# White Rose Answers (Year 6)

Monday

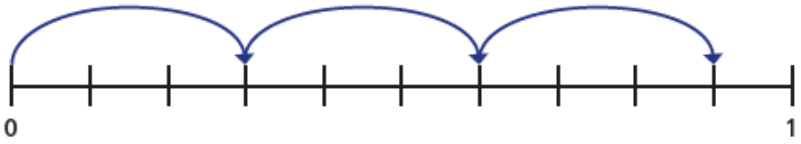
# Multiply fractions by integers

**1** Complete the calculations.

a)

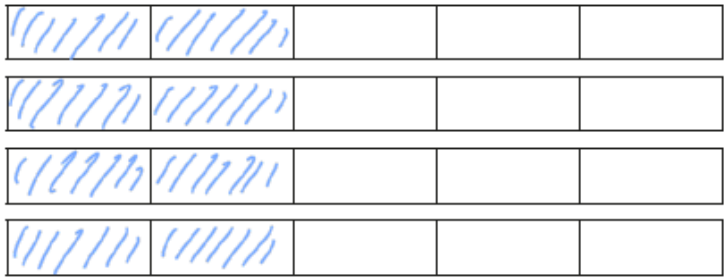
$\frac{2}{7} \times 2 = \frac{4}{7}$

b)




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

**2** a) Shade the bar models to show $\frac{2}{5} \times 4$



b) Complete the multiplication.

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

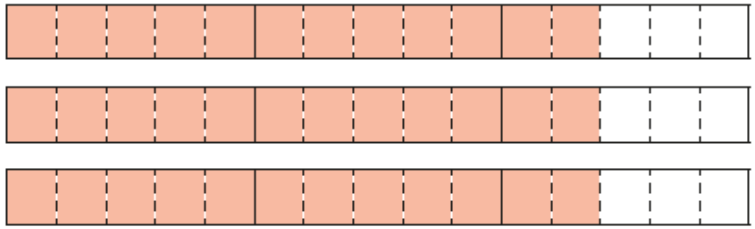
**3** Complete the calculations.

| a) | | b) | |
|---|---|---|---|
| $\frac{1}{3} \times 1 =$ | $\frac{1}{3}$ | $\frac{3}{4} \times 1 =$ | $\frac{3}{4}$ |
| $\frac{1}{3} \times 2 =$ | $\frac{2}{3}$ | $\frac{3}{4} \times 2 =$ | $1\frac{1}{2}$ |
| $\frac{1}{3} \times 3 =$ | $1$ | $\frac{3}{4} \times 3 =$ | $2\frac{1}{4}$ |
| $\frac{1}{3} \times 4 =$ | $1\frac{1}{3}$ | $\frac{3}{4} \times 4 =$ | $3$ |
| $\frac{1}{3} \times 5 =$ | $1\frac{2}{3}$ | $\frac{3}{4} \times 5 =$ | $3\frac{3}{4}$ |
| $\frac{1}{3} \times 6 =$ | $2$ | $\frac{3}{4} \times 6 =$ | $4\frac{1}{2}$ |

What patterns do you notice?

**4** Complete the multiplication.

$2\frac{2}{5} \times 3 = 7\frac{1}{5}$



What method did you use? Is there a different method you could have used?

**5** Match the calculations.

| | |
|---|---|
| $\frac{2}{3} + \frac{2}{3}$ | $\frac{1}{2} \times 6$ |
| $\frac{1}{4} \times 24$ | $18 \times \frac{1}{4}$ |
| $\frac{3}{4} + \frac{3}{4} + \frac{3}{4} + \frac{3}{4}$ | $\frac{1}{6} \times 10$ |
| $\frac{5}{12} \times 4$ | $12 \times \frac{1}{2}$ |
| $1\frac{1}{2} \times 3$ | $\frac{1}{3} \times 4$ |

**6** Write each answer as a mixed number in its simplest form.

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

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

c) $2\frac{2}{5} \times 4 =$ $9\frac{3}{5}$

d) $2\frac{2}{5} \times 5 =$ $12$

e) $7 \times 3\frac{1}{2} =$ $24\frac{1}{2}$

f) $\frac{11}{15} \times 7 =$ $5\frac{2}{15}$

**7** Fill in the missing numbers.

a) $2\frac{\boxed{2}}{7} \times 3 = 6\frac{6}{7}$

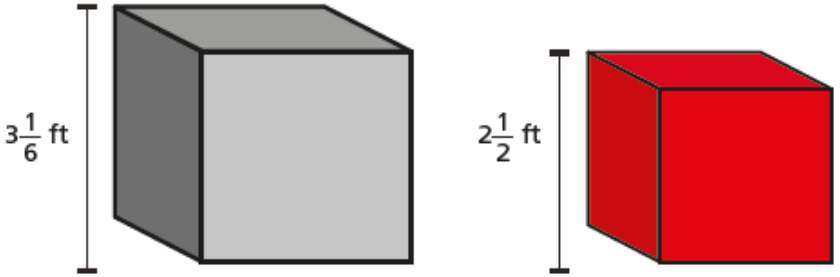
b) $2\frac{\boxed{4}}{8} \times 3 = 7\frac{1}{2}$

**8** Tommy's dog eats $3\frac{1}{2}$ tins of food a week.

How many tins does she eat in a year?

182

**9**




Jack builds a tower using grey blocks.

Alex builds a tower using red blocks.

The towers are exactly the same height.

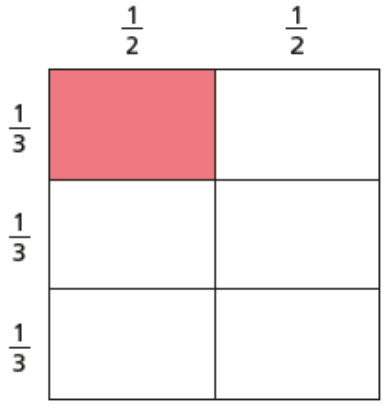
How many blocks could they each have used?

