Extra Challenge

I can select the correct operation/s to use and solve a problem, checking the answer using estimation.

Solve the following word problems:

1) Rowena buys three toys, each at the same price. He pays with a £10 note and gets £1.45 change. What is the cost of one toy?

   _____

2) 30% of Lyra's number is 84. What is 75% of Lyra's number?

   _____

3) A cupcake costs 25p more than a doughnut. Damon bought a cupcake and three doughnuts for £2.85. How much do a cupcake and a doughnut each cost?

   Cost of a cupcake: _____

   Cost of a doughnut: _____

4) Rudy is half as tall as his mother. Rudy is 135cm shorter than his father. Rudy's father is 205cm tall. How many centimetres tall is Rudy's mother?

   _____

5) Gemma has a bag of blue and green marbles. The bag contains 40 marbles. The probability of choosing a blue marble from the bag is 0.75. How many green marbles does she need to add to the bag to make the probability of choosing a blue marble from the bag 0.25?

   _____

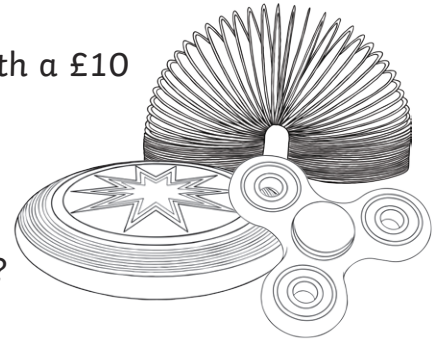6) The answer is 70. What could the multi-step question be?

   _____

7) The answer is 100. What could the multi-step question be?

   _____

8) The answer is 0.45. What could the multi-step question be?

   _____

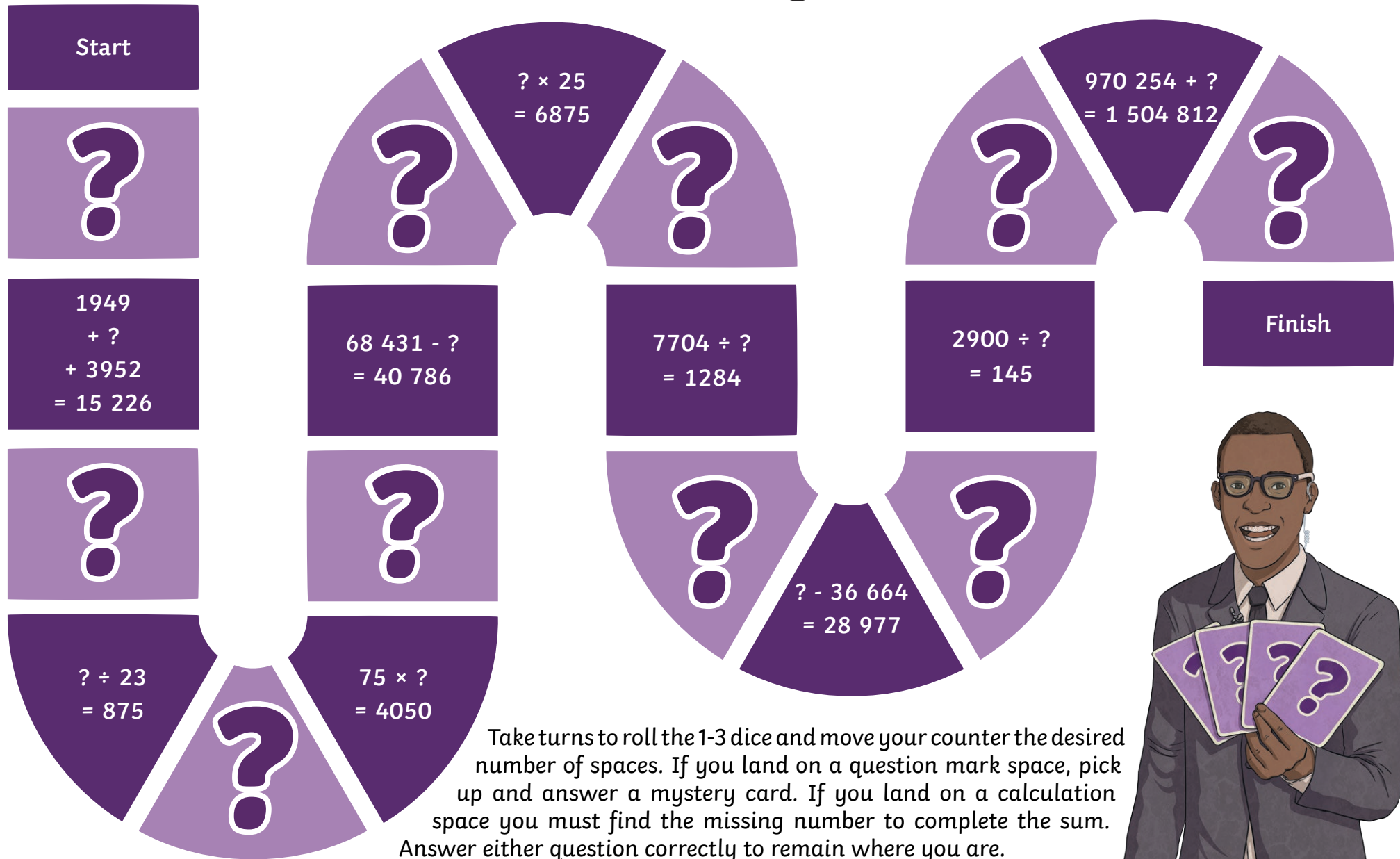REGENT STUDIES
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Extra Challenge **Answers**

