

Notes for Teachers

Differentiation for Maths Mystery Games

The Maths Mystery Games are meant to be a fun way to work on different maths skills whilst using them in real-life situations with the added bonus of catching a criminal and solving a crime!

The games can be done clue by clue over a number of days/lessons or as a whole lesson at the end of a week or unit.

The games are meant to bring a class together and in preparation for SATs tests, all children work on the same game. However, differentiation can be done in a number of ways:

- Buddying up HA/LA and other mixed ability children, encouraging them to work as a team listening to each other and HA children taking on mentoring roles.. HA could even be team leaders in groups also responsible for making sure everyone is included.
- Letting children use the UKS2 Maths Hint Revision Cards to work with during the game. [LKS2 Maths Hint Revision Cards](#)
- Having some children work with an adult.
- Letting some children use calculators.
- Working together as a class and giving different children or table groups different parts to work on and pooling ideas and working through it together.
- There are also LKS2 maths mystery games available if you prefer lower differentiation, bearing in mind that the subject matter and clues will not be the same.
- You can also edit the mystery games if you feel you want specific differentiation for your class.
- Starters: There will also be your own reminders of work you have done in class with maybe a reminder on the board of specific areas such as making common denominators or a mental starter that recaps on certain skills.

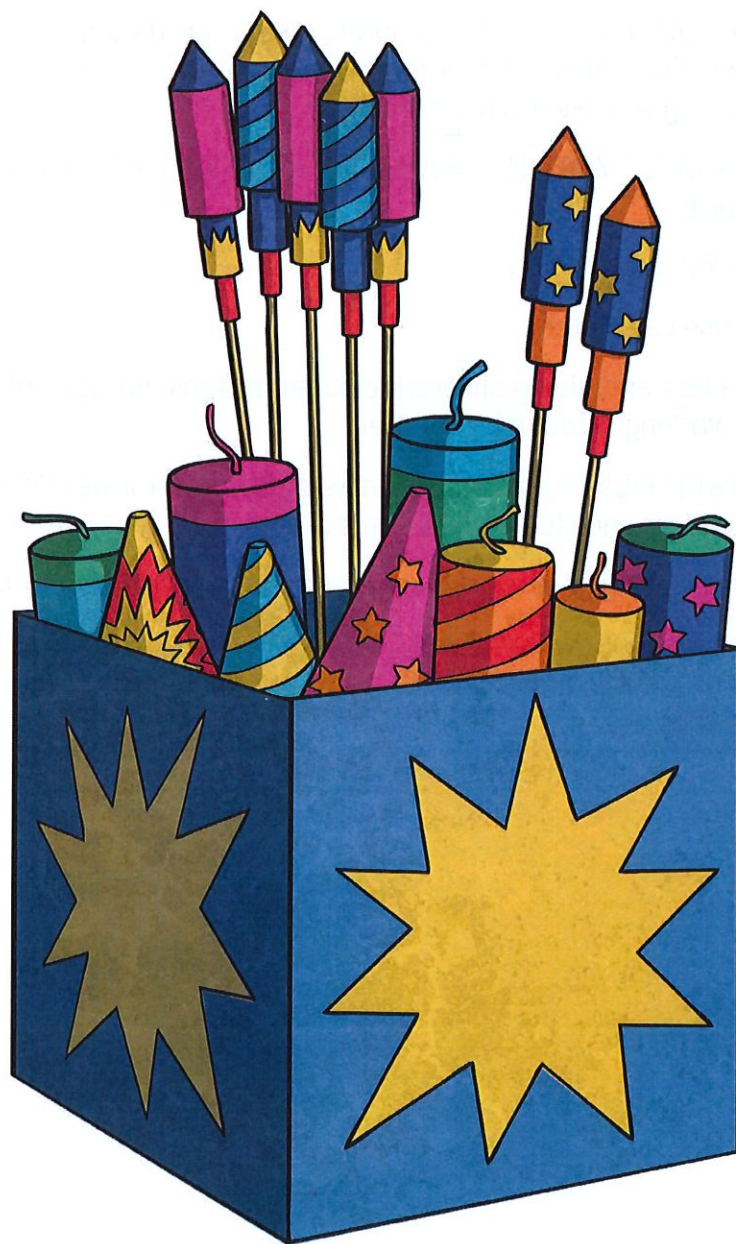
The Mystery of the Bonfire Banger Bandit

The townsfolk of Guido Town always look forward to the annual Square Table bonfire party on the 5th November. Scarves and gloves have been found in the back of cupboards, sparklers are at the ready, feet have been squeezed into musty wellies and everyone is ready to have a jolly good time.

As the crowd grows on the local recreation ground, the organisers of the event begin to panic. Someone has stolen all the hotdogs due to be sold at the bonfire!

Who would do such a terrible thing? Whoever heard of a bonfire party without bangers?