Jack could use 15 and Alex use 19

# Tuesday

# Multiply fractions by fractions

**1** Dexter works out $\frac{1}{2} \times \frac{1}{3}$ using a grid method.



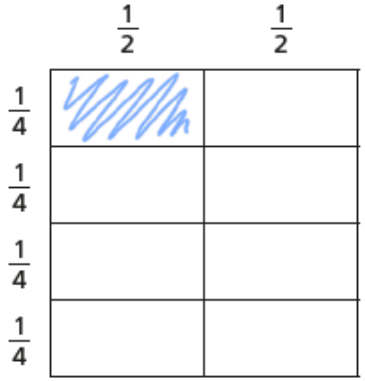

Explain how this shows $\frac{1}{2} \times \frac{1}{3} = \frac{1}{6}$

Split into halves vertically and thirds horizontally. $\frac{1}{6}$ of the whole shape is shaded.

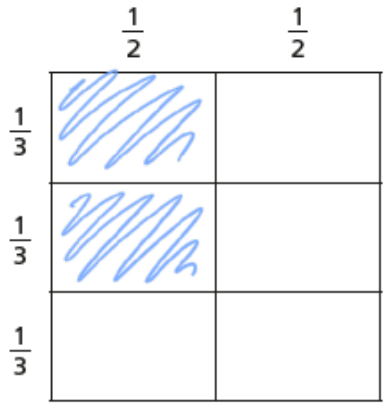
**2** Shade the diagrams to show the fraction multiplications.

Complete the multiplications.

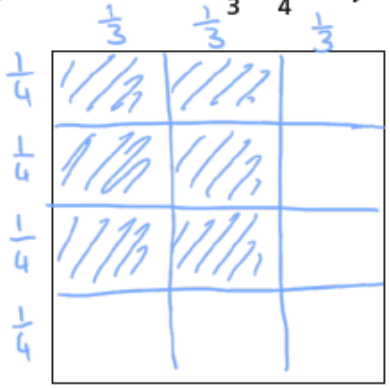
a) $\frac{1}{2} \times \frac{1}{4} =$ $\boxed{\frac{1}{8}}$




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




**3** a) Divide the square to show that $\frac{2}{3} \times \frac{3}{4}$ is equal to $\frac{6}{12}$




b) Mo says $\frac{2}{3} \times \frac{3}{4}$ is equal to $\frac{1}{2}$

Is Mo correct? Yes

Explain your answer.

$\frac{6}{12}$ is equivalent to $\frac{1}{2}$

**4** Complete the calculations.

a) $\frac{1}{4} \times \frac{1}{5} = \frac{1}{20}$

b) $\frac{1}{5} \times \frac{1}{6} = \frac{1}{30}$

c) $\frac{1}{56} = \frac{1}{7} \times \frac{1}{8}$

d) $\frac{1}{8} \times \frac{1}{9} \times \frac{1}{10} = \frac{1}{720}$

e) $\frac{3}{4} \times \frac{1}{5} = \frac{3}{20}$

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

g) $\frac{5}{7} \times \frac{5}{8} = \frac{25}{56}$

h) $\frac{3}{8} \times \frac{2}{9} \times \frac{3}{10} = \frac{1}{40}$

**5** Use the diagram to complete the calculations.

a) $\frac{1}{3}$ of $\frac{1}{4} = \frac{1}{12}$

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

c) What do you notice about your answers?

Talk to your partner.

**6** Fill in the missing numbers.

a) $\frac{1}{10} = \frac{1}{2} \times \frac{1}{5}$

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

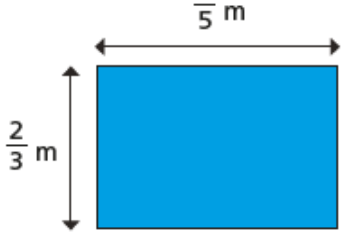
**7** Fill in the missing numbers.

a) $\frac{1}{10} = \frac{1}{4} \times \frac{2}{5}$

b) $\frac{1}{4} = \frac{1}{4} \times \frac{5}{5}$

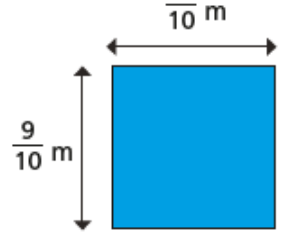
**8** Calculate the area of the shapes.

a)



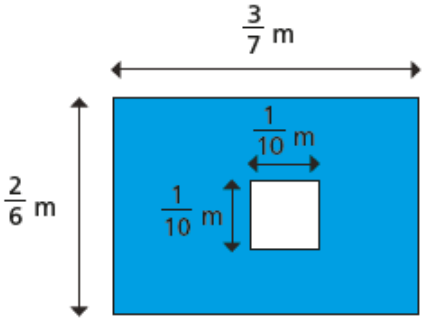

Area = $\frac{8}{15}$ m²

b)




Area = $\frac{81}{100}$ m²

**9** Work out the area of the shaded part.




$\frac{93}{700}$ m²

Wednesday

# Divide fractions by integers (2)

**1**

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

a) Write two things that are the same about the calculations.

e.g. They are both divisions.
They both contain $\frac{4}{5}$

b) Write one thing that is different about the calculations.

What the fraction is being divided by.

c) Draw a diagram to help you work out the answer to $\frac{4}{5} \div 2$

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

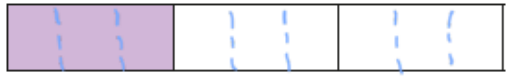
d) Draw a diagram to help you work out the answer to $\frac{4}{5} \div 3$

$\frac{4}{5} \div 3 = \frac{4}{15}$

**2** Complete the divisions using the diagrams to help you.

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

b) $\frac{1}{3} \div 3 =$ $\frac{1}{9}$



c) $\frac{2}{3} \div 3 =$ $\frac{2}{9}$

**3** $\frac{3}{4}$ of a kilogram of rice is divided equally between two bowls.


How much rice is in each bowl?