Question	Answer
1.	Rowena buys three toys, each at the same price. He pays with a £10 note and gets £1.45 change. What is the cost of one toy?
	£2.85
2.	30% of Lyra's number is 84. What is 75% of Lyra's number?
	210
3.	A cupcake costs 25p more than a doughnut. Damon bought a cupcake and three doughnuts for £2.85. How much do a cupcake and a doughnut each cost?
	Cost of a cupcake: **90p** Cost of a doughnut: **65p**
4.	Rudy is half as tall as his mother. Rudy is 135cm shorter than his father. Rudy's father is 205cm tall. How many centimetres tall is Rudy's mother?
	140cm or 1.4m
5.	Gemma has a bag of blue and green marbles. The bag contains 40 marbles. The probability of choosing a blue marble from the bag is 0.75. How many green marbles does she need to add to the bag to make the probability of choosing a blue marble from the bag 0.25?
	80
6.	The answer is 70. What could the multi-step question be?
	Various answers.
7.	The answer is 100. What could the multi-step question be?
	Various answers.
8.	The answer is 0.45. What could the multi-step question be?
	Various answers.

Problem Solving Game

Start

?

1949
+ ?
+ 3952
= 15 226

?

? ÷ 23
= 875

?

75 × ?
= 4050

?

? × 25
= 6875

?

68 431 - ?
= 40 786

?

7704 ÷ ?
= 1284

?

? - 36 664
= 28 977

?

970 254 + ?
= 1 504 812

?

2900 ÷ ?
= 145

?

Finish

Take turns to roll the 1-3 dice and move your counter the desired number of spaces. If you land on a question mark space, pick up and answer a mystery card. If you land on a calculation space you must find the missing number to complete the sum. Answer either question correctly to remain where you are.

A pack of coloured card has 175 sheets. 18 children each take eight sheets.

How many sheets of coloured card are left in the packet?

Stefan bakes cupcakes and sells them in bags. He uses this formula to work how much to charge for one bag of cupcakes.

Cost = number of cupcakes × 32p + 17p for the bag.

How much will a bag of 24 cupcakes cost?

