

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It is helpful to substitute the word 'of' for the multiplication sign.

Remember to simplify the answer if possible.

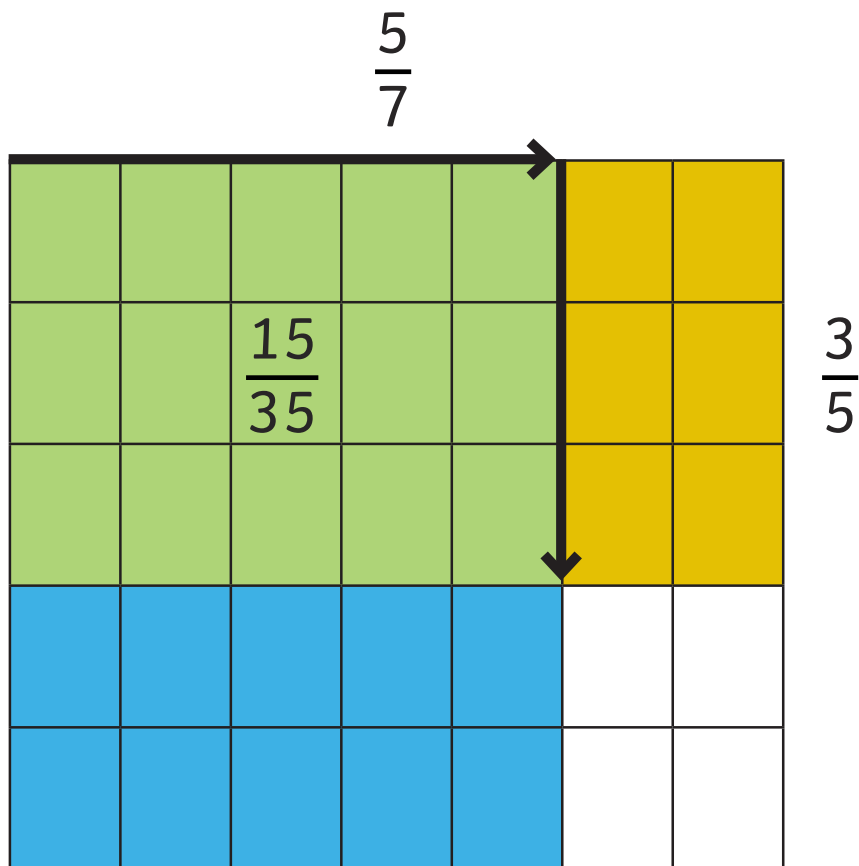
$$\frac{5}{7} \times \frac{3}{5} = \frac{15}{35} = \frac{3}{7}$$

Multiply the numerators together.

Multiply the denominators together.

Simplify the answer if possible.

