

Multiply Unit and Non Unit Fractions by an Integer (Monday)

Amir is multiplying fractions by a whole number.



$$\frac{1}{5} \times 5 = \frac{5}{25}$$

Can you explain his mistake?

Always, sometimes, never?

When you multiply a unit fraction by the same number as it's denominator the answer will be one whole.

I am thinking of a unit fraction.

When I multiply it by 4 it will be equivalent to $\frac{1}{2}$

When I multiply it by 2 it will be equivalent to $\frac{1}{4}$

What is my fraction?

What do I need to multiply my fraction by so that my answer is equivalent to $\frac{3}{4}$?

Can you create your own version of this problem?

Multiply Unit and Non Unit Fractions by an Integer ANSWERS (Monday)

Amir is multiplying fractions by a whole number.



$$\frac{1}{5} \times 5 = \frac{5}{25}$$

Can you explain his mistake?

Amir has multiplied both the numerator and the denominator so he has found an equivalent fraction. Encourage children to draw models to represent this correctly.

Always, sometimes, never?

When you multiply a unit fraction by the same number as its denominator the answer will be one whole.

Always - because the numerator was 1 it will always be the same as your denominator when multiplied which means that it is a whole.

$$\text{e.g. } \frac{1}{3} \times 3 = \frac{3}{3} = 1$$

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What is my fraction?

What do I need to multiply my fraction by so that my answer is equivalent to $\frac{3}{4}$?

Can you create your own version of this problem?

$\frac{1}{8}$ because

$$4 \times \frac{1}{8} = \frac{4}{8} = \frac{1}{2}$$

and

$$2 \times \frac{1}{8} = \frac{2}{8} = \frac{1}{4}$$

6 because

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

Multiply Mixed Numbers by an Integer (Tuesday)

Jack runs $2\frac{2}{3}$ miles three times per week.

Dexter runs $3\frac{3}{4}$ miles twice a week.

Who runs the furthest during the week?

Explain your answer.

Work out the missing numbers.

$$2\frac{2}{8} \times \boxed{} = 7\frac{7}{8}$$

Explain how you worked it out.

Multiply Mixed Numbers by an Integer ANSWERS (Tuesday)

Jack runs $2\frac{2}{3}$ miles three times per week.

Dexter runs $3\frac{3}{4}$ miles twice a week.

Who runs the furthest during the week?

Explain your answer.

Jack runs $2\frac{2}{3} \times 3 = 8$ miles.

Dexter runs $3\frac{3}{4} \times 2 = 7\frac{1}{2}$ miles.

Jack runs further by half a mile.

Work out the missing numbers.

$$2\frac{5}{8} \times \square = 7\frac{7}{8}$$

Explain how you worked it out.

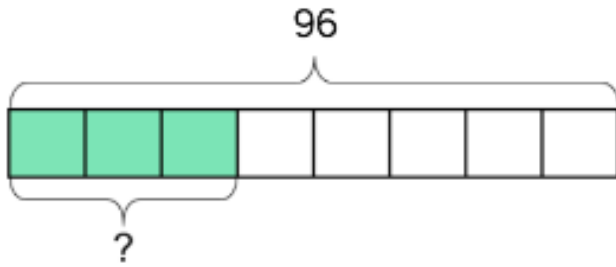
Possible answer:

$$2\frac{5}{8} \times 3 = 7\frac{7}{8}$$

I knew that the multiplier could not be 4 because that would give an answer of at least 8. So the multiplier had to be 3. That meant that the missing numerator had to give a product of 15. I knew that 5 multiplied by 3 would give 15

Fractions of an Amount (Wednesday)

Write a problem that matches the bar model.



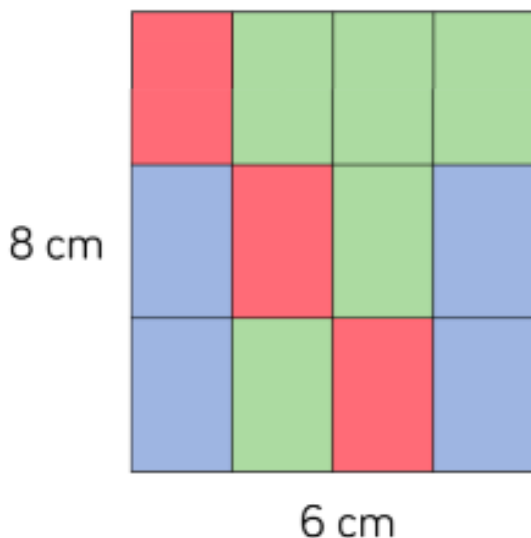
What other questions could you ask from this model?

