THIRD SPACE LEARNING

Specialist 1-to-1 maths interventions and curriculum resources

Rapid Reasoning

Year 3 | Weeks 13–18

THIRD SPACE LEARNING

Specialist 1-to-1 maths interventions and curriculum resources

Rapid Reasoning

Year 3 | Week 16

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

The following Year 3 objectives are introduced for the first time this week:

- adding and subtracting amounts of money to give change, using both £ and p in practical contexts.

Other measurement questions, which draw upon children's knowledge and understanding from Year 2, are also present this week.

As with previous weeks, other content from Year 3, which the children have met in previous weeks of *Rapid Reasoning*, alongside Year 2 objectives, will also feature this week.

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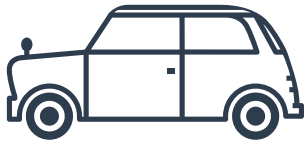
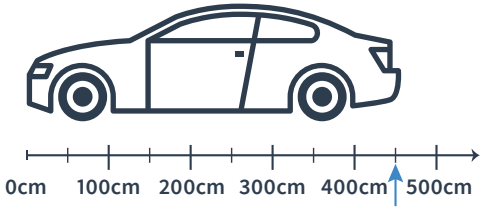
Q1 Here are the lengths of three cars.

A

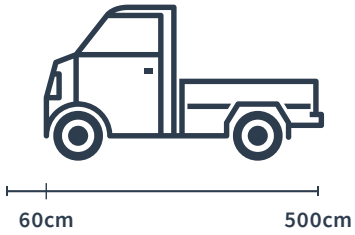


4m 55cm

B



C



Write the letters A to C in order of length, from the shortest car to the longest.

1 mark

Q2 Zac goes to a shop and wants to buy two items.

He says, "I will need to do one type of operation to find out how much money I will have left. I will need to subtract and then subtract again."

Georgia says, "There is another method involving two types of operation!"

Explain the other method.

1 mark

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Q3 This table shows the time it takes different children to get home from school.

Name	Leaves school at	Arrives home at
Mo	3.15pm	3.50pm
Paige	3.30pm	4.10pm
Elliot	3.20pm	3.50pm

Write each child's name in order of how long it takes them to get home, from the shortest to the longest time.

_____

_____

_____

1 mark

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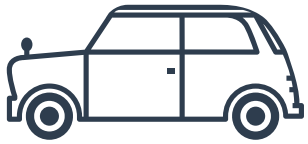
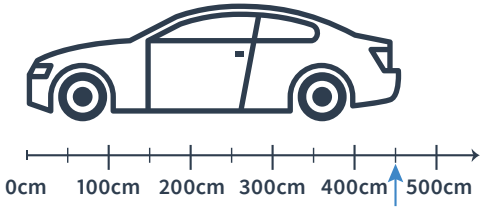
Q1 Here are the lengths of three cars.

A

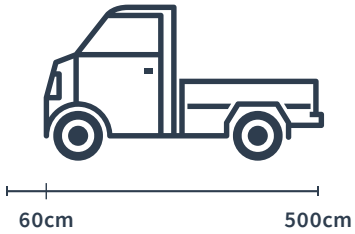


4m 55cm

B



C



Write the letters A to C in order of length, from the shortest car to the longest.

C	B	A

1 mark

Q2 Zac goes to a shop and wants to buy two items.

He says, "I will need to do one type of operation to find out how much money I will have left. I will need to subtract and then subtract again."

Georgia says, "There is another method involving two types of operation!"

Explain the other method.

See mark scheme for example

1 mark

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Q3 This table shows the time it takes different children to get home from school.

Name	Leaves school at	Arrives home at
Mo	3.15pm	3.50pm
Paige	3.30pm	4.10pm
Elliot	3.20pm	3.50pm

Write each child's name in order of how long it takes them to get home, from the shortest to the longest time.

Elliot, Mo, Paige

1 mark

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	Requirement	Mark	Additional guidance
Q1	C B A	1	
Q2	Zac can also add the two amounts first and then subtract one number to find out what he has left.	1	Accept any similar answers that use reasoning to explain the method clearly.
Q3	Elliot, Mo, Paige	1	Accept answers where the intervals are given in order, **NOT** the names: 30 mins, 35 mins, 40 mins

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What are examiners looking for?

Q2 **Zac goes to a shop and wants to buy two items.**

He says, "I will need to do one type of operation to find out how much money I will have left. I will need to subtract and then subtract again."