Multiply Fractions

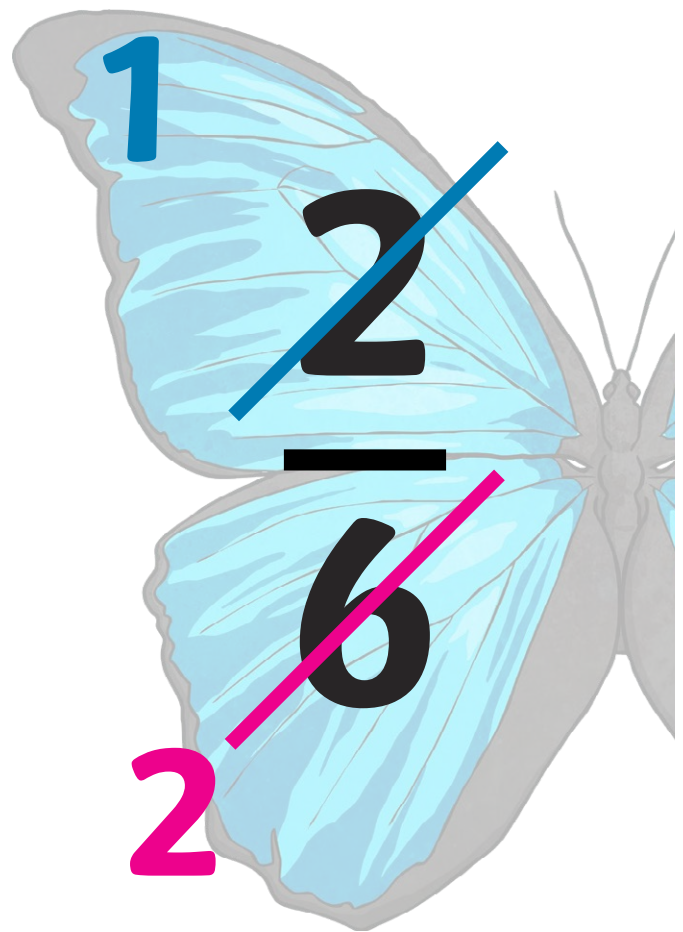


$$\begin{array}{c}
 4 \times 3 = 12 \\
 \underbrace{\hspace{10em}} \\
 \frac{4}{6} \times \frac{3}{8} = \frac{12}{48} = \frac{1}{4} \\
 \underbrace{\hspace{10em}} \\
 6 \times 8 = 48
 \end{array}$$

Look at the diagonal numbers of the fractions and common factors.

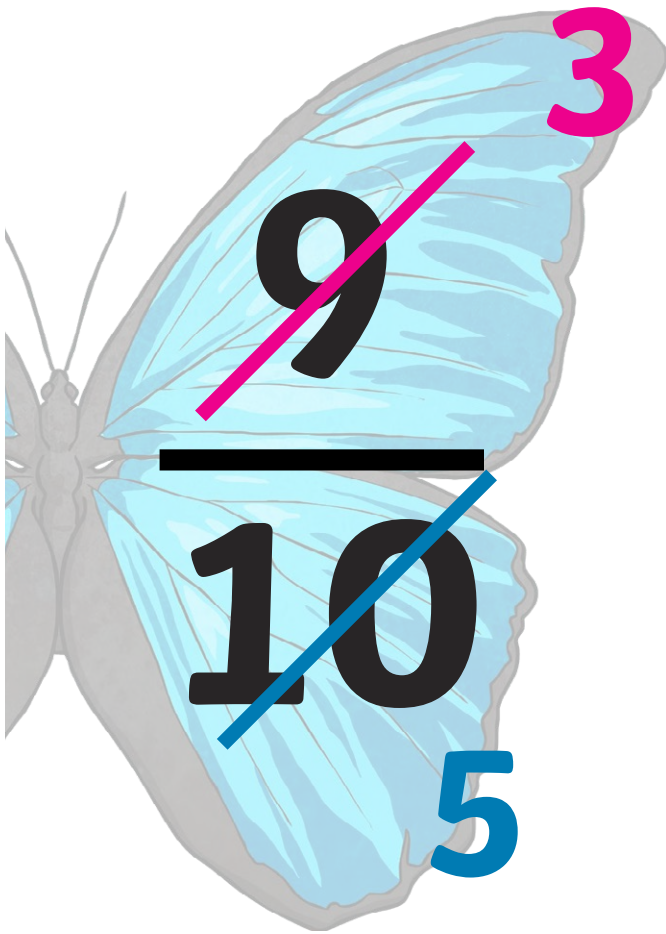
Simplify the diagonals if possible.

Then, multiply the numerators together and mu



is and identify whether there are any

multiply the denominators together.