Cost = number of cupcakes × 32p + 17p for the bag.

Emily buys a bag of cupcakes for £4.97.

Use the formula to calculate how many cupcakes are in the bag.

Large boxes of doughnuts cost £5.50 each.

Small boxes of doughnuts cost £2.80 each.

Five children together buy one large box of doughnuts and two small boxes of doughnuts. They share the cost equally.

How much does each child pay?

At the weekend, Sophie read $\frac{3}{5}$ of her book.

On Monday, she read the other 50 pages to finish the book.

How many pages are there in Sophie's book?

The mass of a 2p coin is 8.5g.

The mass of a 1p coin is half the mass of a 2p coin.

What is the mass of three 2p coins and five 1p coins altogether?

A bag of five tangerine costs £1.20. A bag of four lemons costs £2.40.

How much more does one lemon cost than one tangerine?

The area of a rugby pitch is 5945 square metres.

A football pitch measure 110 metres long and 78 metres wide.

How much larger is the area of the football pitch than the area of a rugby pitch?

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40% of the children in a sports club play badminton.

25% of the children who play badminton also play squash.

There are 11 children in the club who play both badminton and squash.

How many children are there in the sports club altogether?

1kg of grapes costs £4.80. Trudy buys 600 grams of grapes. She pays with a £10 note.

How much change will she receive?

Rueben has some photographs printed.

The cost is £1.50 for postage and 15p for each print.

The total cost for Rueben is £3.90.

How many photographs does he have printed?

A shop makes 115 sandwiches. All the sandwiches are either chicken or ham. Some of the sandwiches also have mayonnaise with the chicken or ham.
40 sandwiches have chicken with mayonnaise.
20 sandwiches have ham without mayonnaise.
85 sandwiches have mayonnaise.

How many sandwiches have chicken without mayonnaise?

There are 37 children in a queue, including Harley. He says,

'There are twice are many children in the front of me as there are behind me.'

How many children are in front of Harley?

Baseball cap: £5.85

Woolly hat: £7.80

Henrik wants to buy two baseball caps and a woolly hat. He pays with a £20 note.

How much change does he receive?

A shop sells fruit. Rufus buys two apples and three pears. He pays £4.60.

Isla buys two apples and one pear. She pays £3.80.

How much does one pear cost?

Problem Solving Game **Answers**

Question	Answer
A pack of coloured card has 175 sheets. 18 children each take eight sheets. How many sheets of coloured card are left in the packet?	
	31
Stefan bakes cupcakes and sells them in bags. He uses this formula to work how much to charge for one bag of cupcakes. Cost = number of cupcakes × 32p + 17p for the bag How much will a bag of 24 cupcakes cost?	
	£7.85
Cost = number of cupcakes × 32p + 17p for the bag Emily buys a bag of cupcakes for £4.97. Use the formula to calculate how many cupcakes are in the bag.	
	15
Large boxes of doughnuts cost £5.50 each. Small boxes of doughnuts cost £2.80 each. Five children together buy one large box of doughnuts and two small boxes of doughnuts. They share the cost equally. How much does each child pay?	
	£2.22

At the weekend, Sophie read $\frac{3}{5}$ of her book. On Monday, she read the other 50 pages to finish the book. How many pages are there in Sophie's book?	
	125
The mass of a 2p coin is 8.5g. The mass of a 1p coin is half the mass of a 2p coin. What is the mass of three 2p coins and five 1p coins altogether?	
	46.75g
A bag of five tangerine costs £1.20. A bag of four lemons costs £2.40. How much more does one lemon cost than one tangerine?	
	36p
The area of a rugby pitch is 5945 square metres. A football pitch measures 110 metres long and 78 metres wide. How much larger is the area of the football pitch than the area of a rugby pitch?	
	2635 square metres
40% of the children in a sports club play badminton. 25% of the children who play badminton also play squash. There are 11 children in the club who play both badminton and squash. How many children are there in the sports club altogether?	
	110

