

24.1 1.25

LI: To be able to multiply fractions by fractions.

Underline your date and LI

one digit per box

Our Learning Journey

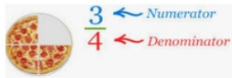
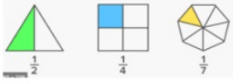

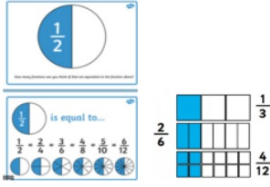


- Step 2 Multiply fractions by fractions
- Step 3 Divide a fraction by an integer
- Step 4 Divide any fraction by an integer
- Step 5 Mixed questions with fractions
- Step 6 Fraction of an amount
- Step 7 Fraction of an amount - find the whole

Key vocabulary

numerator, denominator, unit fraction, non-unit fraction, equivalent fractions, proper fractions, improper fractions, mixed numbers, simplify

Note: x numbers less than 1 makes a number smaller not bigger.

Key vocabulary

Key word	Definition	Picture/example
Numerator	The top part of a fraction. This is how many 'parts' of the whole you have. All of the parts MUST be the same size.	 <p>There are 4 parts in one whole pizza. We have 3 parts.</p>
Denominator	The bottom part of a fraction. This is how many 'parts' make one whole. All of the parts MUST be the same size.	
Unit fraction	A fraction where the numerator is 1 .	
Non-unit fraction	A fraction where the numerator is greater than 1 .	
Equivalent fractions	Fractions that are equal . They have different numerators and denominators but represent the same value. Using a fraction wall (see below) can be useful for finding equivalent fractions.	
Proper fractions	A fraction where the numerator is less than the denominator.	$\frac{2}{3}$ $\frac{3}{6}$ $\frac{5}{7}$ $\frac{16}{40}$
Improper fractions (im proper, not in proper)	A fraction where the numerator is more than the denominator. This means you will have more than one whole.	
Mixed numbers	A number made up of a whole number and a proper fraction.	

Simplify:
to find the equivalent fraction with the smallest denominator



Key questions

- How can you show the calculation as a diagram?
- What is the same and what is different about “half of” a number and “ $\frac{1}{2} \times$ ” a number?
- When you multiply two fractions, is the product greater than or smaller than each of the fractions? Why?
- Why are all of your answers less than 1?

Starter/Recap

Flashback 4

Year 6 | Week 8 | Day 1

1) $243 \times 23 = 5,589$ so $242 \times 23 =$

C

2) Ron scores 24,500 points playing a game. Whitney scores 650 points fewer than Ron. What is the total of their points?

3) Is 25 a common multiple of 10 and 15?

4) How many degrees are in two full turns?



Challenge:

1. $46,754 + 33,679$

2. Round 303,785 to the nearest 1,000.

3. The value of the underlined digits: 651,387

4. \times = 64

5. $\frac{\text{□}}{\text{□}} - \frac{3}{14} = \frac{4}{7}$

6. $6,425 \div 6$

7. $-4 + 9$

Starter/Recap

Flashback 4

Year 6 | Week 8 | Day 1

- 1) $243 \times 23 = 5,589$ so $242 \times 23 =$ 5,566 C
- 2) Ron scores 24,500 points playing a game.
Whitney scores 650 points fewer than Ron.
What is the total of their points? **48,350**
- 3) Is 25 a common multiple of 10 and 15? **No**
- 4) How many degrees are in two full turns? **720°**



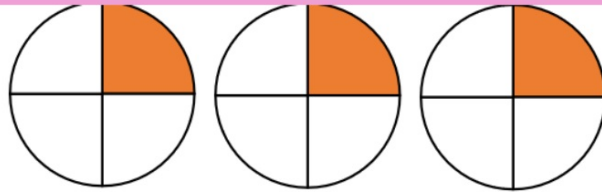
Challenge:

- $46,754 + 33,679 = 80,433$
 - Round 303,785 to the nearest 1,000. **304,000**
 - The value of the underlined digits: 651,387
600,000 1,000 7
 - $\boxed{8} \times \boxed{8} = 64^*$
 - $\frac{\boxed{11}}{\boxed{14}} - \frac{3}{14} = \frac{4}{7}$
 - $6,425 \div 6 = 1,070 \text{ r } 5$
 - $-4 + 9 = 5$
- *Various answers, one example given.*

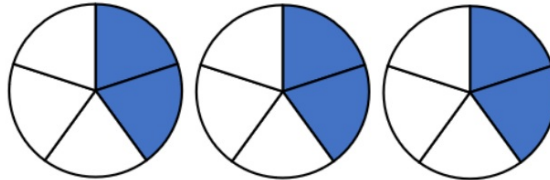
Assessment



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



2) $\frac{2}{5} \times 3$



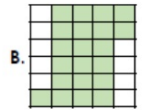
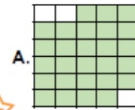
3) $\frac{4}{9} \times 6$

4) $2\frac{2}{3} \times 3$

Challenge:

10a. Which shaded representation correctly shows the answer to the calculation below?

$$\frac{9}{6} \times \frac{3}{5} =$$



11a. Work out the answer to the question below. Give the answer as a mixed number in its simplest form.

What is $\frac{11}{12}$ multiplied by $\frac{8}{4}$?