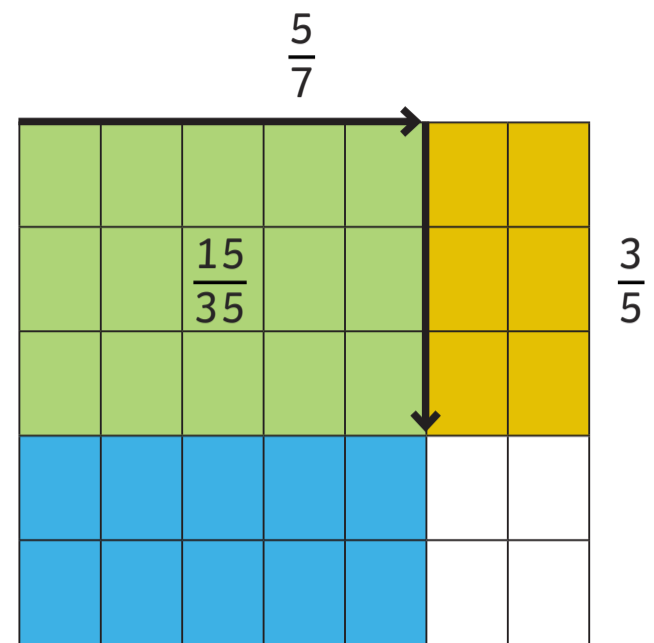
How to Multiply Fractions

Use a fraction multiplication bar model.

It is helpful to substitute the word 'of' for the multiplication sign.

Remember to simplify the answer if possible.

$$\frac{5}{7} \times \frac{3}{5} = \frac{15}{35} = \frac{3}{7}$$



Multiply the numerators together.

Multiply the denominators together.

Simplify the answer if possible.

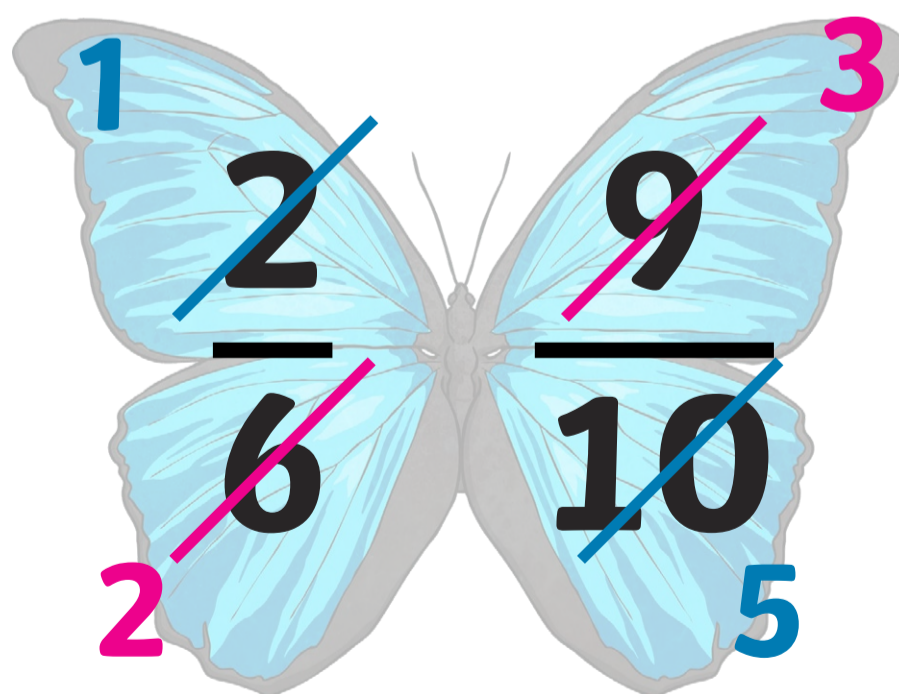
$$\frac{4}{6} \times \frac{3}{8} = \frac{12}{48} = \frac{1}{4}$$

$4 \times 3 = 12$
 $6 \times 8 = 48$

Look at the diagonal numbers of the fractions and identify whether there are any common factors.

Simplify the diagonals if possible.

Then, multiply the numerators together and multiply the denominators together.



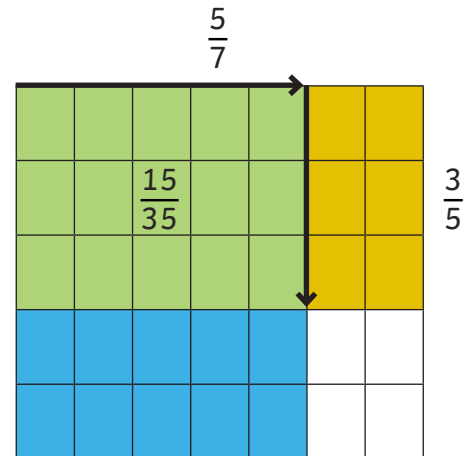
How to Multiply Fractions

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It is helpful to substitute the word 'of' for the multiplication sign.