Problem Solving Game **Answers**

1kg of grapes costs £4.80. Trudy buys 600 grams of grapes. She pays with a £10 note. How much change will she receive?	
	£7.12

Rueben has some photographs printed. The cost is £1.50 for postage and 15p for each print. The total cost for Rueben is £3.90. How many photographs does he have printed?	
	16

A shop makes 115 sandwiches. All the sandwiches are either chicken or ham. Some of the sandwiches also have mayonnaise with the chicken or ham. 40 sandwiches have chicken with mayonnaise. 20 sandwiches have ham without mayonnaise. 85 sandwiches have mayonnaise. How many sandwiches have chicken without mayonnaise?	
	10

There are 37 children in a queue, including Harley. He says, 'There are twice are many children in the front of me as there are behind me.' How many children are in front of Harley?	
	24

Baseball cap: £5.85 Woolly hat: £7.80 Henrik wants to buy two baseball caps and a woolly hat. He pays with a £20 note. How much change does he receive?	
	50p

A shop sells fruit. Rufus buys two apples and three pears. He pays £4.60. Isla buys two apples and one pear. She pays £3.80. How much does one pear cost?	
	40p

Calculation space answers:	
	$1949 + \mathbf{9325} + 3952 = 15\ 226$
	$\mathbf{20\ 125} \div 23 = 875$
	$75 \times \mathbf{54} = 4050$
	$68\ 431 - \mathbf{27\ 645} = 40\ 786$
	$\mathbf{275} \times 25 = 6875$
	$7704 \div \mathbf{6} = 1284$
	$\mathbf{65\ 641} - 36\ 664 = 28\ 977$
	$2900 \div \mathbf{20} = 145$
	$970\ 254 + \mathbf{534\ 558} = 1\ 504\ 812$

Start	A pack of coloured card has 175 sheets. 18 children each take eight sheets. How many sheets of coloured card are left in the packet?

31	Stefan bakes cupcakes and sells them in bags. He uses this formula to work how much to charge for one bag of cupcakes. Cost = number of cupcakes × 32p + 17p for the bag. How much will a bag of 24 cupcakes cost?

£7.85	Cost = number of cupcakes × 32p + 17p for the bag. Emily buys a bag of cupcakes for £4.97. Use the formula to calculate how many cupcakes are in the bag.

15	Large boxes of doughnuts cost £5.50. Small boxes of doughnuts cost £2.80. Five children together buy one large box of doughnuts and two small boxes of doughnuts. They share the cost equally. How much does each child pay?

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£2.22	At the weekend, Sophie read $\frac{3}{5}$ of her book. On Monday, she read the other 50 pages to finish the book. How many pages are there in Sophie's book?
125	The mass of a 2p coin is 8.5g. The mass of a 1p coin is half the mass of a 2p coin. What is the mass of three 2p coins and five 1p coins altogether?
46.75g	A bag of five tangerine costs £1.20. A bag of four lemons costs £2.40. How much more does one lemon cost than one tangerine?
36p	The area of a rugby pitch is 5945 square metres. A football pitch measures 110 metres long and 78 metres wide. How much larger is the area of the football pitch than the area of a rugby pitch?

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2635 square metres	40% of the children in a sports club play badminton. 25% of the children who play badminton also play squash. There are 11 children in the club who play both badminton and squash. How many children are there in the sports club altogether?
110	1kg of grapes costs £4.80. Trudy buys 600 grams of grapes. She pays with a £10 note. How much change will she receive?
£7.12	Rueben has some photographs printed. The cost is £1.50 for postage and 15p for each print. The total cost for Rueben is £3.90. How many photographs does he have printed?
16	A shop makes 115 sandwiches. All the sandwiches are either chicken or ham. Some of the sandwiches also have mayonnaise with the chicken or ham. 40 sandwiches have chicken with mayonnaise. 20 sandwiches have ham without mayonnaise. 85 sandwiches have mayonnaise. How many sandwiches have chicken without mayonnaise?