$\frac{7}{16}$ of a class are boys.

There are 18 girls in the class.

How many children are in the class?

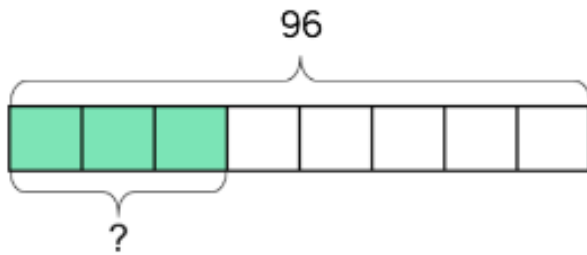
Find the area of each colour in the rectangle.



What would happen if one of the red or green rectangles was changed to a blue?

Fractions of an Amount ANSWERS (Wednesday)

Write a problem that matches the bar model.



What other questions could you ask from this model?

Possible response:

There are 96 cars in a car park.

$\frac{3}{8}$ of them are red.

How many cars are red?

How many were not red? etc.

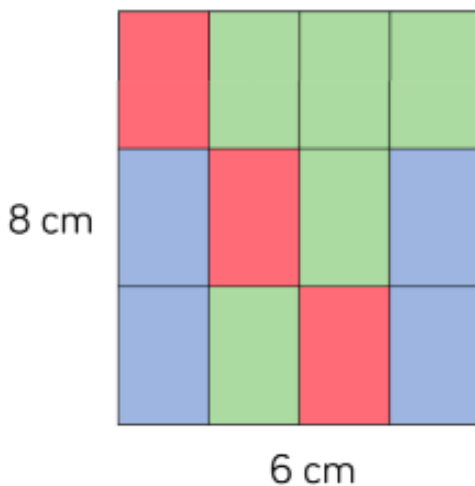
$\frac{7}{16}$ of a class are boys.

There are 18 girls in the class.

How many children are in the class?

There are 32 children in the class.

Find the area of each colour in the rectangle.



What would happen if one of the red or green rectangles was changed to a blue?

Area of rectangle:

$$6 \times 8 = 48 \text{ cm}^2$$

Blue

$$\frac{4}{12} \text{ of } 48 = 16 \text{ cm}^2$$

Red

$$\frac{3}{12} \text{ of } 48 = 12 \text{ cm}^2$$

Green

$$\frac{5}{12} \text{ of } 48 = 20 \text{ cm}^2$$

Children need to show that this would impact both the blue and the other colour.

Fractions as Operators (Thursday)

Which method would you use to complete these calculations: multiply the fractions or find the fraction of an amount?

Explain your choice for each one.
Compare your method to your partner.

$$25 \times \frac{3}{5} \text{ or } \frac{3}{5} \text{ of } 25$$

$$6 \times \frac{2}{3} \text{ or } \frac{2}{3} \text{ of } 6$$

$$5 \times \frac{3}{8} \text{ or } \frac{3}{8} \text{ of } 5$$

Dexter and Jack are thinking of a two-digit number between 20 and 30

Dexter finds two thirds of the number.

Jack multiplies the number by $\frac{2}{3}$

Their new two-digit number has a digit total that is one more than that of their original number.

What number did they start with?

Show each step of their calculation.

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$$5 \times \frac{3}{8} \text{ or } \frac{3}{8} \text{ of } 5$$

Possible response:

1. Children may find it easier to find 3 fifths of 25 rather than multiply 25 by 3
2. Children may choose either as they are of similar efficiency.
3. Children will probably find it more efficient to multiply than divide 5 by 8

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Their new two-digit number has a digit total that is one more than that of their original number.

What number did they start with?

Show each step of their calculation.

They started with 24

Dexter:

$$24 \div 3 = 8$$

$$8 \times 2 = 16$$

Jack:

$$24 \times 2 = 48$$

$$48 \div 3 = 16$$