Georgia says, "There is another method involving two types of operation!"

Explain the other method.

Zac can also add the two amounts first and then subtract one number to find out what he has left.

1 mark

Why are we asking this question?

This question is designed to assess children's ability to add and subtract amounts of money to give change, using £ and p in practical contexts. Specifically, the question encourages children to consider calculation strategies when finding the change from two items.

What common errors do we expect to see?

Some children may not recognise that they can add before subtracting and the effect this has. They understand that addition makes a number increase and cannot understand how adding two numbers before subtracting can have the same effect as subtracting them individually.

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How to encourage children to solve this question

Encourage children to sketch a bar model in order to help visualise the effect of adding before subtracting. They will need to use their own numbers but should be able to see that finding the total of two numbers and then subtracting that total has the same effect as subtracting those two numbers separately.

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Q1 Freya wants to buy a book for £4.50 and a magazine for £3.00.

How much change will she have from a £10 note?

2 marks

Q2

a Write the number 841 in words.

1 mark

b Write the number four hundred and nineteen in digits.

1 mark

Q3 Musa says, "I have just read an amazing fact about bats! They spend 20 hours every day asleep!"

How many hours a day are bats awake?

hours

1 mark

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Q1 Freya wants to buy a book for £4.50 and a magazine for £3.00.

How much change will she have from a £10 note?

£2.50

2 marks

Q2

a Write the number 841 in words.

Eight hundred and forty-one

1 mark

b Write the number four hundred and nineteen in digits.

419

1 mark

Q3 Musa says, "I have just read an amazing fact about bats! They spend 20 hours every day asleep!"

How many hours a day are bats awake?

4 hours

1 mark

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	Requirement	Mark	Additional guidance
Q1	£2.50 Award **TWO** marks for a correct answer. Award **ONE** mark for a correct method, but with one arithmetic error.	2	A correct method could be: £4.50 + £3.00 = £7.50 £10 – £7.50 = £2.50
Q2a	Eight hundred and forty-one	1	
Q2b	419	1	
Q3	4 hours	1	

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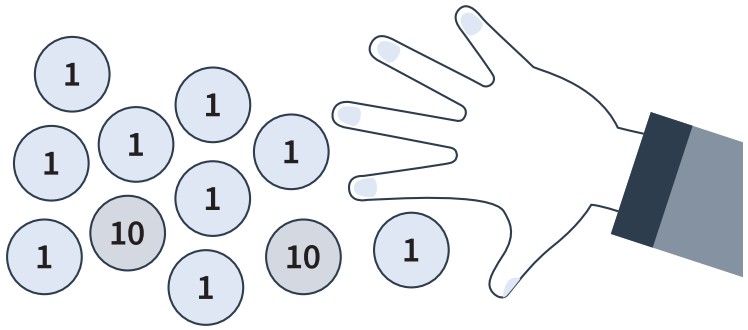
Q1 There are place–value counters worth 86 on the table.

Some of them are covered up.



How many of each counter are covered up?

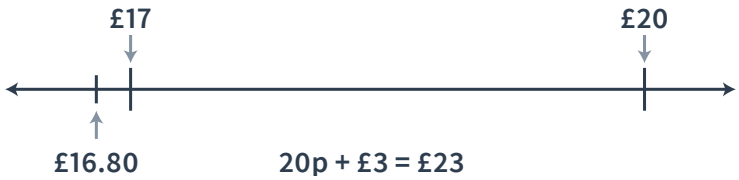
[ ] 10 and [ ] 1

1 mark

Q2 Josh has a £20 note.

He wants to buy a sweatshirt for £16.80.

He draws a number line to work out the change he should be given.



Has Josh worked out his change correctly?
Explain your answer.

1 mark

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Q3 This pictogram shows the number of points four groups score in a class quiz.

	Score
Group 1	●●●●●●
Group 2	●●●●●◖
Group 3	●●●●●●◖
Group 4	●●●●

● = 10 points

a How many more points did Group 3 score than Group 4?

_____

_____

1 mark

b What is the total number of points scored?