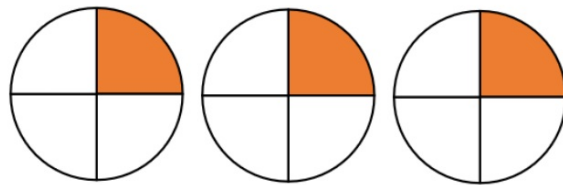


12a. Fill in the missing numbers so that the calculation below is correct.

$$\frac{8}{9} \times \frac{\square}{7} = \frac{72}{63}$$

Assessment

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



2) $\frac{2}{5} \times 3 = \frac{6}{5} = 1\frac{1}{5}$



3) $\frac{4}{9} \times 6 = \frac{24}{9} = 2\frac{6}{9} = 2\frac{2}{3}$

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



Challenge:

10a. Which shaded representation correctly shows the answer to the calculation below?

$$\frac{9}{6} \times \frac{3}{5} =$$



10a. A

11a. $1\frac{5}{6}$

12a. $\frac{8}{9} \times 1\frac{2}{7}$

11a. Work out the answer to the question below. Give the answer as a mixed number in its simplest form.

What is $\frac{11}{12}$ multiplied by $\frac{8}{4}$?

12a. Fill in the missing numbers so that the calculation below is correct.

$$\frac{8}{9} \times \frac{\square}{7} = \frac{72}{63}$$

I do



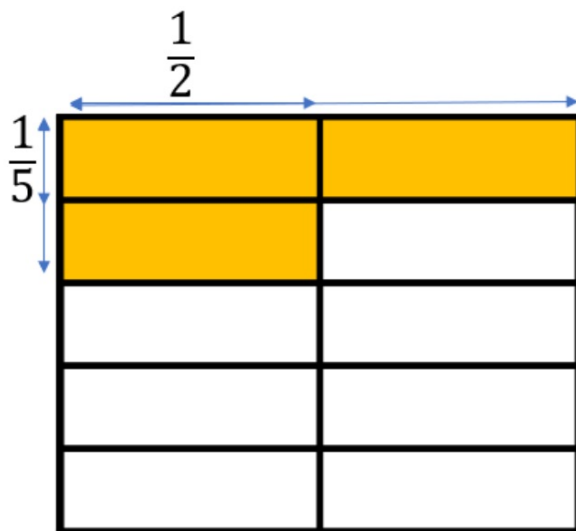
Sally eats $\frac{1}{2}$ of the chocolate bar.

She then eats $\frac{1}{2}$ of what is left.

As a fraction, how much of the chocolate bar is left?

We do

$$\frac{\square}{2} \times \frac{\square}{5} = \frac{2}{10} = \frac{1}{5}$$



What do you notice?

$$\begin{array}{ccc} & \times & \\ \begin{array}{c} 2 \\ 7 \end{array} & \times & \begin{array}{c} 4 \\ 5 \end{array} \\ & \times & \end{array} = \frac{8}{35}$$

$$\begin{array}{ccc} & \times & \\ \begin{array}{c} 3 \\ 8 \end{array} & \times & \begin{array}{c} 2 \\ 5 \end{array} \\ & \times & \end{array} = \frac{6}{40} = \frac{3}{20}$$

When multiplying a pair of fractions, I need to multiply the numerators and the denominators.

Task 1:

You do

- Alex is using a piece of paper to work out $\frac{1}{2} \times \frac{1}{3}$
First, she folds the piece of paper in half.
Then she folds the half into thirds.
Alex shades the fraction that she has created.



I have shaded $\frac{1}{6}$,
so $\frac{1}{2} \times \frac{1}{3} = \frac{1}{6}$

Use Alex's method to work out the multiplications.

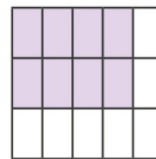
$$\frac{1}{4} \times \frac{1}{2}$$

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

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

Task 2:

- Dani is using a diagram to work out $\frac{2}{3} \times \frac{4}{5}$



Explain why the diagram shows $\frac{2}{3} \times \frac{4}{5} = \frac{8}{15}$

Use similar diagrams to work out $\frac{2}{3} \times \frac{2}{5}$ and $\frac{2}{3} \times \frac{3}{5}$

- Dexter has spotted a connection between the numerators and the denominators in the question and the answer.

$$\frac{3}{4} \times \frac{1}{5} = \frac{3}{20} \quad \frac{4}{5} \times \frac{3}{7} = \frac{12}{35} \quad \frac{4}{5} \times \frac{2}{3} = \frac{8}{15}$$

What connection has Dexter spotted?

Use the connection to work out the multiplications.

$$\frac{2}{5} \times \frac{1}{3}$$

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

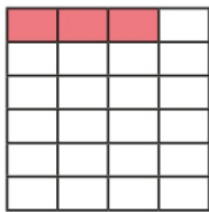
$$\frac{2}{7} \times \frac{4}{5}$$

Task 3: Reasoning

Challenge:

Reasoning and problem solving

Aisha uses this diagram to work out the product of two fractions.



What fractions has Aisha multiplied?

What is the answer?

Work out the missing numbers.

$$\frac{1}{2} \times \frac{1}{\square} = \frac{1}{16}$$

$$\frac{\square}{6} \times \frac{3}{5} = \frac{21}{30}$$

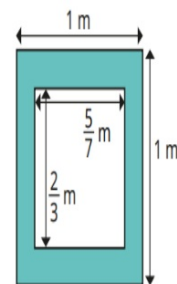
$$\frac{3}{\square} \times \frac{4}{5} = \frac{3}{5}$$

Find the missing numbers.

$$\frac{3}{\square} \times \frac{\square}{\square} = \frac{6}{12}$$
$$= \frac{\square}{2}$$

Is there more than one answer?

What is the area of the shaded region?



Plenary:

7

In a race, Ali completes a swim, a run and a bicycle ride.

The swim is $\frac{1}{10}$ of the total distance.

