



THIRD SPACE LEARNING

Specialist 1-to-1 maths interventions
and curriculum resources

Rapid Reasoning

Year 4 | Weeks 13–18



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Rapid Reasoning

Year 4 | Week 18

As with last week, the questions this week within *Rapid Reasoning* continue to focus on fractions and proportionality.

This week, questions will focus on children solving problems using increasingly harder fractions, for example to calculate fractions of a quantity, including children calculating with non-unit fractions (e.g. $\frac{3}{4}$).

The following Year 4 objective continues to be a focus from week 17:

- recognise and show, using diagrams, families of common equivalent fractions.

As with previous weeks, other content from Year 4 that the children have met in previous weeks of *Rapid Reasoning*, along with Year 3 objectives, will also feature this week.

Q1

There are 33 children in Class 4.

$\frac{1}{3}$ of the children are boys.

How many boys are there?

 boys

1 mark

Q2

Emily uses these digits to create a multiplication statement.

 5 6 9

Her answer is a **multiple of 10**.

Complete the boxes below to show what Emily's multiplication statement could be.

 ×

1 mark

Q3

Here are five number cards:

 5 9 6 14 16

Which **TWO** number cards are factors of 36?

 and

1 mark

Q1

There are 33 children in Class 4.

$\frac{1}{3}$ of the children are boys.

How many boys are there?

11 boys

1 mark

Q2

Emily uses these digits to create a multiplication statement.

5 6 9

Her answer is a multiple of 10.

Complete the boxes below to show what Emily's multiplication statement could be.

9 5 × 6

1 mark

Q3

Here are five number cards:

5 9 6 14 16

Which TWO number cards are factors of 36?

6 and 9

1 mark

	Requirement	Mark	Additional guidance
Q1	11	1	
Q2	95 × 6 OR 96 × 5	1	
Q3	6 and 9	1	Accept in either order.

Q1

Write in the missing numbers to make these statements correct.

$$59 + \boxed{} = 167$$

$$5 \times \boxed{} = 150$$

2 marks

Q2

A book has 276 pages.

Eden has read $\frac{2}{3}$ of the book.

How many pages has Eden got left to read?

pages

2 marks

Q3

Flo buys 6 bags of balloons.

Each bag has 24 balloons in.

How many balloons does Flo buy?

balloons

1 mark

Q1

Write in the missing numbers to make these statements correct.

$$59 + \boxed{108} = 167$$

$$5 \times \boxed{30} = 150$$

2 marks

Q2

A book has 276 pages.

Eden has read $\frac{2}{3}$ of the book.

How many pages has Eden got left to read?

92 pages

2 marks

Q3

Flo buys 6 bags of balloons.

Each bag has 24 balloons in.

How many balloons does Flo buy?

144 balloons

1 mark

	Requirement	Mark	Additional guidance
Q1	Award ONE mark for each correctly completed box. $59 + 108 = 167$ $5 \times 30 = 150$	2	
Q2	Award TWO marks for the correct answer of 92. Award ONE mark for evidence of a complete method, for example: $276 \div 3 = 92$ $92 \times 2 = 184$ $276 - 184 = \text{wrong answer}$ OR $1 - \frac{2}{3} = \frac{1}{3}$ $276 \div 3 = 92$ OR $276 \div 3 = \text{wrong answer, followed by no further working.}$	2	
Q3	144 balloons	1	

What are examiners looking for?**Q2**

A book has 276 pages.

Eden has read $\frac{2}{3}$ of the book.

How many pages has Eden got left to read?

92 pages

2 marks

Why are we asking this question?

This question is designed to assess children's ability to find fractions of amounts and solve problems involving these.

What common errors do we expect to see?

Some children may think that the question is asking them to find $\frac{2}{3}$ of 276, rather than finding what is left after $\frac{2}{3}$ of 276 has been subtracted. Children who give an answer of 184 are clearly able to calculate fractions of amounts but have not understood what the problem is asking.

How to encourage children to solve this question

Children may find it helpful to sketch a bar model in order to help them visualise the problem. The total amount is equal to 276 and — in order to show the amount that Eden has read/not read — this needs to be split into three equal parts.



Using a bar model like this can also assist children in recognising that the problem is not as complex as it first looks. Although a common method may be to divide by 3 (to find $\frac{1}{3}$), multiply by 2 (to find $\frac{2}{3}$) and then subtract from 276 to find the difference, this is just the same as simply dividing by 3 (because the answer is equivalent to $\frac{1}{3}$ of 276). The bar model clearly shows this.

When dividing 276 by 3, children may be encouraged to partition the number in such a way as to be helpful. For example, if they can recognise that 27 and 6 are both multiples of 3, they can then partition 276 into 270 and 6 and divide both numbers by 3 before combining.

Q1

Place these numbers in order, starting with the smallest.

6,783 6,875 6,821 6,743, 6,822

Smallest

1 mark

Q2

Complete the boxes below with integers to make the statement correct.

$$\boxed{} \times \boxed{} = 300$$

1 mark

Q3

George has 20 football stickers on a page.

$\frac{1}{4}$ of them are strikers. $\frac{1}{2}$ of them are defenders.

The rest are midfielders.

How many midfielder stickers does he have?

stickers

1 mark

Q1

Place these numbers in order, starting with the smallest.

6,783 6,875 6,821 6,743, 6,822

Smallest

6,743

6,783

6,821

6,822

6,875

1 mark

Q2

Complete the boxes below with integers to make the statement correct.

30

×

10

= 300

1 mark

Q3

George has 20 football stickers on a page.

$\frac{1}{4}$ of them are strikers. $\frac{1}{2}$ of them are defenders.

