



THIRD SPACE LEARNING

Specialist 1-to-1 maths interventions
and curriculum resources

Rapid Reasoning

Year 4 | Week 1

This is the first week that children will have met *Rapid Reasoning* in Year 4 and therefore they may find it more challenging to begin with. Depending on your class, you may wish to introduce children to the expectation of completing two questions initially, before extending to all three questions by the end of the week.

As we are at the start of Year 4, the majority of the objectives covered this week involve Year 3 content. The Year 3 objectives that are re-introduced this week focus on **place value**.

Year 4 objectives introduced in a reasoning context for the first time this week include:

- ordering and comparing numbers beyond 1,000
- recognising the place value of each digit in a four-digit number (extending from a three-digit number in Year 3).

Objectives from *Fluent in Five* that are also tested in a reasoning context this week include:

- adding a three-digit number and ones
- finding unit fractions of a number
- basic written multiplication division addition and subtraction from Year 4.

Please note that some questions are worth two marks, and by their very nature, answers to these questions are never clear-cut. For a full breakdown of how marks would be awarded for these questions, please refer to the mark schemes provided.

We hope your class enjoys this first week of *Rapid Reasoning*!

Q1

Write the value of the digit 3 shown in the numbers below in the box next to each number.

40350303021

2 marks

Q2

$669 + 6 = ?$

$654 + 5 = ?$

$695 - 20 = ?$

$663 - 5 = ?$

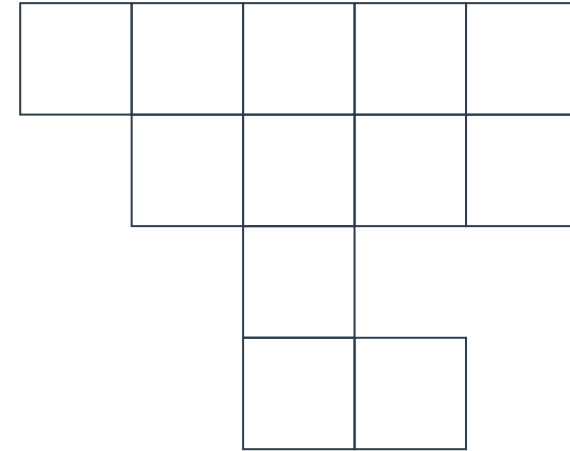
$654 - 5 = ?$

Circle the two number sentences above that have the same answer.

1 mark

Q3

Shade $\frac{1}{4}$ of this shape.



1 mark

Q1

Write the value of the digit 3 shown in the numbers below in the box next to each number.

403

3

5030

30

3021

3000

2 marks

Q2

$669 + 6 = ?$

$654 + 5 = ?$

$695 - 20 = ?$

$663 - 5 = ?$

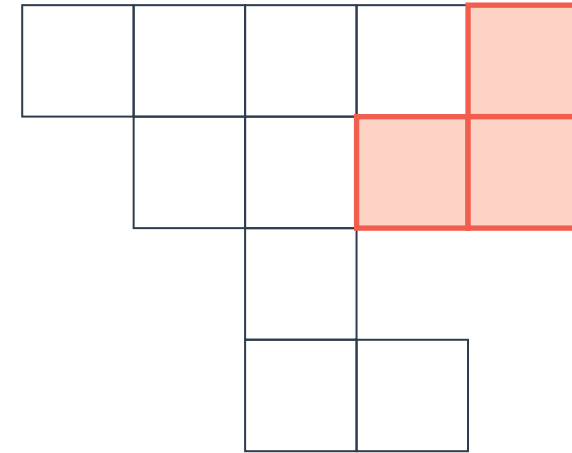
$654 - 5 = ?$

Circle the two number sentences above that have the same answer.

1 mark

Q3

Shade $\frac{1}{4}$ of this shape.



1 mark

	Requirement	Mark	Additional guidance
Q1	Award TWO marks for all correct answers. Award ONE mark for two correct answers. 40 <u>3</u> <u>3</u> 50 <u>30</u> <u>30</u> <u>3021</u> <u>3000</u>	2	Also accept the values written in words.
Q2	$669 + 6 = ?$ $695 - 20 = ?$ Circled	1	BOTH must be circled for the award of the mark.
Q3	Any three squares circled.	1	

What are examiners looking for?

Q1

Write the value of the digit 3 shown in the numbers below in the box next to each number.

403

3

5030

30

3021

3000

2 marks

Why are we asking this question?