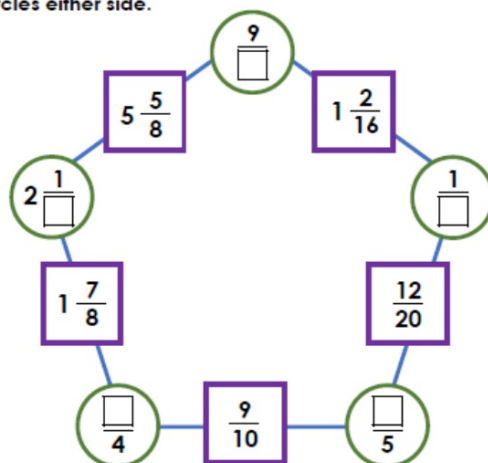
The run is $\frac{3}{10}$ of the total distance.

What fraction of the total distance is the **bicycle ride**?

1 mark

Reflection

1. In the arithmagon below, the fractions and mixed numbers in the squares are products of the circles either side.



Complete the arithmagon.

How would you go about solving this question?
What steps would you use?



25 1 1.25

LI: To be able to divide a fraction by an integer.

one digit per box

Underline your date and LI

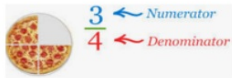
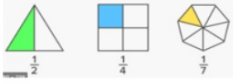

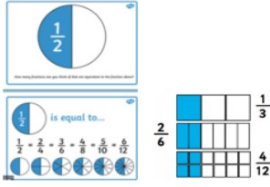


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Simplify:
to find the equivalent fraction with the smallest denominator



Key questions

- How could you represent the fraction?
- How could you split the fraction into _____ equal parts?
- What do you notice about the numerators in the question and the answer?
- What do you notice about the denominators in the question and the answer?
- What changes and what stays the same?
- How can you show the division as a bar model?

Starter/Recap

Flashback 4

Year 6 | Week 8 | Day 2

XII

- 1) Simplify $\frac{4}{12}$
- 2) Calculate $45 \times (100 - 23)$
- 3) $84 \div 2 + 84 \div 2 =$
- 4) Is a 45° angle acute or obtuse?

Challenge:

1. Compare using $<$ or $>$.
 $35,607$ $35,707$
2. $724,591 - 513,160$
3. 5×5
4. Round 234,567 to the nearest 1,000.
5. Is 11 a prime number?
6. $\frac{3}{8} \times 2$

Starter/Recap

Challenge:

Flashback 4

Year 6 | Week 8 | Day 2

XII

- 1) Simplify $\frac{4}{12} \frac{1}{3}$
- 2) Calculate $45 \times (100 - 23)$ **3,465**
- 3) $84 \div 2 + 84 \div 2 =$
- 4) Is a 45° angle acute or obtuse? **acute**

1. Compare using < or >.
 $35,607$ $35,707$
2. $724,591 - 513,160 =$ **211,431**
3. $5 \times 5 =$ **25**
4. Round 234,567 to the nearest 1,000. **235,000**
5. Is 11 a prime number? **Yes**
6. $\frac{3}{8} \times 2 = \frac{6}{8} = \frac{3}{4}$

Assessment

Write the number sentence for each story.

- 1) 24 apples are shared between 6 children. How many apples does each child get?
- 2) 18 pencils are shared between 3 children. How many pencils does each child get?
- 3) 5 children earn £35 altogether washing cars. How much money does each child get?



Challenge:

9a. Match the calculation to the correct answer represented in the diagram.

A. $2\frac{6}{9} \div 4$ i 

B. $2\frac{4}{5} \div 2$ ii 

C. $2\frac{8}{12} \div 8$ iii 



10a. True or false?

$$2\frac{6}{9} \div 3 = \frac{7}{9}$$



11a. Calculate the following.

A. $\frac{21}{9} \div 7 =$

B. $\frac{24}{4} \div 3 =$



Assessment

Write the number sentence for each story.

- 1) 24 apples are shared between 6 children. How many apples does each child get?

$$24 \div 6 = 4$$

- 2) 18 pencils are shared between 3 children. How many pencils does each child get?

$$18 \div 3 = 6$$

- 3) 5 children earn £35 altogether washing cars. How much money does each child get?

$$£35 \div 5 = £7$$



Challenge:

9a. Match the calculation to the correct answer represented in the diagram.

A. $2\frac{6}{9} \div 4$ i

B. $2\frac{4}{5} \div 2$ ii

C. $2\frac{8}{12} \div 8$ iii



10a. True or false?

$$2\frac{6}{9} \div 3 = \frac{7}{9}$$



11a. Calculate the following.

A. $\frac{21}{9} \div 7 =$

9a. A - iii; B - i; C - ii

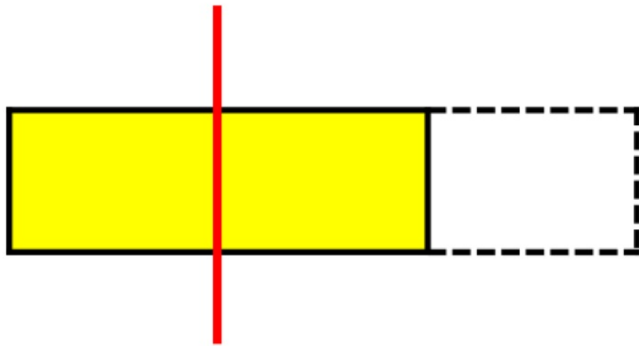
B. $\frac{24}{4} \div 3 =$

10a. False. The answer is $\frac{8}{9}$

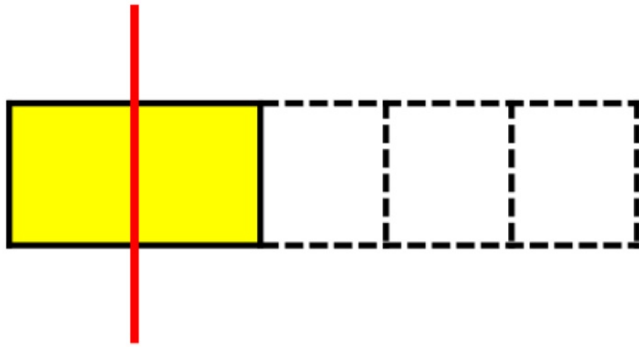
11a. A - $\frac{3}{9}$ or $\frac{1}{3}$; B - $\frac{8}{4}$ or 2