$\frac{3}{8}$ kg

**4** Work out the divisions.

a) $\frac{1}{5} \div 7 = \frac{1}{35}$

b) $\frac{1}{18} = \frac{1}{6} \div 3$

c) $\frac{1}{4} \div 9 = \frac{1}{36}$

d) $\frac{1}{42} = \frac{1}{7} \div 6$

e) $\frac{4}{9} \div 7 = \frac{4}{63}$

f) $\frac{5}{72} = \frac{5}{6} \div 12$

g) $\frac{8}{3} \div 7 = \frac{8}{21}$

h) $\frac{19}{100} = \frac{19}{20} \div 5$

i) $\frac{1}{100} \div 25 = \frac{1}{2,500}$

j) $\frac{9}{200} = \frac{45}{50} \div 20$

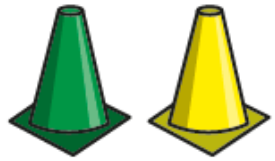
**5** Write <, > or = to complete each statement.

a) $\frac{1}{3} \div 5$ (=) $\frac{1}{5} \div 3$

b) $\frac{1}{3} \div 3$ (>) $\frac{1}{5} \div 5$

c) $\frac{3}{5} \div 5$ (<) $\frac{3}{5} \div 3$

**6** There are some cones in the PE shed.



Classes 1, 2 and 3 share them equally.

- Class 1 put theirs into 4 equal piles.
- Class 2 put theirs into 5 equal piles.
- Class 3 put theirs into 11 equal piles.

What fraction of the whole number of cones is in each pile?

| | Fraction in each pile |
|---|---|
| Class 1 | $\frac{1}{12}$ |
| Class 2 | $\frac{1}{15}$ |
| Class 3 | $\frac{1}{33}$ |

**7** a) Which of these statements are true? Tick your answers.

- ☑ $\frac{1}{2} \div 2$ *is equal to* $\frac{1}{2} \times \frac{1}{2}$
- ☑ $\frac{1}{2} \div 4 = \frac{1}{2} \times \frac{1}{4}$
- ☐ $\frac{1}{2} \div 3 = \frac{1}{2} \times \frac{1}{3}$
- ☑ $\frac{1}{2} \div 5 = \frac{1}{2} \times \frac{1}{5}$

b) What do you notice?

Is it only true for halves?

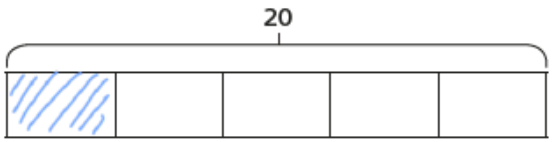
Does it work for non-unit fractions?

Talk to a partner.

# Thursday

# Fractions of an amount

**1**




a) Shade $\frac{1}{5}$ of the bar model.

b) What is $\frac{1}{5}$ of 20? 4

**2** Use your times tables knowledge to solve the calculations.

a) $\frac{1}{3}$ of 12 = 4

b) $\frac{1}{4}$ of £20 = £5

c) $\frac{1}{5}$ of 35 m = 7m

d) $\frac{1}{10}$ of 80 cm = 8 cm

e) $\frac{1}{12}$ of 60 = 5

f) $\frac{1}{7}$ of 84 kg = 12kg

Now use your answers to solve these calculations.

a) $\frac{2}{3}$ of 12 = 8

b) $\frac{3}{4}$ of £20 = £15

c) $\frac{3}{5}$ of 35 m = 21m

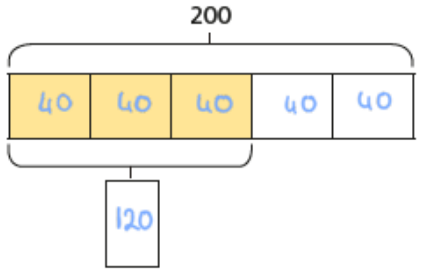
d) $\frac{7}{10}$ of 80 cm = 56cm

e) $\frac{11}{12}$ of 60 = 55

f) $\frac{6}{7}$ of 84 kg = 72kg

**3** Calculate the missing values.

a)

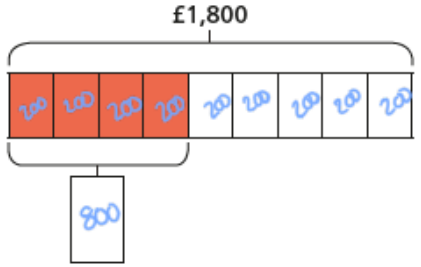



$\frac{3}{5}$ of 200 = 120

b)

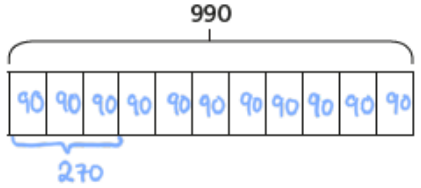

$\frac{2}{7}$ of 140 litres = 40 L

c)




$\frac{4}{9}$ of £1,800 = £800

d)




$\frac{3}{11}$ of 990 = 270

**4** a) In a school of 480 pupils, $\frac{2}{3}$ are juniors.

How many juniors are in the school?

320

b) A factory makes 256 cars.

$\frac{3}{8}$ are electric cars.

How many electric cars does the factory make?

96

c) Brett uses $\frac{2}{5}$ of his £180 savings to buy a train ticket.

How much of his savings does he have left?

£108

**5**

Alex has 288 m of fence to paint.

She paints $\frac{3}{12}$ of the whole fence on Monday. She then paints $\frac{1}{2}$ of what is left on Tuesday.

How much fence does she have left to paint?

108m

**6** Fill in the missing numbers.

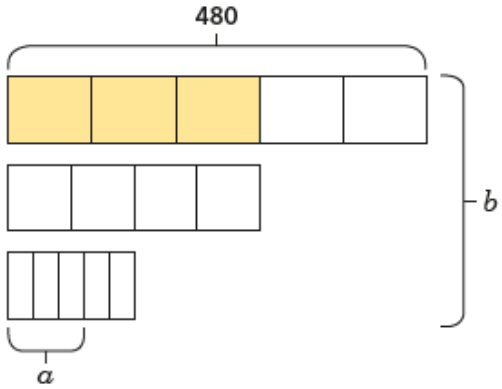
a) $\frac{3}{10}$ of \$500 = \$150

b) $\frac{3}{4}$ of 100 kg = 75 kg

c) 42 = $\frac{6}{100}$ of 700

d) 450 = $\frac{3}{20}$ of 3,000

**7** Find the values of $a$ and $b$.




$a$ = 86·4 $b$ = 912

# White Rose Answers (Year 5)

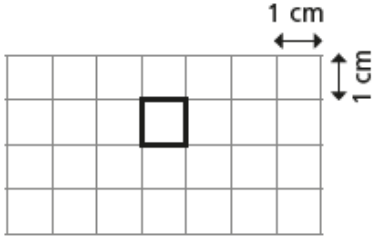
Monday

# Area of rectangles

**1** On the grid, the area of each square is 1 cm²

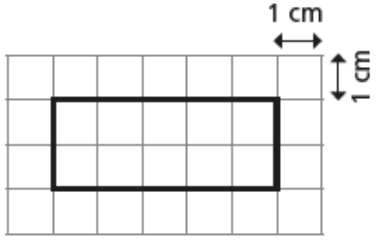
Calculate the area of each rectangle.