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10	There are 37 children in a queue, including Harley. He says, 'There are twice are many children in the front of me as there are behind me.' How many children are in front of Harley?

24	Baseball cap: £5.85 Woolly hat: £7.80 Henrik wants to buy two baseball caps and a woolly hat. He pays with a £20 note. How much change does he receive?

50p	A shop sells fruit. Rufus buys two apples and three pears. He pays £4.60. Isla buys two apples and one pear. She pays £3.80. How much does one pear cost?

40p	Finish

Problem Solving Loop Cards **Answers**

Question	Answer
A pack of coloured card has 175 sheets. 18 children each take eight sheets. How many sheets of coloured card are left in the packet?	31
Stefan bakes cupcakes and sells them in bags. He uses this formula to work how much to charge for one bag of cupcakes. Cost = number of cupcakes × 32p + 17p for the bag How much will a bag of 24 cupcakes cost?	£7.85
Cost = number of cupcakes × 32p + 17p for the bag Emily buys a bag of cupcakes for £4.97. Use the formula to calculate how many cupcakes are in the bag.	15
Large boxes of doughnuts cost £5.50 each. Small boxes of doughnuts cost £2.80 each. Five children together buy one large box of doughnuts and two small boxes of doughnuts. They share the cost equally. How much does each child pay?	£2.22
At the weekend, Sophie read $\frac{3}{5}$ of her book. On Monday, she read the other 50 pages to finish the book. How many pages are there in Sophie's book?	125
The mass of a 2p coin is 8.5g. The mass of a 1p coin is half the mass of a 2p coin. What is the mass of three 2p coins and five 1p coins altogether?	46.75g
A bag of five tangerine costs £1.20. A bag of four lemons costs £2.40. How much more does one lemon cost than one tangerine?	36p
The area of a rugby pitch is 5945 square metres. A football pitch measures 110 metres long and 78 metres wide. How much larger is the area of the football pitch than the area of a rugby pitch?	2635 square metres
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1kg of grapes costs £4.80. Trudy buys 600 grams of grapes. She pays with a £10 note. How much change will she receive?	£7.12
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A shop makes 115 sandwiches. All the sandwiches are either chicken or ham. Some of the sandwiches also have mayonnaise with the chicken or ham. 40 sandwiches have chicken with mayonnaise. 20 sandwiches have ham without mayonnaise. 85 sandwiches have mayonnaise. How many sandwiches have chicken without mayonnaise?	10
There are 37 children in a queue, including Harley. He says, 'There are twice are many children in the front of me as there are behind me.' How many children are in front of Harley?	24
Baseball cap: £5.85 Woolly hat: £7.80 Henrik wants to buy two baseball caps and a woolly hat. He pays with a £20 note. How much change does he receive?	50p
A shop sells fruit. Rufus buys two apples and three pears. He pays £4.60. Isla buys two apples and one pear. She pays £3.80. How much does one pear cost?	40p

Problem Solving Score Board

I can select the correct operation/s to use and solve a problem, checking the answer using estimation.

If you get the question correct, add the question's answer to your score board. The player with the highest score board total at the end of the game wins.

Tip: You may wish to add your score as you play the game.

Name:
Score Board Total:

Read

Read the question. What is the important information?

Understand

Understand the question. What do you need to find out?

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Choose

Choose the correct method of calculation and operation(s).

Solve

Solve the problem. Make sure you follow the steps.

Answer

Answer the question. What were you meant to find out?

Check

Check your answer. Use the inverse to check your working out.

Target Whole Number Board

13	56	18	33	31
45	23	6	12	14
57	19	4	17	15

Target Whole Number Board

13	56	18	33	31
45	23	6	12	14
57	19	4	17	15