I do:

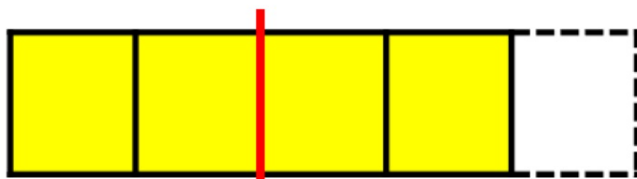


$$\frac{2}{3} \div 2 = \boxed{}$$




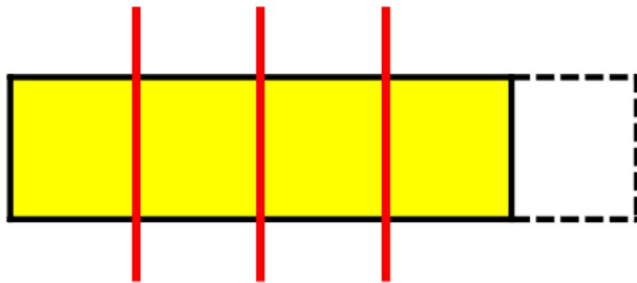
$$\frac{2}{5} \div 2 = \boxed{}$$

We do:



$$\frac{4}{5} \div 2 = \boxed{}$$

Have a think 



$$\frac{4}{5} \div 4 = \boxed{}$$

Task 1

You do

- Filip has $\frac{2}{5}$ of a chocolate bar. He shares it with his friend.

What fraction of the chocolate bar do they each get?



- Use the diagrams to help you work out the divisions.



$$\frac{3}{4} \div 3 = \underline{\quad}$$



$$\frac{4}{7} \div 4 = \underline{\quad}$$



$$\frac{4}{7} \div 2 = \underline{\quad}$$

- Use the division fact $12 \div 4 = 3$ to work out the divisions.

▶ $12,000 \div 4$ ▶ $12 \text{ m} \div 4$ ▶ $12\text{p} \div 4$ ▶ $\frac{12}{19} \div 4$

- Complete the divisions.

▶ $\frac{6}{11} \div 3$ ▶ $\frac{15}{17} \div 5$ ▶ $\frac{49}{50} \div 7$ ▶ $\frac{96}{101} \div 12$

Task 2

- A cake has a mass of $\frac{8}{9}$ kg.
 - ▶ What is the mass of each piece if the cake is cut into 8 equal pieces?
 - ▶ What is the mass of each piece if the cake is cut into 4 equal pieces?
 - ▶ What is the mass of each piece if the cake is cut into 2 equal pieces?

- Find the missing integers.

$$\frac{15}{16} \div \underline{\quad} = \frac{5}{16}$$

$$\frac{20}{23} \div \underline{\quad} = \frac{4}{23}$$

$$\frac{15}{16} \div \underline{\quad} = \frac{3}{16}$$

$$\frac{20}{23} \div \underline{\quad} = \frac{5}{23}$$

- Mo works out $1\frac{3}{5} \div 2$ using improper fractions.

$$1\frac{3}{5} \div 2 = \frac{8}{5} \div 2 = \frac{4}{5}$$

Use Mo's method to work out the divisions.

▶ $1\frac{1}{3} \div 2$ ▶ $1\frac{7}{9} \div 4$ ▶ $2\frac{5}{8} \div 3$ ▶ $3\frac{3}{4} \div 5$

Task 3:

Challenge:

Reasoning and problem solving

Dividing by 2 is the same as finding half of a number, so $\frac{4}{11} \div 2$ is the same as $\frac{1}{2} \times \frac{4}{11}$



Do you agree with Tiny?
Explain your answer.

Amir and Alex each have a piece of ribbon that is $\frac{99}{100}$ m long.

- Amir cuts his ribbon into 9 equal pieces.
- Alex cuts her ribbon into 3 equal pieces.

Whose pieces of ribbon are longer?

By how much?

Give your answer in centimetres.

Compare methods with a partner.

What could the missing numbers be?

$$\frac{\square}{21} \div 4 = \frac{\square}{21}$$

Can any of your answers be simplified?

Reflection

2. Explore the different ways to complete the comparison statements below.

$$2 \frac{6}{12} \div \boxed{} = \frac{\boxed{}}{\boxed{}} \div 2$$

$$3 \frac{3}{7} \div \boxed{} > \frac{\boxed{}}{\boxed{}} \div 8$$

How would you go about solving this question?
What steps would you use?



26.1 1.25

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by an integer.

Underline your
date and LI

one digit
per box

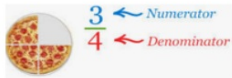


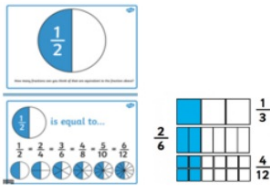


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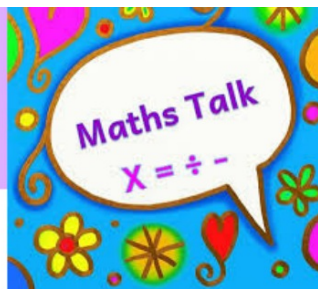
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Mixed numbers	A number made up of a whole number and a proper fraction.	

Simplify:
to find the equivalent fraction with the smallest denominator



Key questions

- How can you split a fraction into equal parts?
What is each part of the fraction worth?
- How can you show the division as a bar model?
- How is $\frac{1}{3} \div 2$ similar to $\frac{1}{3} \times \frac{1}{2}$?
- What fractions are equivalent to _____?
- Why does finding an equivalent fraction help you to divide a fraction by an integer?
- What multiplication can you use to work out
_____ \div _____?