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$$\frac{5}{7} \times \frac{3}{5} = \frac{15}{35} = \frac{3}{7}$$



Multiply the numerators together.

Multiply the denominators together.

Simplify the answer if possible.

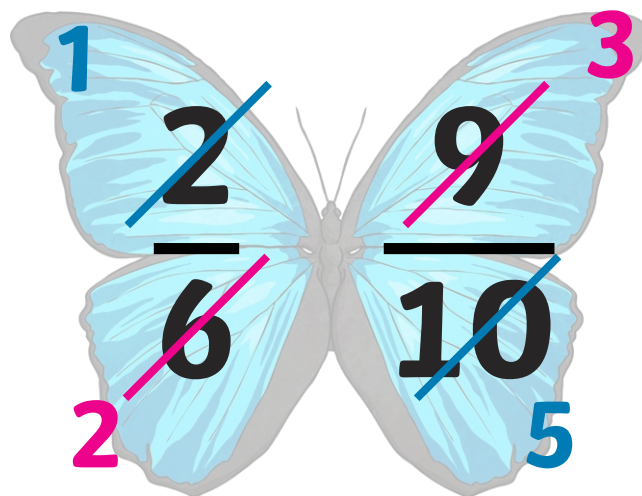
$$\frac{4}{6} \times \frac{3}{8} = \frac{12}{48} = \frac{1}{4}$$

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Look at the diagonal numbers of the fractions and identify whether there are any common factors.

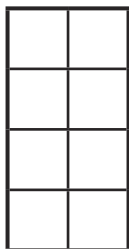
Simplify the diagonals if possible.

Then, multiply the numerators together and multiply the denominators together.



1a) Shade this area model to show that:

$$\frac{3}{4} \times \frac{1}{2} \text{ is the same as } \frac{3}{4} \text{ of } \frac{1}{2}$$



Now shade the area models to represent the answers to these calculations. Record your answers in their simplest form.

b) $\frac{2}{3} \times \frac{1}{2} = \frac{\square}{\square}$ or $\frac{\square}{\square}$

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

d) $\frac{3}{4} \times \frac{1}{3} = \frac{\square}{\square} = \frac{\square}{\square}$

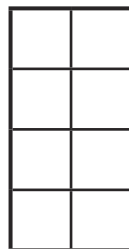
2) Give the missing digits for each of these calculations.

$$\frac{1}{\square} \times \frac{2}{10} = \frac{\square}{\square} \text{ or } \frac{1}{10} \quad \frac{2}{5} \times \frac{5}{\square} = \frac{\square}{\square} \text{ or } \frac{1}{3}$$

$$\frac{\square}{5} \times \frac{3}{8} = \frac{\square}{\square} \text{ or } \frac{3}{10} \quad \frac{1}{\square} \times \frac{2}{8} = \frac{\square}{\square} \text{ or } \frac{1}{16}$$

1a) Shade this area model to show that:

$$\frac{3}{4} \times \frac{1}{2} \text{ is the same as } \frac{3}{4} \text{ of } \frac{1}{2}$$



Now shade the area models to represent the answers to these calculations. Record your answers in their simplest form.

b) $\frac{2}{3} \times \frac{1}{2} = \frac{\square}{\square}$ or $\frac{\square}{\square}$

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

d) $\frac{3}{4} \times \frac{1}{3} = \frac{\square}{\square} = \frac{\square}{\square}$

2) Give the missing digits for each of these calculations.