a)



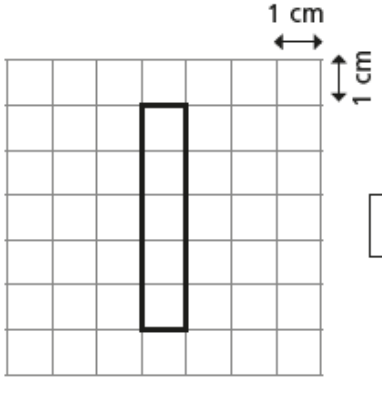

1 cm²

c)




10 cm²

b)



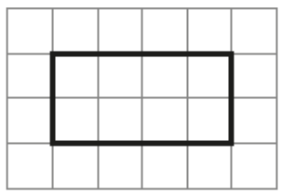

5 cm²

**2** Complete the sentences to describe the rectangle.

There are 2 rows.

Each row has 4 squares.

There are 8 squares altogether.

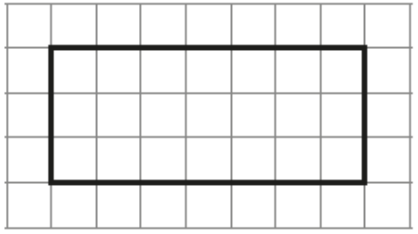


2 × 4 = 8

**3** The area of each square is 1 cm²

Work out the area of each rectangle.

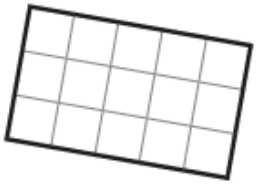
a)



3 × 7 = 21

area = 21 cm²

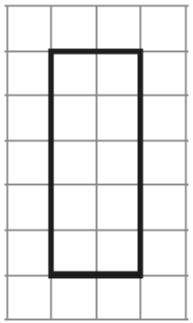
c)



3 × 5 = 15

area = 15 cm²

b)



5 × 2 = 10

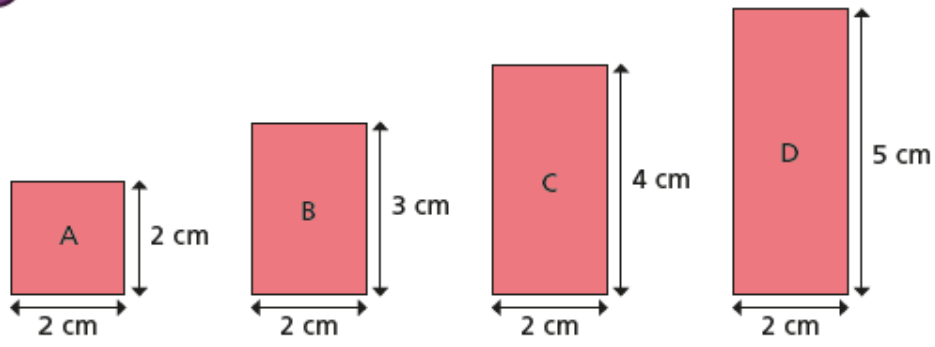
area = 10 cm²

d)

7 × 1 = 7

area = 7 cm²

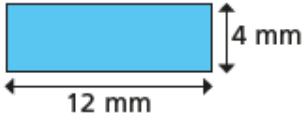
**4** Calculate the area of the rectangles.




A = 4 cm² B = 6 cm² C = 8 cm² D = 10 cm²

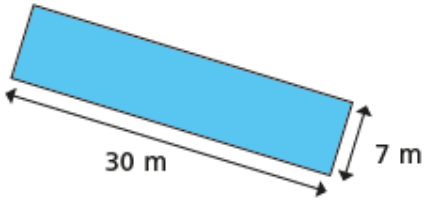
**5** Work out the area of these rectangles.

a)



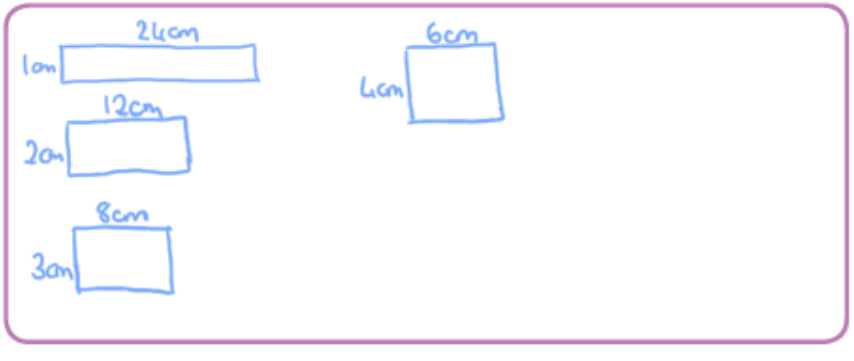

48 mm²

b)



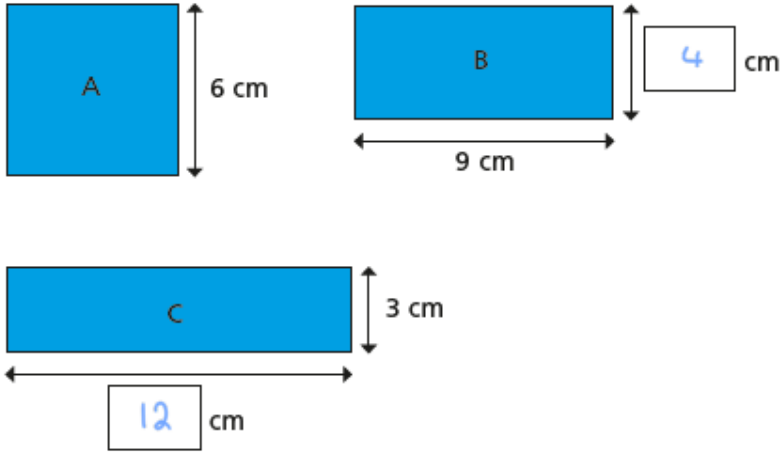

210 m²

**6** How many rectangles can you draw that have an area of 24 cm²?
Label the lengths. Your drawings do not have to be exact.