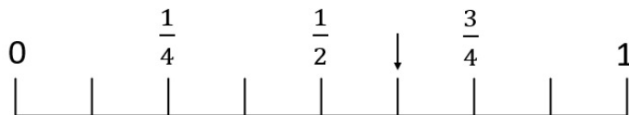
Starter/Recap

Flashback 4

Year 6 | Week 8 | Day 3

XXVII

- 1) What fraction is the arrow pointing to?



- 2) Mentally solve 98×5
- 3) Calculate 37×18
- 4) Are these lines parallel or perpendicular?



Challenge:

- Compare using $<$ or $>$.
 $673,408$ $672,408$
- $639,721 - 425,813 =$
- $7 \times$ $= 42$
- Round 146,798 to the nearest 10,000.
- What is the sum of the first 4 prime numbers?
- $\frac{4}{9} \times 6$

Starter/Recap

Flashback 4

Year 6 | Week 8 | Day 3

XXVII

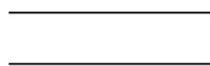
- 1) What fraction is the arrow pointing to?



- 2) Mentally solve 98×5 **490**

- 3) Calculate 37×18 **666**

- 4) Are these lines parallel or perpendicular?



parallel



Challenge:

1. Compare using < or >.
 $673,408$ $672,408$
2. $639,721 - 425,813 = 213,908$
3. $7 \times$ $= 42$
4. Round 146,798 to the nearest 10,000. **150,000**
5. What is the sum of the first 4 prime numbers? **17**
6. $\frac{4}{9} \times 6 = \frac{24}{9} = \frac{8}{3} = 2\frac{2}{3}$

Assessment

$$1) \frac{6}{7} \div 2 =$$

$$2) \frac{12}{13} \div 4 =$$

$$3) \frac{20}{27} \div 5 =$$

$$4) \frac{6}{15} \div 6 =$$



Challenge:

9a. Complete the following calculation.

$$2\frac{4}{5} \div 3$$



10a. Match the calculation to the answer.

A. $4\frac{1}{7} \div 6 = \frac{\square}{\square}$ B. $3\frac{3}{10} \div 5 = \frac{\square}{\square}$

$$\frac{33}{50}$$

$$\frac{29}{42}$$



11a. True or false?

$$3\frac{2}{5} \div 4 = \frac{17}{5}$$

Assessment

$$1) \frac{6}{7} \div 2 = \frac{3}{7}$$

$$2) \frac{12}{13} \div 4 = \frac{3}{13}$$

$$3) \frac{20}{27} \div 5 = \frac{4}{27}$$

$$4) \frac{6}{15} \div 6 = \frac{1}{15}$$



Challenge:

9a. Complete the following calculation.

$$2\frac{4}{5} \div 3$$

9a. $\frac{14}{15}$

10a. A: $\frac{29}{42}$; B: $\frac{33}{50}$

11a. False, it equals



10a. Match the calculation to the answer.

A. $4\frac{1}{7} \div 6 = \frac{\square}{\square}$ B. $3\frac{3}{10} \div 5 = \frac{\square}{\square}$

$\frac{33}{50}$

$\frac{29}{42}$



11a. True or false?

$$3\frac{2}{5} \div 4 = \frac{17}{5}$$

I do:

$$\frac{1}{4} \div 2$$



We do:



$$\frac{1}{4} \div 3 = \boxed{}$$



$$\frac{1}{4} \div 4 = \boxed{}$$

Task 1:

- Teddy divides one third into 2 equal parts.



Each part is worth $\frac{1}{6}$
so $\frac{1}{3} \div 2 = \frac{1}{6}$



Draw diagrams to work out the divisions.

$$\frac{1}{3} \div 3$$

$$\frac{2}{3} \div 3$$

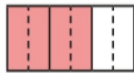
$$\frac{1}{5} \div 3$$

$$\frac{2}{5} \div 3$$

- Annie is dividing $\frac{2}{3}$ by 4



I will find an equivalent fraction to help me divide the numerator equally.



$$\frac{2}{3} = \frac{4}{6}$$

$$\frac{4}{6} \div 4 = \frac{1}{6}$$

Use equivalent fractions to work out the divisions.

$$\frac{3}{5} \div 2$$

$$\frac{1}{3} \div 3$$

$$\frac{2}{3} \div 3$$

$$\frac{4}{5} \div 8$$

Task 2:

- Jack is dividing fractions by integers.

$$\frac{2}{5} \div 3 = \frac{2}{15}$$

$$\frac{3}{4} \div 5 = \frac{3}{20}$$

$$\frac{5}{7} \div 6 = \frac{5}{42}$$

I've noticed something!



What has Jack noticed?

- Work out the divisions.

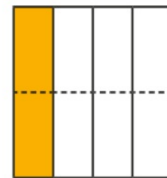
$$\frac{1}{8} \div 3$$

$$\frac{5}{9} \div 2$$

$$\frac{2}{7} \div 3$$

$$\frac{11}{12} \div 15$$

- Use the diagram to explain why $\frac{1}{4} \div 2 = \frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$



- Work out the missing numbers.

$$\frac{1}{3} \div 2 = \frac{3}{4} \times \frac{\square}{\square} = \frac{\square}{\square}$$

$$\frac{3}{5} \div 2 = \frac{3}{5} \times \frac{\square}{\square} = \frac{\square}{\square}$$

Task 3:

Challenge:

Reasoning and problem solving

The children are working out $\frac{6}{7} \div 2$



$$6 \div 2 = 3, \text{ so } \frac{6}{7} \div 2 = \frac{3}{7}$$

Ron



$$\frac{1}{7} \div 2 = \frac{1}{14}, \text{ so } \frac{6}{7} \div 2 = \frac{6}{14}$$

Dora



$$\frac{6}{7} \div 2 = \frac{6}{7} \times \frac{1}{2} = \frac{6}{14}$$

Whitney

Explain why each child is correct.