This question is designed to test children's understanding of place value in numbers with up to four digits, and how the value of a digit changes based on its position within the number.

What common errors do we expect to see?

Children identify all values as 3. This indicates that children have a limited understanding of place value and assume that the digit 3 has the value of 3 regardless of its place in a number.

Children incorrectly identify the place value of one or more digits, for example, they may record the answer of 300 for 3021. This indicates that children have become confused with the place value values for different places in the number. This can especially emerge at this time in Year 4, when children are being exposed to numbers with more than 3 digits for the first time.

How to encourage children to solve this question

When solving place value problems, children should be encouraged to draw their own place value grid, such as the one shown below.

Thousands	Hundreds	Tens	Ones
	1	8	7

They can then add the numbers from the question to their grid.

Thousands	Hundreds	Tens	Ones
	4	0	3
5	0	3	0
3	0	2	1

They can then use this to identify the value of the digit 3 in each number. For example, they can easily see that in 3021, the 3 is worth 3 **thousands**, and therefore 3,000.

Children should be careful if they add the place value labels or names directly to the table provided in the question, as this has been designed to ensure children have a clear understanding of place value, and therefore the top number is aligned so that the hundreds value is over the thousands value of the other numbers.

Q1

A shop has a 10m roll of fabric.
 Mark buys 75cm of fabric from the roll.
 Lily buys 2 metres of fabric from the roll.

How much fabric is left on the roll?

2 marks

Q2

Balloons come in packets of six.
 For her party, Eden needs 36 balloons.

How many packets does she need?

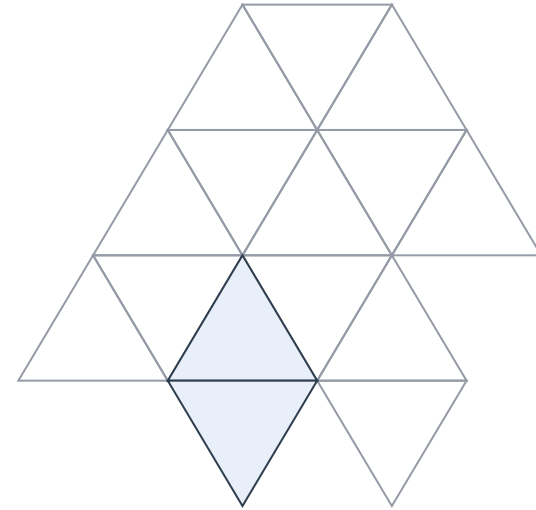
packets

1 mark

Q3

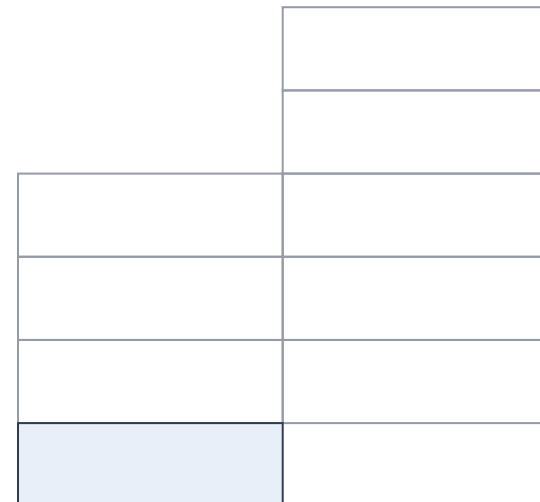
Shade more of these shapes so that $\frac{1}{3}$ of each shape is shaded.

a



1 mark

b



1 mark

Q1 A shop has a 10m roll of fabric.
Mark buys 75cm of fabric from the roll.
Lily buys 2 metres of fabric from the roll.

How much fabric is left on the roll?

7.25m

2 marks

Q2 Balloons come in packets of six.
For her party, Eden needs 36 balloons.

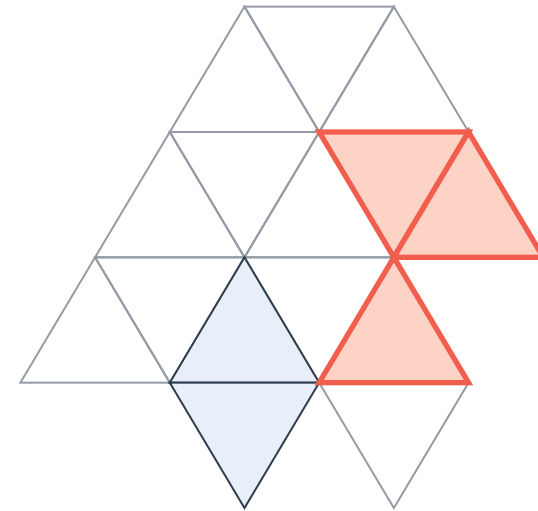
How many packets does she need?