Compare your answers with a partner.

**7** These shapes all have the same area. Shape A is a square.
Work out the missing lengths.



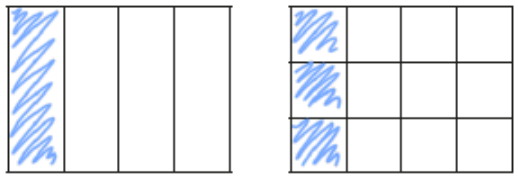

**8** A rectangle has an area of 96 cm²
The length of the rectangle is 4 cm longer than the width.
Work out the length and width of the rectangle.

length = 12cm width = 8cm

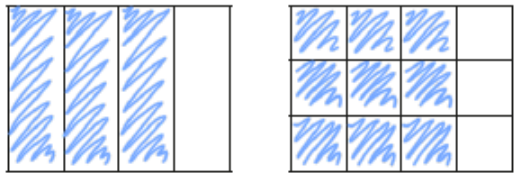
# Tuesday

# Equivalent fractions

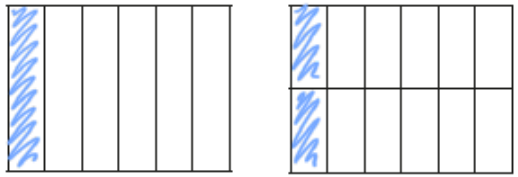
**1** Shade the shapes to show the equivalent fractions.

a) 

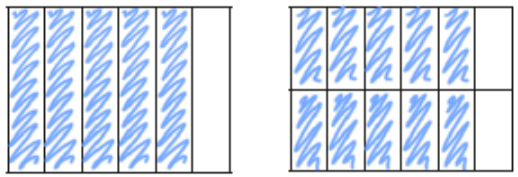
$\frac{1}{4} = \frac{3}{12}$

b) 

$\frac{3}{4} = \frac{9}{12}$

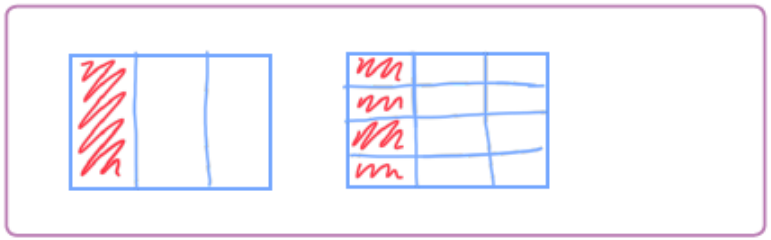
c) 

$\frac{1}{6} = \frac{2}{12}$

d) 

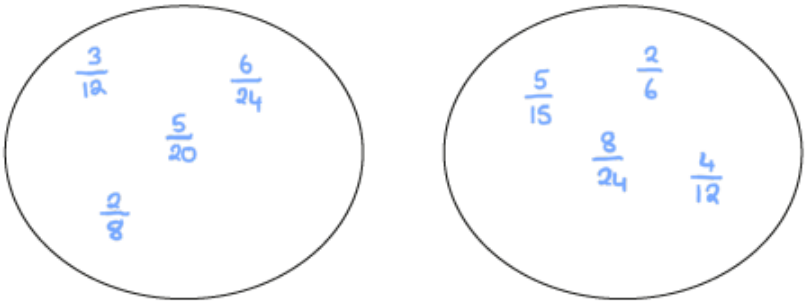
$\frac{5}{6} = \frac{10}{12}$

**2** Draw two rectangles to show that $\frac{1}{3} = \frac{4}{12}$



**3** a) Sort the fractions into the groups.

Equivalent to $\frac{1}{4}$ | Equivalent to $\frac{1}{3}$




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $\frac{5}{15}$ | $\frac{2}{6}$ | $\frac{3}{12}$ | $\frac{6}{24}$ | $\frac{8}{24}$ | $\frac{5}{20}$ | $\frac{4}{12}$ | $\frac{2}{8}$ |

b) Write one more fraction in each group.

**4** Complete the equivalent fractions.

a) $\frac{1}{7} = \frac{2}{14}$

b) $\frac{5}{7} = \frac{10}{14}$

c) $\frac{7}{8} = \frac{14}{16}$

d) $\frac{3}{4} = \frac{6}{8}$

e) $\frac{3}{4} = \frac{12}{16}$

f) $\frac{3}{4} = \frac{9}{12}$

g) $\frac{2}{3} = \frac{10}{15}$

h) $\frac{2}{5} = \frac{10}{25}$

i) $\frac{2}{7} = \frac{10}{35}$

j) Describe the pattern in part g), h) and i) to a partner.

**5** Find three ways to make the fractions equivalent.

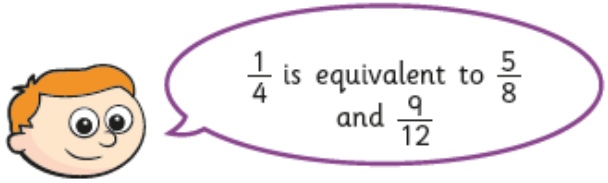
e.g.

a) $\frac{1}{2} = \frac{7}{14}$ b) $\frac{7}{7} = \frac{14}{14}$ c) $\frac{1}{7} = \frac{2}{14}$

$\frac{1}{8} = \frac{7}{56}$ $\frac{7}{1} = \frac{14}{2}$ $\frac{5}{7} = \frac{10}{14}$

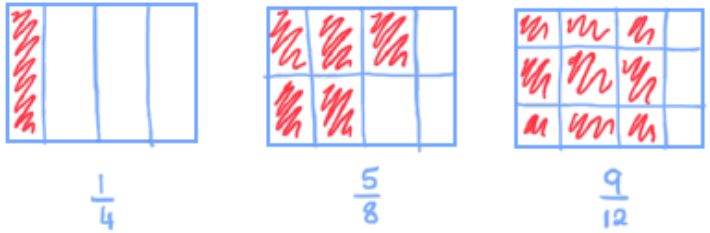
$\frac{1}{100} = \frac{7}{700}$ $\frac{7}{10} = \frac{14}{20}$ $\frac{21}{7} = \frac{42}{14}$

**6** Ron is finding equivalent fractions to $\frac{1}{4}$




Do you agree with Ron? No

Draw a diagram to support your answer.