Discuss each of their methods.

Is the statement true or false?

$$\frac{3}{5} \div 4 = \frac{3}{4} \div 5$$

Explain your answer.

Find the missing fractions and integers.

$$\underline{\hspace{2cm}} \div 4 = \frac{7}{36}$$

$$\frac{3}{20} \div \underline{\hspace{2cm}} = \frac{3}{80}$$

$$\underline{\hspace{2cm}} \div \underline{\hspace{2cm}} = \frac{2}{5}$$

Is there more than one possible answer for each calculation?

Plenary:

4

Draw **four** lines to match each fraction to its equivalent decimal.

$$\frac{1}{2}$$

$$\frac{3}{10}$$

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

$$\frac{3}{100}$$

0.3

0.5

0.8





0.03


0.25


0.75


Reflection


2. Four children are sharing the leftover food from a birthday party.

			
$2\frac{3}{8}$	$\frac{2}{4}$	$4\frac{5}{9}$	$1\frac{2}{5}$

 I would like a share of the pizza, cake and garlic bread.

 I would like a share of the pizza and cake.

 Please can I have a share of pizza, pie and garlic bread?

 Please can I have a share of everything?

What fraction of each food will each child take home?

How would you go about solving this question?
What steps would you use?



2 7.1 1.25

LI: Mixed questions with fractions.

Underline your date and LI

one digit per box

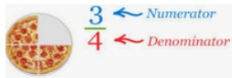
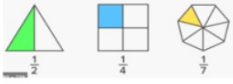

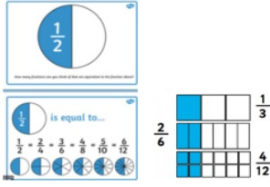


Our Learning Journey

- Step 1 Multiply fractions by integers
- Step 2 Multiply fractions by fractions
- Step 3 Divide a fraction by an integer
- Step 4 Divide any fraction by an integer
- Step 5 **Mixed questions with fractions**
- Step 6 Fraction of an amount
- Step 7 Fraction of an amount - find the whole

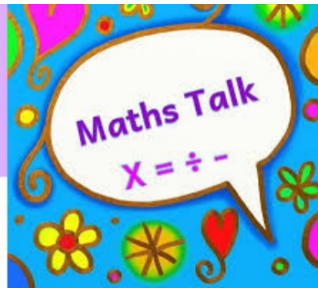
Key vocabulary

numerator, denominator, unit fraction, non-unit fraction, equivalent fractions, proper fractions, improper fractions, mixed numbers, simplify

Key vocabulary

Key word	Definition	Picture/example
Numerator	The top part of a fraction. This is how many 'parts' of the whole you have. All of the parts MUST be the same size.	 <p>There are 4 parts in one whole pizza. We have 3 parts.</p>
Denominator	The bottom part of a fraction. This is how many 'parts' make one whole. All of the parts MUST be the same size.	
Unit fraction	A fraction where the numerator is 1 .	
Non-unit fraction	A fraction where the numerator is greater than 1 .	
Equivalent fractions	Fractions that are equal . They have different numerators and denominators but represent the same value. Using a fraction wall (see below) can be useful for finding equivalent fractions.	
Proper fractions	A fraction where the numerator is less than the denominator.	$\frac{2}{3}$ $\frac{3}{6}$ $\frac{5}{7}$ $\frac{16}{40}$
Improper fractions (im proper, not in proper)	A fraction where the numerator is more than the denominator. This means you will have more than one whole.	
Mixed numbers	A number made up of a whole number and a proper fraction.	

Simplify:
to find the equivalent fraction with the smallest denominator



Key questions

- Do you need to find the whole or a part? Where can you show this on the bar model?
- What type of calculation do you need to do? How can you tell?
- Does it matter in which order you perform the calculations? Why/why not?
- Which operation should you perform first/second?
- What happens when you insert brackets into the calculation?

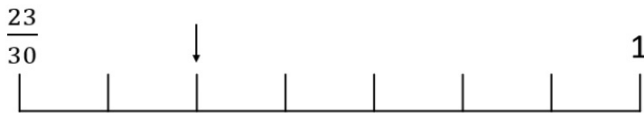
Starter/Recap

Flashback 4

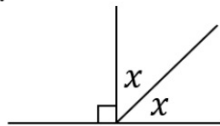
Year 6 | Week 8 | Day 4

CDXXVI

- 1) Position $\frac{5}{6}$ on this number line.



- 2) Estimate the answer to $501 \div 24.9$
- 3) 5,250 pears are packed into boxes of 8
How many pears will be left over?
- 4) What is the value of angle x ?



Challenge:

1. Compare using $<$ or $>$.
 45.09 45.082
2. $500,439 - 251,326$
3. = 8×12
4. Round 746,708 to the nearest 100,000.
5. What are the factors of a prime number?
6. $\frac{4}{12} \times 7$

Starter/Recap

Flashback 4

Year 6 | Week 8 | Day 4

CDXXVI

- 1) Position $\frac{5}{6}$ on this number line.

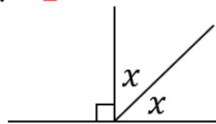


- 2) Estimate the answer to $501 \div 24.9$ $500 \div 25 = 20$

- 3) 5,250 pears are packed into boxes of 8
How many pears will be left over? 2

- 4) What is the value of angle x ?