The rest are midfielders.

How many midfielder stickers does he have?

5 stickers

1 mark

	Requirement	Mark	Additional guidance
Q1	6,743 6,783 6,821 6,822 6,875	1	
Q2	Accept any two whole numbers which satisfy the statement, for example: 30 × 10 15 × 20 5 × 60	1	
Q3	5	1	

Q1 David has 1kg of oats.

He uses $\frac{1}{4}$ of it.

How many grams of oats did he use?

 g

1 mark

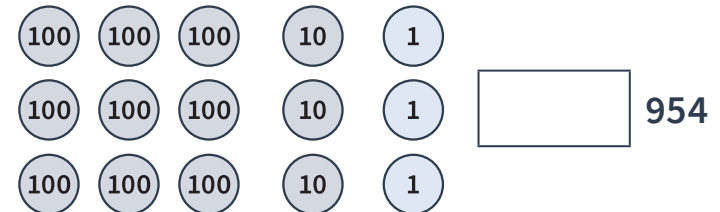
Q2 Fill in the missing digits in this calculation.

$$\begin{array}{r}
 54\boxed{}2 \\
 + 3\boxed{}78 \\
 \hline
 \boxed{}310
 \end{array}$$

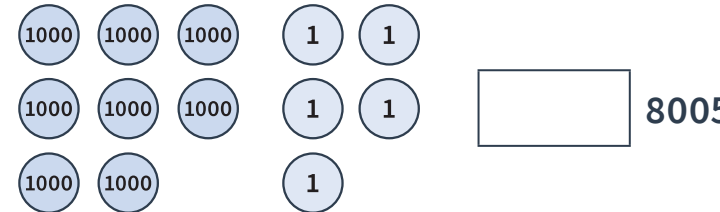
2 marks

Q3

Place <, = or > in the boxes inbetween each representation to make the statements correct.



954



8005

1 mark

Q1 David has 1kg of oats.

He uses $\frac{1}{4}$ of it.

How many grams of oats did he use?

250 g

1 mark

Q2 Fill in the missing digits in this calculation.

$$\begin{array}{r}
 54\boxed{3}2 \\
 + 3\boxed{8}78 \\
 \hline
 \boxed{9}310
 \end{array}$$

2 marks

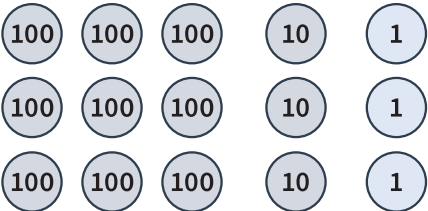
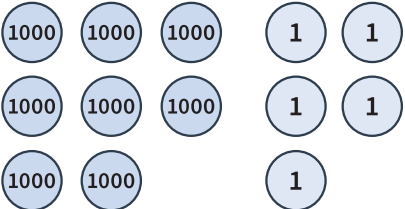
Q3

Place <, = or > in the boxes inbetween each representation to make the statements correct.

$$\begin{array}{cccccc}
 (100) & (100) & (100) & (10) & (1) & \\
 (100) & (100) & (100) & (10) & (1) & \\
 (100) & (100) & (100) & (10) & (1) &
 \end{array}
 \quad \boxed{<} \quad 954$$

$$\begin{array}{cccccc}
 (1000) & (1000) & (1000) & (1) & (1) & \\
 (1000) & (1000) & (1000) & (1) & (1) & \\
 (1000) & (1000) & & (1) & &
 \end{array}
 \quad \boxed{=} \quad 8005$$

1 mark

	Requirement	Mark	Additional guidance
Q1	250g	1	
Q2	Award TWO marks for all three digits completed correctly. $ \begin{array}{r} 5 \quad 4 \quad \boxed{3} \quad 2 \\ + \quad 3 \quad \boxed{8} \quad 7 \quad 8 \\ \hline \boxed{9} \quad 3 \quad 1 \quad 0 \end{array} $ Award ONE mark for two digits added correctly.	2	
Q3	 < 954  = 8005 BOTH must be correct for the award of ONE mark.	1	

Q1

There are 4 red balls, 3 blue balls and 4 green balls in a bag.

What fraction of **all** the balls are green?

1 mark

Q2

Amelie had a big bag of raisins.

For every 12 raisins she ate, she gave 8 to her brother.

Once she had finished the bag, she had given 56 raisins to her brother.

How many raisins were in the bag to start off with?

--

raisins

2 marks

Q3

How many minutes are in half a day?

minutes

1 mark

Q1

There are 4 red balls, 3 blue balls and 4 green balls in a bag.

What fraction of all the balls are green?

4

11

1 mark

Q2

Amelie had a big bag of raisins.

For every 12 raisins she ate, she gave 8 to her brother.

Once she had finished the bag, she had given 56 raisins to her brother.

How many raisins were in the bag to start off with?

140 raisins

2 marks

Q3

How many minutes are in half a day?

720 minutes

1 mark

	Requirement	Mark	Additional guidance
Q1	$\frac{4}{11}$	1	
Q2	Award TWO marks for the correct answer of 140 Award ONE mark for evidence of a complete method, with up to one arithmetic error, for example: $56 \div 8 = 7$ $7 \times 12 = 84$ $84 + 56 = \text{wrong answer.}$	2	An answer must be arrived at for the award of ONE mark.
Q3	720 minutes	1	



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Do you have a group of pupils who need a boost in maths this term?

Each pupil could receive a personalised lesson every week from our specialist 1-to-1 maths tutors.

- Raise attainment
 - Plug any gaps or misconceptions
 - Boost confidence
-

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