6 packets

1 mark

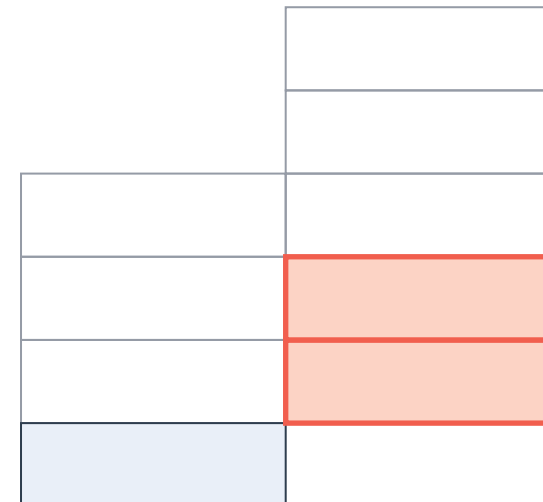
Q3 Shade more of these shapes so that $\frac{1}{3}$ of each shape is shaded.

a



1 mark

b



1 mark

	Requirement	Mark	Additional guidance
Q1	<p>Award TWO marks for the correct answer of 7.25m, 7m 25cm OR 725cm.</p> <p>Also accept 7.25 or 7250.</p> <p>Award ONE mark for evidence of a full method with up to one arithmetic error. For example,</p> <p>2 meters = 200cm</p> <p>$200 + 75 = 275$</p> <p>10 meters = 1000cm</p> <p>$1000 - 275 =$ wrong answer</p>	2	The conversion from m to cm (or vice versa) must have been accurately completed for the award of ONE mark.
Q2	6	1	
Q3a	Three more triangles shaded	1	
Q3b	Two more rectangles shaded	1	

Q1

Place these numbers in order, starting with the smallest.

1,250 550 2,150

1,040 22,005 5,005

smallest

1 mark

Q2

Look at these number sentences.

$504 + 200 = ?$ $865 + 8 = ?$

$765 - 30 = ?$ $867 + 384 = ?$

$760 - 382 = ?$ $7 + 374 = ?$

$672 - 284 = ?$ $600 + 231 = ?$

Tick (✓) the number sentences that you would not be able to solve quickly mentally.

2 marks

Q3

There are 15kg of bricks in each pack.

How many kilograms of bricks are in 5 packs?

kg

1 mark

Q1

Place these numbers in order, starting with the smallest.

1,250 550 2,150

1,040 22,005 5,005

smallest

550

1,040

1,250

2,150

5,005

22,005

1 mark

Q2

Look at these number sentences.

$504 + 200 = ? \quad \square \quad 865 + 8 = ? \quad \square$

$765 - 30 = ? \quad \square \quad 867 + 384 = ? \quad \checkmark$

$760 - 382 = ? \quad \checkmark \quad 7 + 374 = ? \quad \square$

$672 - 284 = ? \quad \checkmark \quad 600 + 231 = ? \quad \square$

Tick (✓) the number sentences that you would not be able to solve quickly mentally.

2 marks

Q3

There are 15kg of bricks in each pack.

How many kilograms of bricks are in 5 packs?