45°



Challenge:

- Compare using $<$ or $>$.
 45.09 $>$ 45.082
- $500,439 - 251,326 = 249,113$
- $96 = 8 \times 12$
- Round 746,708 to the nearest 100,000. $700,000$
- What are the factors of a prime number? 1 and itself.
- $\frac{4}{12} \times 7 = \frac{28}{12} = \frac{7}{3} = 2\frac{1}{3}$

Assessment

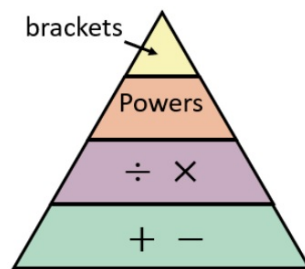
1) $\frac{2}{5} \times \frac{1}{3} =$

2) $\frac{2}{5} \div 3 =$

--	--	--	--	--

3) $(\frac{1}{3} + \frac{1}{3}) \times 2 =$

4) $\frac{1}{3} + \frac{1}{3} \times 2$



White Rose
MATHS



Challenge:

9b. Complete the calculation below.

$$(7\frac{1}{3} + \frac{4}{7}) \div 3 = \frac{\boxed{40}}{\boxed{\quad}}$$



10b. True or false?

$$\left(\frac{5}{4} - \frac{5}{6}\right) \div 5 = \frac{1}{12}$$



11b. Circle the correct answer to the calculation below.

$$\left(\frac{6}{11} + \frac{2}{3}\right) \times 2 = \frac{\boxed{\quad}}{\boxed{\quad}}$$

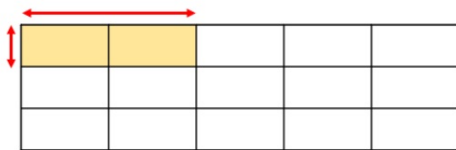
A. $\frac{80}{33}$

B. $\frac{8}{33}$

C. $\frac{8}{3}$

Assessment

1) $\frac{2}{5} \times \frac{1}{3} = \frac{2}{15}$

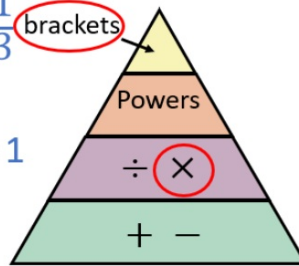


2) $\frac{2}{5} \div 3 = \frac{2}{15}$



3) $(\frac{1}{3} + \frac{1}{3}) \times 2 = \frac{2}{3} \times 2 = \frac{4}{3} = 1 \frac{1}{3}$ (brackets)

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



Challenge:

9b. Complete the calculation below.

$$(7\frac{1}{3} + \frac{4}{7}) \div 3 = \frac{\boxed{40}}{\boxed{}}$$

9b. $(7\frac{1}{3} + \frac{4}{7}) \div 3 = \boxed{2}$



10b. True or false?

10b. **True**

11b. **A**

$$(\frac{5}{4} - \frac{5}{6}) \div 5 = \frac{1}{12}$$



11b. Circle the correct answer to the calculation below.

$$(\frac{6}{11} + \frac{2}{3}) \times 2 = \frac{\boxed{}}{\boxed{}}$$

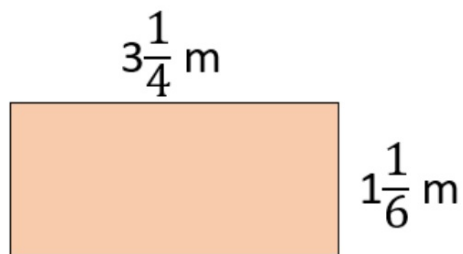
A. $\frac{80}{33}$

B. $\frac{8}{33}$

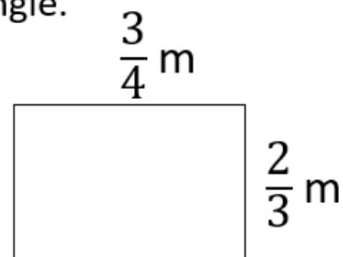
C. $\frac{8}{3}$

I do/we do

Work out the perimeter of the rectangle.



Work out the area of the rectangle.



$\frac{3}{5}$ of a litre of orange juice is shared equally between 4 people. How much orange juice does each person get?

Have a think



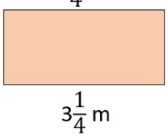
Work out the missing number.

$2\frac{2}{3}$	
$\frac{7}{9}$?

I do/we do

Work out the perimeter of the rectangle.

Did anyone use a different method?



$$6\frac{2}{4} + 2\frac{2}{6} = 8\frac{10}{12} \text{ m}$$

$$= 8\frac{5}{6} \text{ m}$$

$$6 + 2 = 8$$

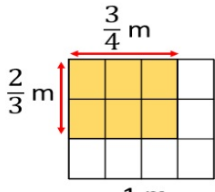
$$\times 3 \left(\begin{array}{c} \frac{2}{4} + \frac{2}{6} \\ \frac{6}{12} + \frac{4}{12} \end{array} \right) \times 2$$

$$3\frac{1}{4} \text{ m} + 3\frac{1}{4} \text{ m} = 6\frac{2}{4} \text{ m}$$

$$1\frac{1}{6} \text{ m} + 1\frac{1}{6} \text{ m} = 2\frac{2}{6} \text{ m}$$

Work out the area of the rectangle.

$$\frac{6}{12} \text{ m}^2 \quad \frac{1}{2} \text{ m}^2$$



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

$\frac{3}{5}$ of a litre of orange juice is shared equally between 4 people. How much orange juice does each person get?