_____

_____

1 mark

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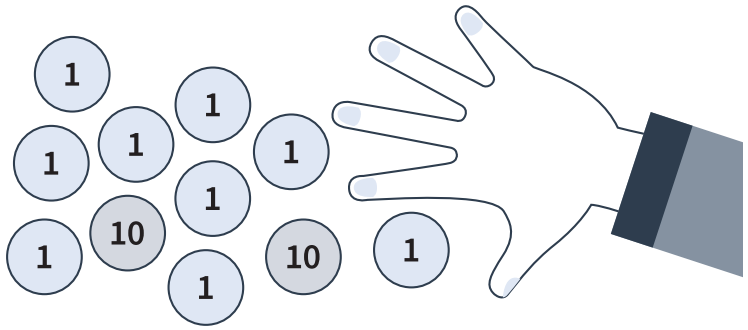
Q1 There are place–value counters worth 86 on the table.

Some of them are covered up.



How many of each counter are covered up?

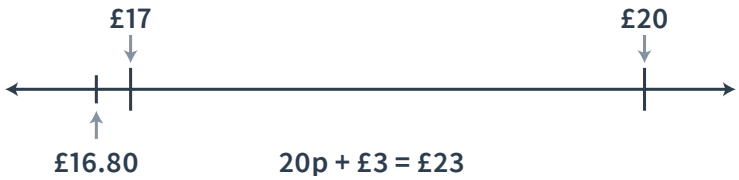
5 10 and 7 1

1 mark

Q2 Josh has a £20 note.

He wants to buy a sweatshirt for £16.80.

He draws a number line to work out the change he should be given.



Has Josh worked out his change correctly?
Explain your answer.

No

See mark scheme for example

1 mark

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Q3 This pictogram shows the number of points four groups score in a class quiz.

	Score
Group 1	●●●●●●
Group 2	●●●●●◖
Group 3	●●●●●●◖
Group 4	●●●●

● = 10 points

a How many more points did Group 3 score than Group 4?

25 points

1 mark

b What is the total number of points scored?

220 points

1 mark

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	Requirement	Mark	Additional guidance
Q1	Accept any combination of place–value counters totalling 57. For example: 5 (10) and 7 (1) 4 (10) and 17 (1) and so on.	1	
Q2	No. Josh's number line is correct, but he has not added the two amounts of money correctly. They are both different units, so 20p + £3 = £3.20. Award **ONE** mark for an appropriate explanation as well as the recognition that Josh has not calculated his change correctly.	1	
Q3a	25 points	1	
Q3b	220 points	1	

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Q1 Alisha is buying a birthday cake for her mother.

It costs £5.50 for the cake and another £1.30 to have a message piped on the top.

She pays with a £20 note.

Alisha wants to work out how much change she will get.

Which of these bar models is a way to represent this problem?

1 mark

Q2 Micah has £15.

He wants to spend all his money on football socks and shin pads.

A pack of football socks costs £3 and a pack of shin pads costs £4.

How many packs of football socks and shin pads does he buy?

2 marks

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Q3 Keziah makes a tally chart of all the coins in her pocket.

Coin	Tally
£1	||
50p	|||
10p	𝍸 |
5p	|
2p	𝍸

How much money does Keziah have altogether?

1 mark

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Q1 Alisha is buying a birthday cake for her mother.

It costs £5.50 for the cake and another £1.30 to have a message piped on the top.

She pays with a £20 note.

Alisha wants to work out how much change she will get.

Which of these bar models is a way to represent this problem?

B

1 mark

Q2 Micah has £15.

He wants to spend all his money on football socks and shin pads.

A pack of football socks costs £3 and a pack of shin pads costs £4.

How many packs of football socks and shin pads does he buy?

1 pack of football socks and 3 packs of shin pads

2 marks

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Q3 Keziah makes a tally chart of all the coins in her pocket.

Coin	Tally
£1	||
50p	|||
10p	𝍸 |
5p	|
2p	𝍸

How much money does Keziah have altogether?

£4.25

1 mark

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	Requirement	Mark	Additional guidance
Q1	B	1	
Q2	1 pack of football socks and 3 packs of shin pads Award **TWO** marks for a correct answer. Award **ONE** mark for a correct method with one arithmetic error.	2	A possible method might be: 1 × 3 = 3 3 × 4 = 12 12 + 3 = 15
Q3	£4 and 25p (or £4.25)	1	

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Q1 Year 3 is completing a maths challenge.

They have to complete a calculation using some numbers and try to reach a target of 520.