75 kg

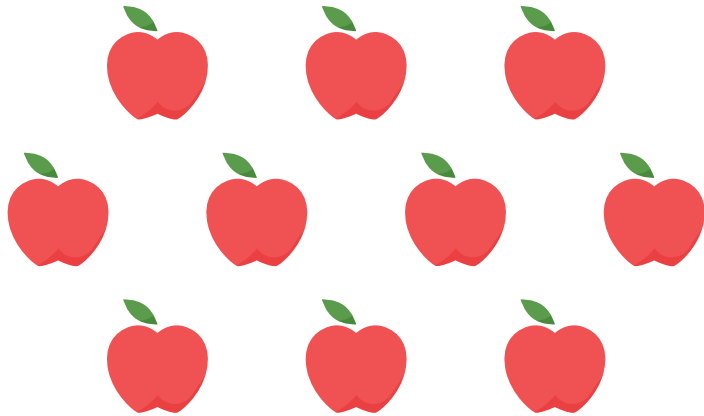
1 mark

	Requirement	Mark	Additional guidance
Q1	550 1,040 1,250 2,150 5,005 22,005	1	
Q2	<p>Award TWO marks for</p> <p>$760 - 382 = ?$</p> <p>$867 + 384 = ?$</p> <p>$672 - 284 = ?$</p> <p>all ticked.</p> <p>Award ONE mark for either:</p> <p>two correctly ticked with none incorrectly ticked.</p> <p>OR</p> <p>three correctly ticked with up to one incorrectly ticked.</p>	2	Number sentences do not need to be evaluated for the award of the marks.
Q3	75kg	1	

Q1

a

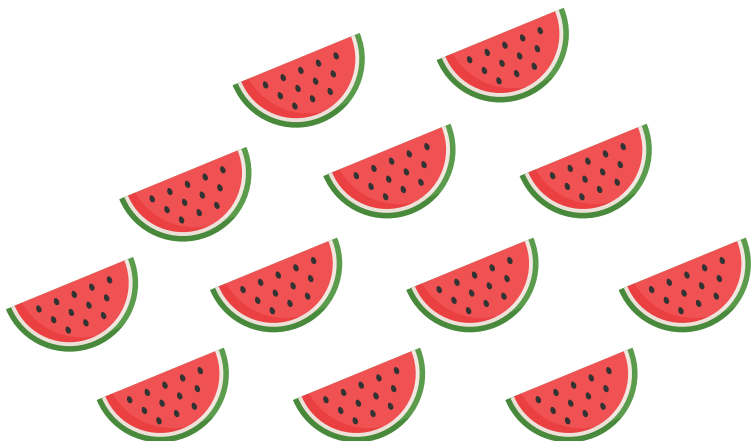
Circle $\frac{3}{5}$ of the apples.



1 mark

b

Circle $\frac{5}{6}$ of the watermelons.



1 mark

Q2

Evie and Gracie have both got this number sentence to solve.

$$871 + 20 = ?$$

Evie says she can solve this mentally.

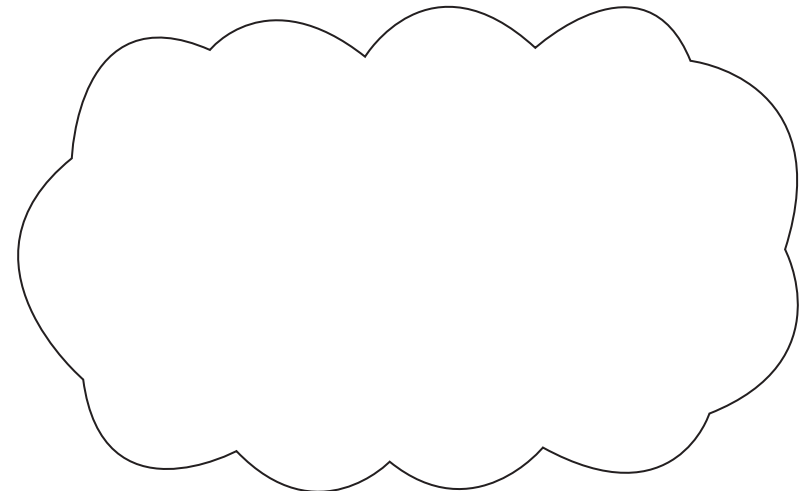
Gracie says she thinks that you have to use a written method.

Who is correct?

Evie

Gracie

How do you know?



1 mark

Q3

In each pair of numbers, circle the number where the digit 5 is worth the most.