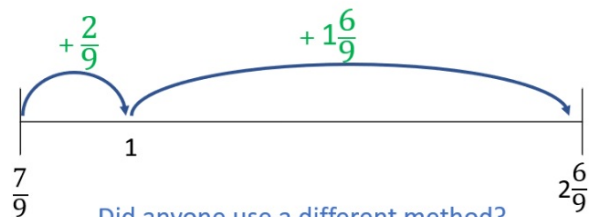
$$\frac{3}{5} \div 4$$



$$\frac{3}{20} \text{ litre}$$

Work out the missing number.

$\frac{6}{9}$	
$\frac{7}{9}$	$\frac{8}{9}$

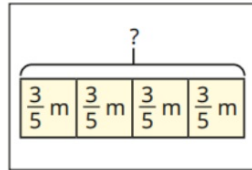


Did anyone use a different method?

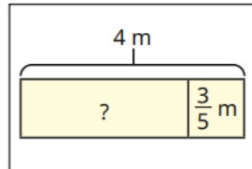
Task 1

- Match the bar models to the correct problems.

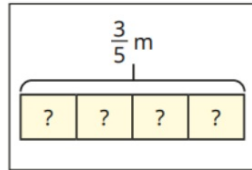
A piece of ribbon is 4 m long. Tom cuts $\frac{3}{5}$ off. How much ribbon is left?



Nijah has 4 pieces of ribbon. Each piece is $\frac{3}{5}$ m long. How much ribbon does Nijah have altogether?

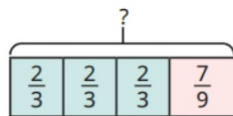


A piece of ribbon is $\frac{3}{5}$ m long. Brett cuts it into 4 equal parts. How long is each part?



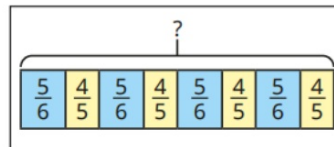
Work out the answer to each problem.

- Find the total length of the bar. Is there more than one way to find the answer?

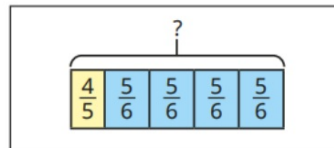


Task 2

- Find the difference between $\frac{3}{4} \times 3$ and $\frac{3}{4} + 3$
- Match the bar models to the calculations.



$$\left(\frac{4}{5} + \frac{5}{6}\right) \times 4$$



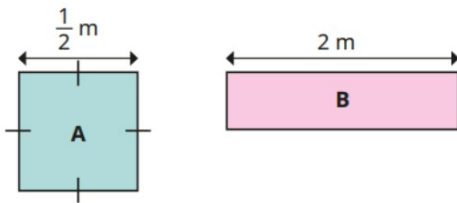
$$\frac{4}{5} + \left(\frac{5}{6} \times 4\right)$$

- Work out the calculations.
 - $3\frac{1}{3} + \frac{3}{4} \times 2$
 - $3\frac{1}{3} + \frac{3}{4} \div 2$
 - $3\frac{1}{3} + \frac{3}{4} \div 2$
- Scott has one-quarter of a bag of sweets. Kim has two-thirds of a bag of sweets. They combine their sweets and share them between themselves and Esther. What fraction of a bag of sweets does each child get?

Task 3

Reasoning and problem solving

Square A and rectangle B have the same area.
Find the difference between their perimeters.



Add two sets of brackets to make the calculation correct.

$$\frac{1}{2} + \frac{1}{4} \times 8 + \frac{1}{6} \div 2 + 1 = 6 \frac{1}{18}$$

Challenge

2 3 4 5

Using each digit once only, find as many solutions to the calculation that are between 1 and 2 as you can.

$$\frac{\boxed{1}}{\boxed{}} + \boxed{} \times \frac{\boxed{}}{\boxed{}}$$

Compare answers with a partner.

Plenary

13

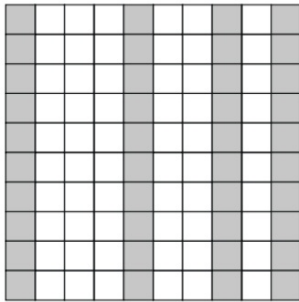
Write the missing fraction to make this **addition** correct.

$$\frac{2}{3} + \boxed{\phantom{\frac{2}{3}}} = \frac{5}{6}$$

1 mark

16

Part of this 10 × 10 grid is shaded.



Tick the fractions that represent the shaded part of the grid.

$\frac{1}{4}$

$\frac{2}{5}$

$\frac{4}{10}$

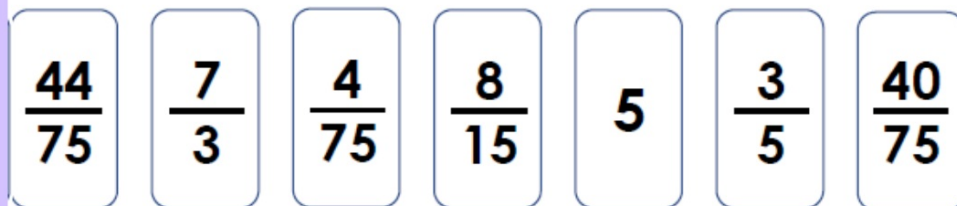
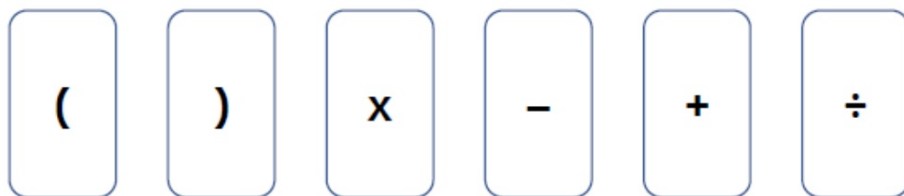
$\frac{6}{10}$

$\frac{40}{100}$

2 marks

Reflection

1. Using all of the cards below, create one written calculation.



How would you go about solving this question?
What steps would you use?