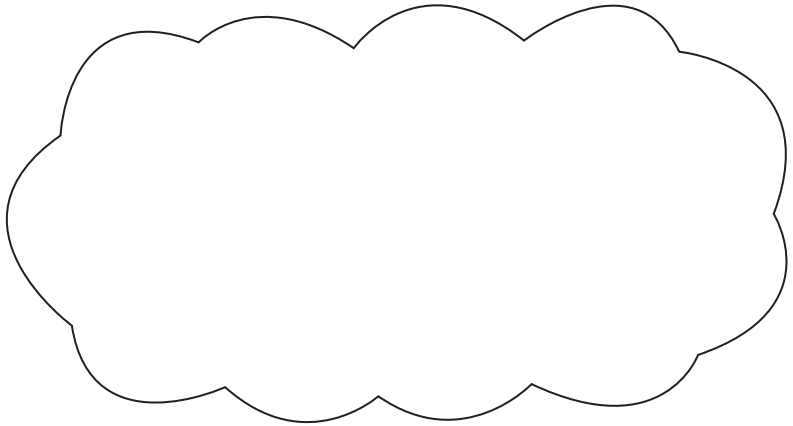
Aziz scores 503.

Brandon scores 548.

Chloe scores 535.

Daniel scores 497.

Whose score is closest to the target number? Explain your answer.



1 mark

Q2 Amal spends £1.36 on a newspaper.

She pays with a £5 note.

The shop owner gives Amal 8 coins in change.

Which coins could they be?

2 marks

Q3 Match each measurement with the unit you would use to measure it.

The length of an envelope	centimetres (cm)
The capacity of a bucket	metres (m)
The length of a football pitch	millilitres (ml)
The capacity of a can of cola	litres (l)

1 mark

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Q1 Year 3 is completing a maths challenge.

They have to complete a calculation using some numbers and try to reach a target of 520.

Aziz scores 503.

Brandon scores 548.

Chloe scores 535.

Daniel scores 497.

Whose score is closest to the target number? Explain your answer.

See mark scheme for example

1 mark

Q2 Amal spends £1.36 on a newspaper.

She pays with a £5 note.

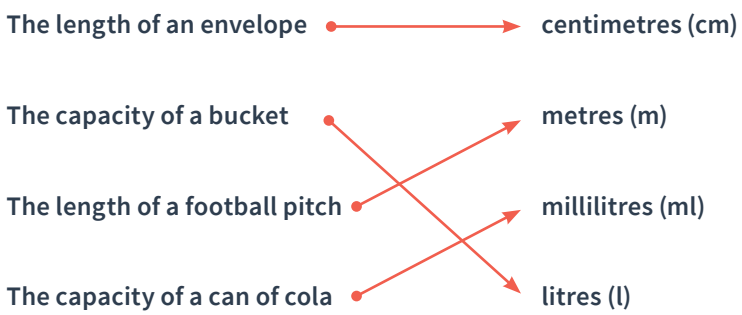
The shop owner gives Amal 8 coins in change.

Which coins could they be?

£3 + 50p + 10p + 2p + 2p = £3.64

2 marks

Q3 Match each measurement with the unit you would use to measure it.



1 mark

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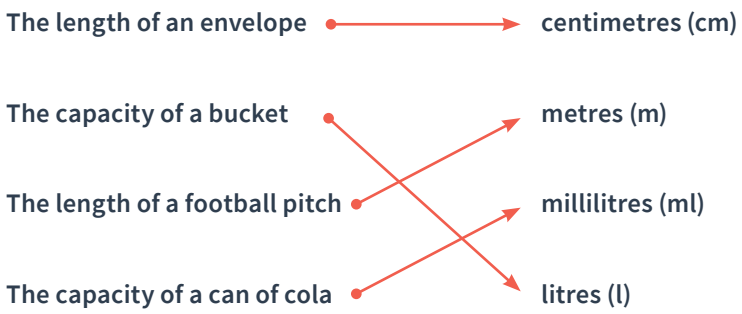
	Requirement	Mark	Additional guidance
Q1	Chloe's score is closest to the target number because 535 is 15 more than 520. Aziz's score is 17 away from 520, so Chloe is closer.	1	
Q2	Accept any 8 coins that total £3.64. Award **TWO** marks for a correct answer. Award **ONE** mark for a correct method with one arithmetic error.	2	A possible method might be: 3 x £1 = £3 1 x 50p = 50p 1 x 10p = 10p 1 x 2p = 2p 2 x 1p = 2p **OR** £3 + 50p + 10p + 2p + 2p = £3.64
Q3		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

Speak to us:

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