



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 16

This week, the questions within *Rapid Reasoning* focus on measurement.

The following Year 4 objectives are introduced for the first time this week:

- estimate, compare and calculate different measures, including money in pounds and pence.

Other measurement questions, which draw upon children's knowledge and understanding from Year 3, are also present this week.

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

Tick the boxes that you think are correct.

The length of a banana is about:

2cm 20cm 2mm 2m 20m

The mass of an apple is about:

2g 20kg 200kg 200g 2kg

A glass of fruit juice is about:

2ml 2l 2,000ml 150ml 20l

2 marks

Q2

Match these questions to their answers.
 More than one question may have the same answer.

$8 \times 6 =$ 44

Half of 98 = 48

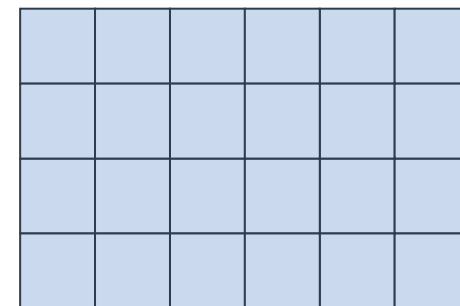
Double $6 \times 4 =$ 49

$11 \times 4 =$

2 marks

Q3

What is the area of this shape?



squares

1 mark

Q1

Tick the boxes that you think are correct.

The length of a banana is about:

2cm	20cm	2mm	2m	20m
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The mass of an apple is about:

2g	20kg	200kg	200g	2kg
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>





A glass of fruit juice is about:

2ml	2l	2,000ml	150ml	20l
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

2 marks

Q2

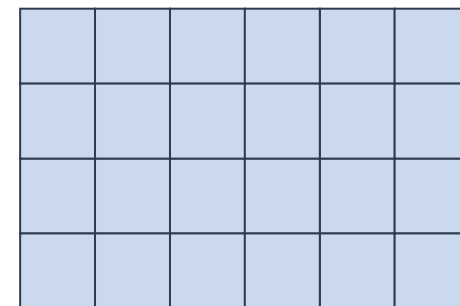
Match these questions to their answers.
More than one question may have the same answer.

$8 \times 6 =$		44
Half of 98 =		48
Double $6 \times 4 =$		49
$11 \times 4 =$		44

2 marks

Q3

What is the area of this shape?



24 squares

1 mark

	Requirement	Mark	Additional guidance
Q1	<p>Award TWO marks for all three values correct.</p> <p>20cm</p> <p>200g</p> <p>150ml</p> <p>Award ONE mark for two values correct.</p>	2	
Q2	<p>8 × 6 =</p> <p>Half of 98 =</p> <p>Double 6 × 4 =</p> <p>11 × 4 =</p> <p>Award TWO marks for all four correctly matched.</p> <p>Award ONE mark for two correctly matched.</p>	2	
Q3	24	1	

Q1

Write in the missing digit to make this calculation correct.

$$5 \boxed{} \times 8 = 456$$

1 mark

Q2

Eden has saved thirty-three 10p coins and six 20p coins.

How much money has Eden saved?

£

1 mark

Q3

Add <, = or > to the boxes below to make these statements correct.

$$88,843 \boxed{} 88,894$$

$$74,321 \boxed{} 9,832$$

$$99,976 \boxed{} 99,876$$

2 marks

Q1

Write in the missing digit to make this calculation correct.

$$5 \boxed{7} \times 8 = 456$$

1 mark

Q2

Eden has saved thirty-three 10p coins and six 20p coins.

How much money has Eden saved?

£ **4.50**

1 mark

Q3

Add <, = or > to the boxes below to make these statements correct.

$$88,843 \boxed{<} 88,894$$

$$74,321 \boxed{>} 9,832$$

$$99,976 \boxed{>} 99,876$$

2 marks

	Requirement	Mark	Additional guidance
Q1	7	1	
Q2	£4.50	1	
Q3	<p>Award TWO marks for all three symbols added correctly.</p> <p>$88,843 < 88,894$</p> <p>$74,321 > 9,832$</p> <p>$99,976 > 99,876$</p> <p>Award ONE mark for two symbols added correctly.</p>	2	

Q1 The total of Noah and Eden's numbers is 980.