4503

3052

5043

9502

9850

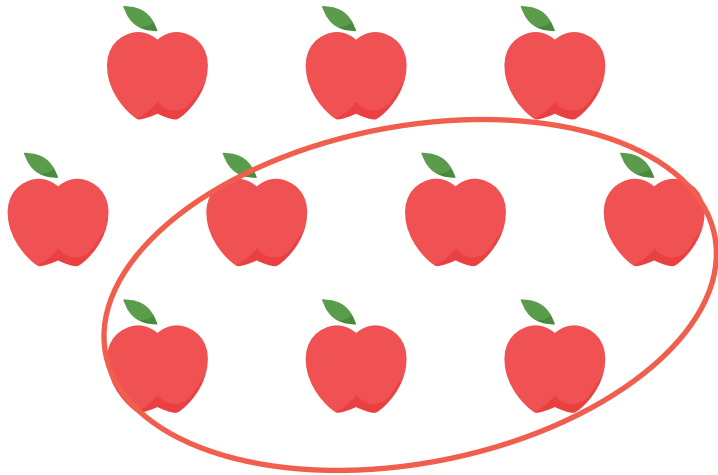
3512

2 marks

Q1

a

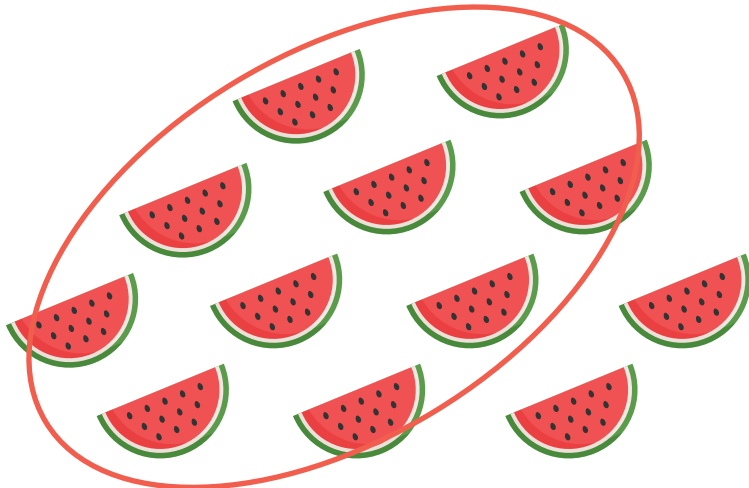
Circle $\frac{3}{5}$ of the apples.



1 mark

b

Circle $\frac{5}{6}$ of the watermelons.



1 mark

Q2

Evie and Gracie have both got this number sentence to solve.

$$871 + 20 = ?$$

Evie says she can solve this mentally.

Gracie says she thinks that you have to use a written method.

Who is correct?

Evie

Gracie

How do you know?



1 mark

Q3

In each pair of numbers, circle the number where the digit 5 is worth the most.

4503

3052

5043

9502

9850

3512

2 marks

	Requirement	Mark	Additional guidance
Q1a	Any six apples circled.	1	
Q1b	Any 10 watermelons slices circled.	1	
Q2	<p>Award ONE mark for the correct identification of Evie AND an explanation that explains that either as you are adding 'tens' only the tens digit will change in the number.</p> <p>For example:</p> <p>Evie is correct as you are adding 20 which is two tens. This means only the tens digit in 871 will change, so you can do that in your head.</p> <p>Only the tens digit will change.</p>	1	<p>Do NOT accept vague explanations for example:</p> <p>You can do it in your head easily.</p> <p>It's just adding tens.</p>
Q3	<p>Award TWO marks for all three numbers correctly circled.</p> <p>Award ONE mark for two numbers correctly circled.</p> <p>4503 3052</p> <p>5043 9502</p> <p>9850 3512</p>	2	

Q1 The numbers in this sequence increase by 7 each time.

53 60 81 88

Write in the missing numbers.

2 marks

Q2 There are 6 pencils in each pack.
There are 33 children in Toucan class.
The teacher needs to buy two pencils for each child.

How many packs of pencils does the teacher need to buy?

packs

2 marks

Q3 Mark buys a magazine for £2.10 and a chocolate bar for 85p.
He pays with a £5 note.

How much change does Mark get?

£

1 mark

Q1 The numbers in this sequence increase by 7 each time.

53 60 **67** **74** 81 88 **95**

Write in the missing numbers.

2 marks

Q2 There are 6 pencils in each pack.
There are 33 children in Toucan class.
The teacher needs to buy two pencils for each child.

How many packs of pencils does the teacher need to buy?

11 packs

2 marks

Q3 Mark buys a magazine for £2.10 and a chocolate bar for 85p.
He pays with a £5 note.

How much change does Mark get?

£ **2.05**

1 mark

	Requirement	Mark	Additional guidance
Q1	Award TWO marks for all three numbers correctly completed. 53 60 67 74 81 88 95 Award ONE mark for two numbers correctly completed.	2	
Q2	Award TWO marks for the correct answer of 11 packs. Award ONE mark for evidence of a complete working, but with one arithmetic error, for example: $33 \times 2 = 66$ $66 \div 6 = \text{wrong answer.}$	2	
Q3	£2.05	1	



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Rapid Reasoning


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