Compare answers with a partner.

**7** Here are some equivalent fractions.

Find the values of A, B and C.

$\frac{A}{9}$ $\frac{3}{B}$ $\frac{2}{18}$ $\frac{C}{90}$

A = 1 B = 27 C = 10

**8** Here are three fraction cards.

All the fractions are equivalent.

$\frac{3}{A}$ $\frac{B}{14}$ $\frac{12}{C}$

A + B = 13

Work out the value of C.

C = 24
or
C = 28

**9** $\frac{1}{5} = \frac{3}{1 + \bullet}$

Find the value of ●

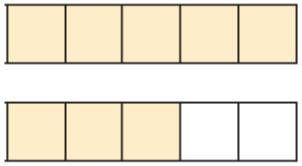
● = 14

Wednesday

# Improper to mixed numbers

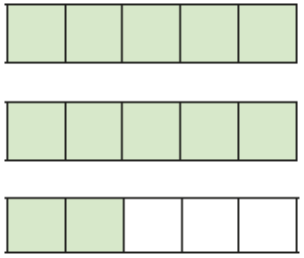
**1** Convert the improper fractions to mixed numbers.

a)



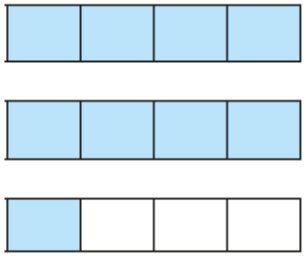
$\frac{8}{5} = 1\frac{3}{5}$

b)



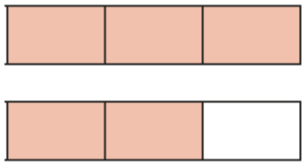
$\frac{12}{5} = 2\frac{2}{5}$

c)



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

d)

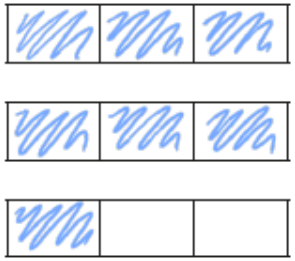


$\frac{5}{3} = 1\frac{2}{3}$

**2** Shade the bar models to represent each improper fraction.

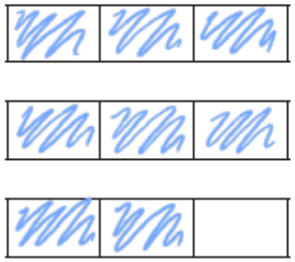
Convert the improper fractions to mixed numbers.

a)



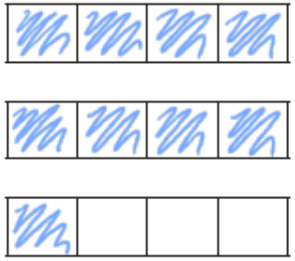
$\frac{7}{3} = 2\frac{1}{3}$

b)



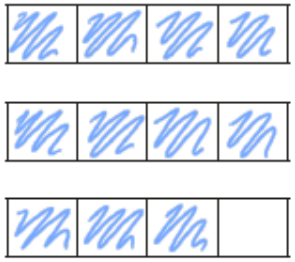
$\frac{8}{3} = 2\frac{2}{3}$

c)



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

d)



$\frac{11}{4} = 2\frac{3}{4}$

**3** Convert the improper fractions to mixed numbers.

a) $\frac{10}{2} =$ 5

b) $\frac{10}{3} =$ $3\frac{1}{3}$

c) $\frac{10}{4} =$ $2\frac{1}{2}$

d) $\frac{10}{5} =$ 2

e) $\frac{12}{5} =$ $2\frac{2}{5}$

f) $\frac{13}{6} =$ $2\frac{1}{6}$

g) $\frac{13}{7} =$ $1\frac{6}{7}$

h) $\frac{31}{8} =$ $3\frac{7}{8}$

**4** Eva has 7 bottles of juice.

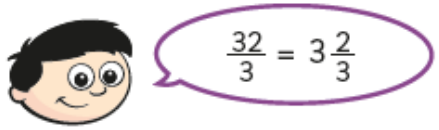
Each bottle contains half a litre of juice.


How many litres of juice does Eva have altogether?

Write your answer as a mixed number.

$3\frac{1}{2}$ l

**5** Dexter is converting improper fractions.




Explain why Dexter is incorrect.

**6** Find the value of ●

$\frac{27}{●} = ● \frac{2}{●}$

● = 5

**7** Find two possible values for ★ and ▲

$\frac{30}{★} = ▲ \frac{2}{★}$

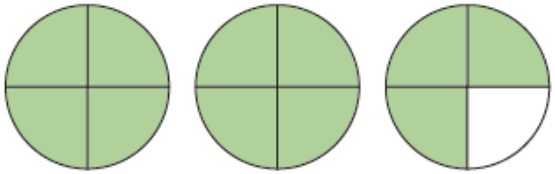
★ = 14 ▲ = 2

★ = 7 ▲ = 4

# Mixed numbers to improper fractions

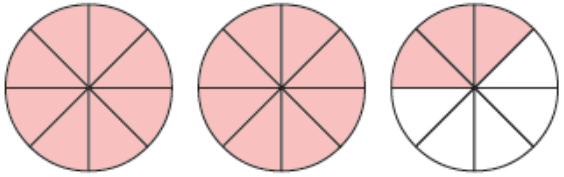
**1** Convert the mixed numbers to improper fractions.

a)



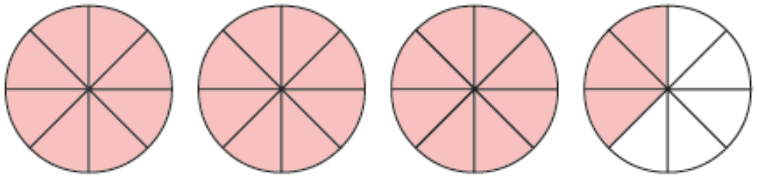
$2\frac{3}{4} = \frac{11}{4}$

b)