Eden's number is 30 more than Noah's number.

What are Eden and Noah's numbers?

Noah's number =

Eden's number =

2 marks

Q2 Write the numbers in the boxes to make this calculation correct.

$$60 - \boxed{} = \boxed{} + 20$$

1 mark

Q3 Place these numbers in order, starting with the largest.

99,009 899 8,799 8,801 98,999

Largest

1 mark

Q1 The total of Noah and Eden's numbers is 980.

Eden's number is 30 more than Noah's number.

What are Eden and Noah's numbers?

Noah's number =

Eden's number =

2 marks

Q2 Write the numbers in the boxes to make this calculation correct.

$$60 - \boxed{20} = \boxed{20} + 20$$

1 mark

Q3 Place these numbers in order, starting with the largest.

99,009 899 8,799 8,801 98,999

Largest

1 mark

	Requirement	Mark	Additional guidance
Q1	<p>Award TWO marks for the correct answers:</p> <p>Noah's number is 475.</p> <p>Eden's number is 505.</p> <p>Award ONE mark for evidence of an appropriate method.</p> <p>$980 \div 2 = 490$</p> <p>$30 \div 2 = 15$</p> <p>$490 + 15 = \text{wrong answer}$</p> <p>$490 - 15 = \text{wrong answer}$</p>	2	
Q2	<p>Any two numbers that total 40.</p> <p>For example,</p> <p>$60 - 20 = 20 + 20$</p> <p>OR</p> <p>$60 - 10 = 30 + 20.$</p>	1	
Q3	<p>99,009 98,999 8,801 8,799 899</p>	1	

What are examiners looking for?**Q1**

The total of Noah and Eden's numbers is 980.

Eden's number is 30 more than Noah's number.

What are Eden and Noah's numbers?

Noah's number =

475

Eden's number =

505

2 marks

Why are we asking this question?

This question is designed to assess children's ability to solve problems mentally (in this case, involving addition and subtraction).

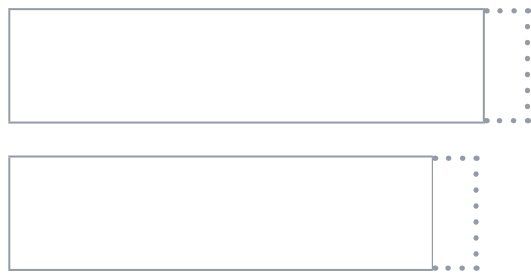
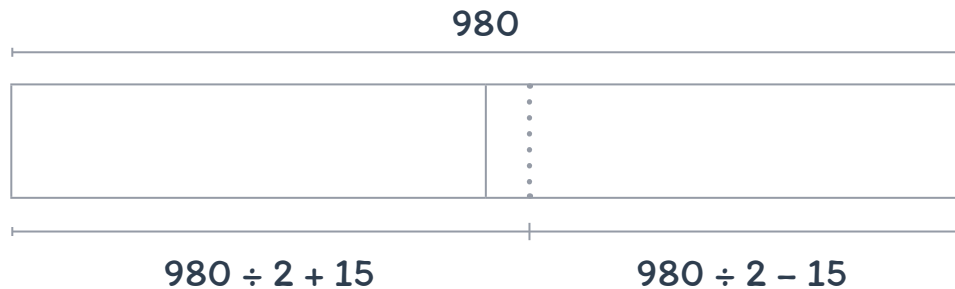
What common errors do we expect to see?

Some children may use a strategy of dividing 980 into half, then subtracting 30 from one of those halves (Noah) and then adding it to the other (Eden). Obviously, this means that the difference between the two numbers is 60, not 30. It may be difficult for children to recognise that they need to subtract 15 instead as the number 15 does not feature in the problem at all.