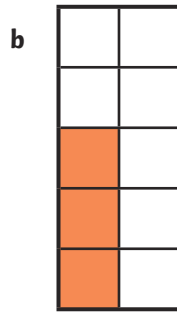
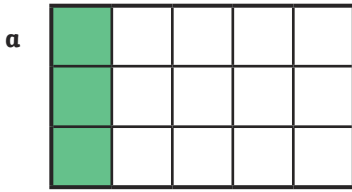
$$\frac{1}{\square} \times \frac{2}{10} = \frac{\square}{\square} \text{ or } \frac{1}{10} \quad \frac{2}{5} \times \frac{5}{\square} = \frac{\square}{\square} \text{ or } \frac{1}{3}$$

$$\frac{\square}{5} \times \frac{3}{8} = \frac{\square}{\square} \text{ or } \frac{3}{10} \quad \frac{1}{\square} \times \frac{2}{8} = \frac{\square}{\square} \text{ or } \frac{1}{16}$$

- 1) Archie has drawn two different area models to show what happens when $\frac{1}{2}$ is multiplied by $\frac{3}{5}$.

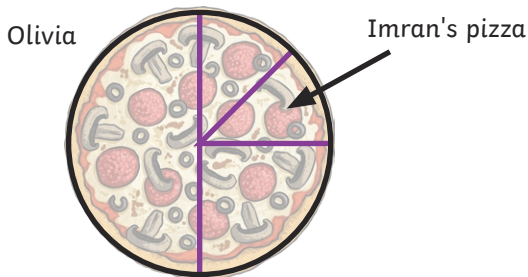
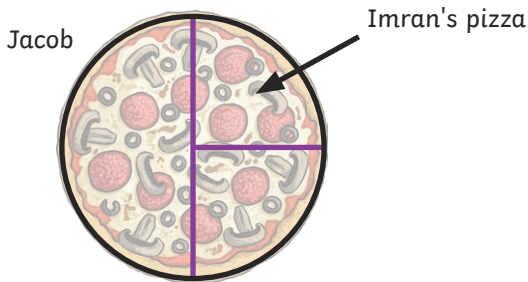


Explain to Archie which of his area models is correct and why.



- 2) A family ordered a large pizza to share. They managed to eat $\frac{1}{2}$ of the pizza and saved the rest. The next day Imran ate $\frac{1}{4}$ of the leftover pizza. How much of the whole pizza did Imran eat?

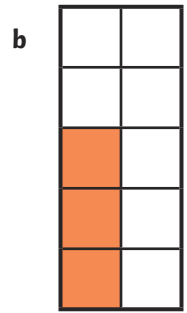
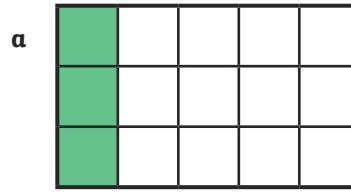
Jacob and Olivia both tried to represent the problem. Who was correct? What calculation shows how much pizza Imran ate?



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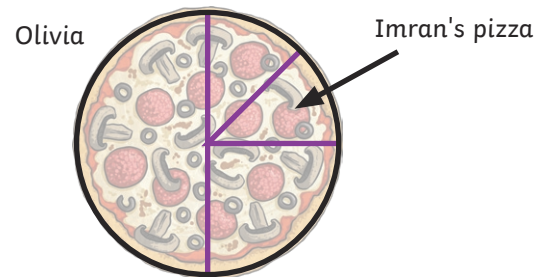
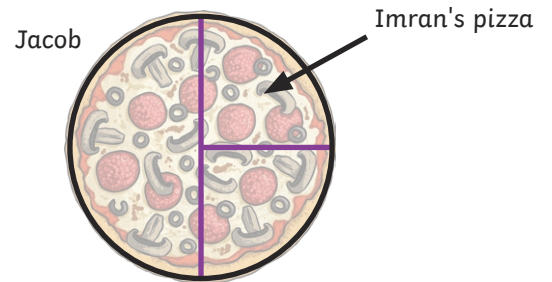


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- 1) Freya is given a set of digit cards from 1 to 6.



She uses four of the cards to make two fractions, e.g. $\frac{1}{2}$ and $\frac{3}{4}$.

She multiplies these fractions together to make $\frac{3}{8}$.

- a) What is the greatest possible answer that Freya could make by using the digit cards 1 to 6 in this way?
(She can only use each digit once.)
- b) What is the smallest possible fraction she can make?
- c) Freya makes a fraction with a denominator > 6 . Can you find more than one way?
- 2) Using a different number (any number) for each part of the fraction, can you find five different ways to complete this calculation?

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

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