$2\frac{3}{8} = \frac{19}{8}$

c)

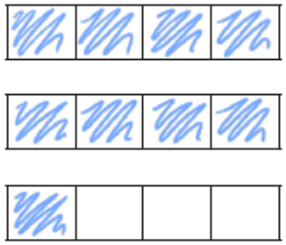


$3\frac{3}{8} = \frac{27}{8}$

**2** Convert the mixed numbers to improper fractions.

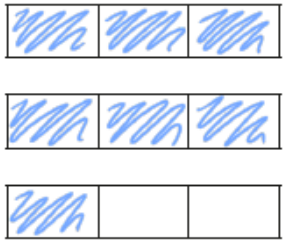
Colour the bar models to help you.

a)



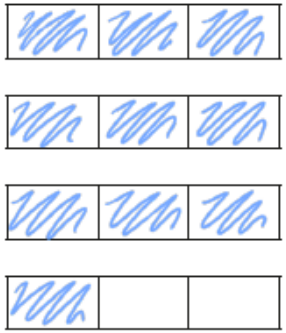
$2\frac{1}{4} = \frac{9}{4}$

b)



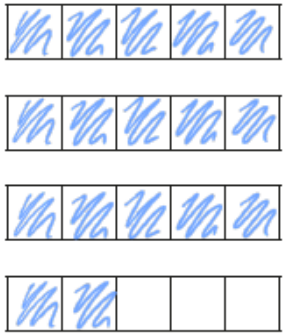
$2\frac{1}{3} = \frac{7}{3}$

c)



$3\frac{1}{3} = \frac{10}{3}$

d)



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

**3** Convert the mixed numbers to improper fractions.

Write the next conversion in each part.

a)

$2\frac{1}{7} = \frac{15}{7}$

$2\frac{2}{7} = \frac{16}{7}$

$2\frac{3}{7} = \frac{17}{7}$

$2\frac{4}{7} = \frac{18}{7}$

c)

$5\frac{1}{2} = \frac{11}{2}$

$5\frac{1}{4} = \frac{21}{4}$

$5\frac{1}{8} = \frac{41}{8}$

$5\frac{1}{16} = \frac{81}{16}$

b)

$3\frac{1}{5} = \frac{16}{5}$

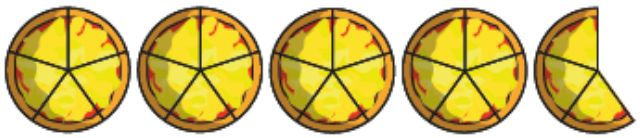
$4\frac{1}{5} = \frac{21}{5}$

$5\frac{1}{5} = \frac{26}{5}$

$6\frac{1}{5} = \frac{31}{5}$

Talk to a partner about any patterns you spot.

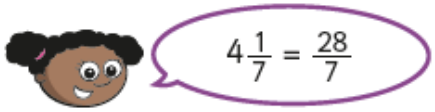
**4** Here are 4 whole pizzas and $\frac{3}{5}$ of a pizza.



How many children can have $\frac{1}{5}$ of a pizza?

23

**5** Whitney is converting mixed numbers to improper fractions.

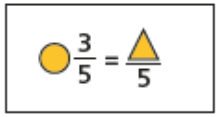



Do you agree with Whitney? No

Explain your answer.

She has converted 4 wholes to $\frac{28}{7}$ but forgotten to add the extra seventh.

**6**




The table shows some possible values of the circle.

Use this to find the corresponding value of the triangle.

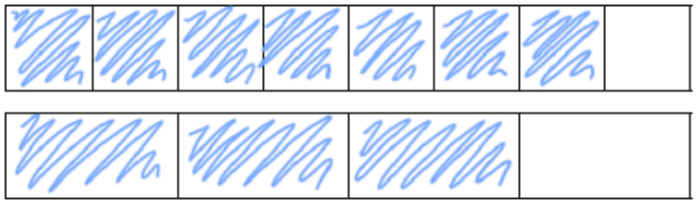
| ● | ▲ |
|---|---|
| 1 | 8 |
| 2 | 13 |
| 4 | 23 |
| 8 | 43 |
| 16 | 83 |
| 17 | 88 |
| 160 | 803 |

# Thursday

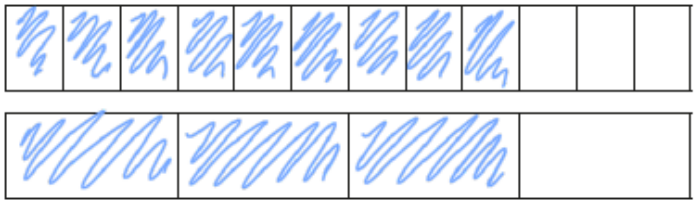
# Compare and order fractions less than 1

**1** Write <, > or = to compare the fractions.

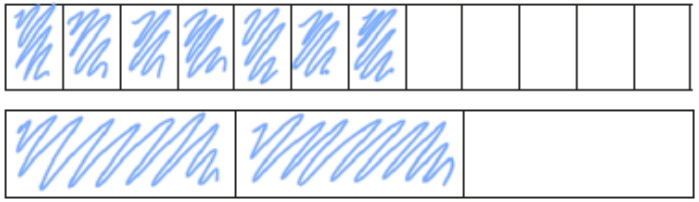
Use the bar models to help you.