How to encourage children to solve this question

The key to solving this problem is for children to understand the effect of taking an amount from one person’s total and adding it to another person’s total. The difference is double the amount as – not only has person A’s total decreased by that amount, but person B’s total has increased by the same amount. This can be illustrated in a bar model and children may find it helpful to sketch the problem in this way:

If children find it difficult to visualise these bar models, encourage them to replace the numbers for simpler ones so that they can grasp the concept: “If you split 20 counters between two people equally, how many will they both have? If you then alter the amounts so that they have a difference of 2, how many counters will you move from one to the other? How many will both have now?”



Difference =
 $2 \times 15 = 30$

Q1

Fill in the missing digits in this calculation.

$$\begin{array}{r}
 6843 \\
 + 13\boxed{}1 \\
 \hline
 \boxed{}\boxed{}24 \\
 \hline
 \end{array}$$

2 marks

Q2

Here is a doubling sequence.

$$\boxed{} \boxed{} 68 \quad 136 \quad \boxed{} \boxed{}$$

Complete the missing numbers.

2 marks

Q3

Eden has a jug with 1.5l of water in it.

She pours out one glass of 250ml and one glass of 150ml.

How much water is left in the jug? Give your answer in millilitres.

 ml

1 mark

Q1

Fill in the missing digits in this calculation.

$$\begin{array}{r}
 6843 \\
 + 13\boxed{8}1 \\
 \hline
 \boxed{8}\boxed{2}24 \\
 \hline
 \end{array}$$

2 marks

Q2

Here is a doubling sequence.

$$\boxed{17} \quad \boxed{34} \quad 68 \quad 136 \quad \boxed{272} \quad \boxed{544}$$

Complete the missing numbers.

2 marks

Q3

Eden has a jug with 1.5l of water in it.

She pours out one glass of 250ml and one glass of 150ml.

How much water is left in the jug? Give your answer in millilitres.

1,100 ml

1 mark

	Requirement	Mark	Additional guidance
Q1	<p>Award TWO marks for all three digits completed correctly.</p> $ \begin{array}{r} 6 \quad 8 \quad 4 \quad 3 \\ + \quad 1 \quad 3 \quad \boxed{8} \quad 1 \\ \hline \boxed{8} \quad \boxed{2} \quad 2 \quad 4 \\ \hline \end{array} $ <p>Award ONE mark for two digits added correctly.</p>	2	
Q2	<p>Award TWO marks for the complete completion of all four boxes.</p> <p>17 34 68 136 272 544</p> <p>Award ONE mark for completion of all at least two boxes.</p>	2	
Q3	1,100ml	1	

Q1

Complete the boxes below so the calculations are correct.

$$\boxed{} \times 9 = 108$$

$$72 \div \boxed{} = 9$$

1 mark

Q2

This table shows the population of areas of Norfolk.

Settlement	2001
King's Lynn	40,920
Great Yarmouth	34,830
Thetford	22,030
Gorleston-on-Sea	23,200

a

How many more people live in Kings Lynn than Thetford?

people

1 mark

b

How many people live in Gorleston-on-Sea and Great Yarmouth all together?

people

1 mark

Q3

The children at Bawburgh School are collecting money for charity.

Their target is to collect £460. So far, they have collected £65.70.

How much more money do they need to reach their target?

£

1 mark

Q1

Complete the boxes below so the calculations are correct.

$$\boxed{12} \times 9 = 108$$

$$72 \div \boxed{8} = 9$$

1 mark

Q2

This table shows the population of areas of Norfolk.

Settlement	2001
King's Lynn	40,920
Great Yarmouth	34,830
Thetford	22,030
Gorleston-on-Sea	23,200

a

How many more people live in Kings Lynn than Thetford?

18,890 people

1 mark

b

How many people live in Gorleston-on-Sea and Great Yarmouth all together?

58,030 people

1 mark

Q3

The children at Bawburgh School are collecting money for charity.

Their target is to collect £460. So far, they have collected £65.70.

How much more money do they need to reach their target?

£ **394.30**

1 mark

	Requirement	Mark	Additional guidance
Q1	$12 \times 9 = 108$ $72 \div 8 = 9$	1	
Q2a	18,890	1	
Q2b	58,030	1	
Q3	£394.30	1	



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Rapid Reasoning


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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