$\frac{7}{8}$ > $\frac{3}{4}$



$\frac{9}{12}$ = $\frac{3}{4}$



$\frac{7}{12}$ < $\frac{2}{3}$

**2** Write <, > or = to compare the fractions.

a) $\frac{1}{5}$ < $\frac{4}{15}$

b) $\frac{2}{5}$ > $\frac{4}{15}$

c) $\frac{2}{5}$ = $\frac{6}{15}$

d) $\frac{2}{3}$ > $\frac{6}{15}$

e) $\frac{2}{3}$ > $\frac{6}{12}$

f) $\frac{2}{3}$ = $\frac{6}{9}$

g) $\frac{2}{9}$ < $\frac{1}{3}$

h) $\frac{4}{9}$ > $\frac{1}{3}$

i) $\frac{4}{12}$ = $\frac{1}{3}$

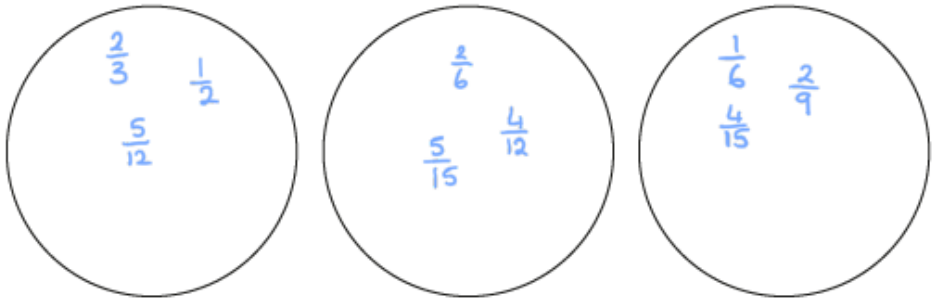
j) $\frac{8}{12}$ = $\frac{2}{3}$

k) $\frac{8}{12}$ < $\frac{3}{3}$

l) $\frac{8}{12}$ < $\frac{3}{4}$

**3** Sort the fractions into the circles.

greater than $\frac{1}{3}$ | equal to $\frac{1}{3}$ | less than $\frac{1}{3}$




| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $\frac{2}{3}$ | $\frac{1}{6}$ | $\frac{1}{2}$ | $\frac{2}{6}$ | $\frac{2}{9}$ | $\frac{5}{12}$ | $\frac{4}{12}$ | $\frac{4}{15}$ | $\frac{5}{15}$ |

**4** What could the missing numerators and denominators be?

Write a number in each box to make the statements correct.

e.g.

a) $\frac{1}{5} < \frac{5}{15}$

b) $\frac{2}{6} < \frac{5}{12}$

c) $\frac{5}{12} < \frac{5}{6}$

d) $\frac{1}{3} < \frac{5}{6}$

e) $\frac{3}{5} < \frac{5}{5}$

f) $\frac{5}{6} < \frac{5}{5}$

g) $\frac{6}{9} < \frac{5}{6}$

h) $\frac{10}{12} < \frac{5}{4}$

i) $\frac{23}{24} < \frac{5}{5}$

Compare answers with a partner.

**5** Tommy and Eva are comparing fractions.

$\frac{2}{3}$ $\frac{8}{12}$ $\frac{4}{9}$

I found a common denominator of 36 to compare the fractions.

Tommy

I found a common numerator of 4 to compare the fractions.

Eva

Whose method is more efficient? Various

Talk about your answer with a partner.

**6** Write the fractions in ascending order.

a) $\frac{2}{5}, \frac{2}{7}, \frac{2}{3}, \frac{2}{4}, \frac{2}{10}$

$\frac{2}{10}$ $\frac{2}{7}$ $\frac{2}{5}$ $\frac{2}{4}$ $\frac{2}{3}$

b) $\frac{2}{3}, \frac{5}{9}, \frac{1}{9}, \frac{5}{6}, \frac{2}{9}$

$\frac{1}{9}$ $\frac{2}{9}$ $\frac{5}{9}$ $\frac{2}{3}$ $\frac{5}{6}$

c) $\frac{3}{5}, \frac{7}{10}, \frac{1}{2}, \frac{3}{10}, \frac{1}{5}$

$\frac{1}{5}$ $\frac{3}{10}$ $\frac{1}{2}$ $\frac{3}{5}$ $\frac{7}{10}$

d) $\frac{3}{8}, \frac{6}{17}, \frac{12}{30}, \frac{2}{7}, \frac{1}{3}$

$\frac{2}{7}$ $\frac{1}{3}$ $\frac{6}{17}$ $\frac{3}{8}$ $\frac{12}{30}$

**7** What could the missing numerator be?

$\frac{3}{5} < \frac{\square}{15} < \frac{9}{10}$

Write all four possibilities.

$\frac{10}{15}$ $\frac{11}{15}$ $\frac{12}{15}$ $\frac{13}{15}$

# Dip and Pick 15 Answers

Ratio 180l in total

| Lacquer | | Hardener | | Thinner |
|---|---|---|---|---|
| 2 | : | 1 | : | ? |

Trial and Improvement

| Lacquer | | Hardener | | Thinner |
|---|---|---|---|---|
| 2 | : | 1 | : | 1 |
| 90 | | 45 | | 45 |
| 2 | : | 1 | : | 2 |
| 72 | | 36 | | 72 |
| 6 | : | 3 | : | 1 |
| 108 | | 54 | | 18 |

One possible approach...

Ratio of 3 : 2 for lacquer and hardener.

Investigate how many litres of each he would need to spray ? number of cars.

Ratio 2 : 1

| Lacquer | Hardener |
|---|---|
| 400ml | 200ml |
| 600ml | 300ml |
| 800ml | 400ml |

etc. How can the pattern be used to predict how many combinations there are in total?

Lacquer
Hardener
2l : 1l

Total of 72 litres
48l : 24l

Lacquer Hardener
2l : 1l
Total of 72 litres
48l : 24l

Stuart uses half of his lacquer = 24l
Stuart will have 12l of hardener left.

Lacquer Hardener
2l : 1l

Total of 72 litres
48l : 24l

Stuart uses half of his lacquer = 24l
Stuart will have 12l of hardener left.

Stuart is correct.

198l of lacquer and hardener.

Each car takes 3l for each coat.

198l ÷ 6 = more than enough for 30 cars.

# Reading Answers

## Answers to ‘Robert the Bruce’

*Inference Focus*

1. Cold and lonely. He wraps the blanket around him and is grumpy about the fire
2. Keeping track of the days
3. Proud and reminiscent - there’s a sparkling tear in his eye
4. He is fascinated by it - it’s his only company

*VIPERS questions*

V: You know/understand
V: Didn’t/don’t
E: He used its perseverance as inspiration
R: Six
S: Don’t give in - keep trying

## Answers to ‘Worst Jobs for Kids’

*Summary Focus*

1. Go to school
2. Their small size and tiny hands
3. They were all dangerous
4. The rise of the steam train
5. Any suitable order so long as appropriate reasons are given

*VIPERS questions*

V: Din
I: There was a lot of opportunity in London
I: Feels sorry for them. The use of language, such as luckless or cursed.
R: Dog poo
P: Any suitable prediction with reasons.