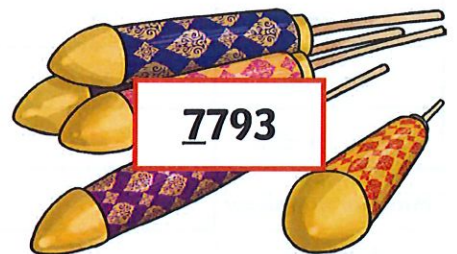
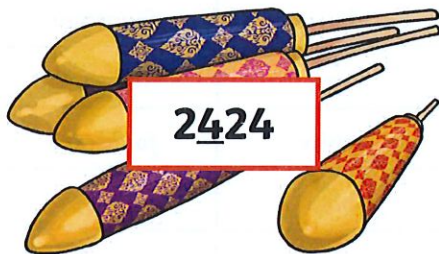
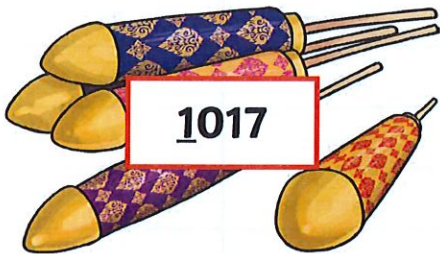
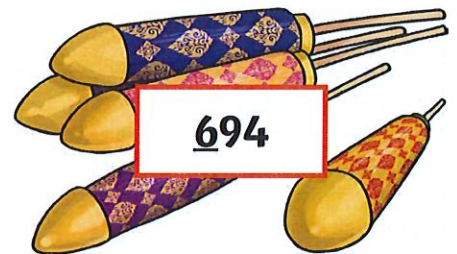
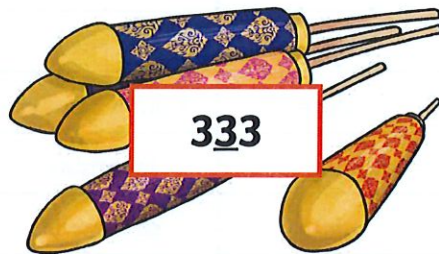
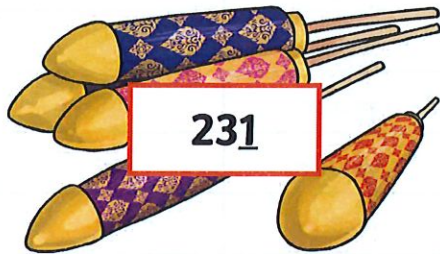
Your task is to solve the clues and use the descriptions of the suspects to uncover the bonfire banger bandit!



Name	Gender	Colour of Hat	Favourite Firework	Type of Footwear	Age
Andy Toffee-Apple	M	black	Roman candles	wellies	26
Bridie Bonfire	F	blue	rockets	wellies	47
Catherine Crackle	F	red	star shells	trainers	40
Denzel Drake	M	white	fountains	walking shoes	58
Emma Explode	F	red	star shells	wellies	19
Francine Fawkes	F	white	Roman candles	pumps	48
Guy Gunpowder	M	blue	fountains	wellies	25
Hamish Hotdog	M	white	star shells	wellies	37
Isobel Ignite	F	black	star shells	trainers	15
Jack James	M	blue	fountains	wellies	26
Kim King	M	red	star shells	pumps	26
Leroy London	M	white	fountains	pumps	47
Mia Marshmallow	F	blue	rockets	trainers	23
Narinder November	M	black	star shells	walking shoes	47
Nina Noisy	F	red	Roman candles	wellies	33
Pippa Plot	F	white	rockets	trainers	16
Pete Parkin	M	blue	star shells	wellies	26
Rhys Rocket	M	white	fountains	wellies	26
Sana Sparkler	F	black	Roman candles	trainers	38
Terry Treason	M	red	rockets	walking shoes	41
Ting Toffee	F	blue	fountains	wellies	19
Wilma Wheel	F	white	Roman candles	trainers	32
Walt Whizz	M	white	star shells	walking shoes	44
Zayan Zoom	M	black	fountains	wellies	32
Zena Zap	F	white	rockets	wellies	41
Amina Amazed	F	red	star shells	pumps	32
Baljeet Bang	M	blue	Roman candles	wellies	25
Carrie Catesby	F	blue	Roman candles	wellies	32
Dave Destroy	M	black	rockets	trainers	29
Fiona Fizz	F	red	fountains	walking shoes	22

Clue 1: Fire Cracker Numbers

Work out the values of the underlined digits in these numbers. Find them in the table below and order the words to form a sentence to solve clue number one.



4 tens trainers	7 thousands wellies	3 tens banger	6 tens walking shoes
6 hundreds was	1 hundred hat	4 hundreds the	1 thousand bandit
7 ones male	1 one wearing	7 hundreds pumps	3 ones female

Answer to clue 1: 1 line

Clue 2: Bonfire Problems

Some children have been working out some bonfire-themed problems but are they all correct?

If there are more correct than incorrect, the suspect is female.

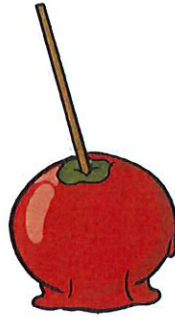
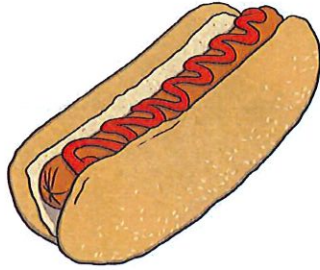
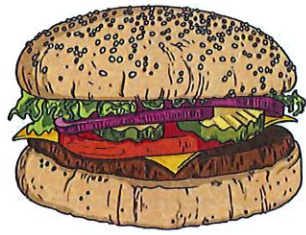
If there are more incorrect answers than correct ones, the suspect is male.

	Correct	Incorrect
Josh says that if there are four boxes each containing twelve fireworks, then there are forty-eight fireworks in total.		
Natalia says that if there are six apples in a packet, she will need five packets to make twenty-four toffee apples.		
Jaydean says that if she sells each bonfire bun for 15p, and she sells 20 buns, she will make £3.50.		
Mackenzie says that if there are eight Roman candles in a box, there will be 24 in three boxes altogether.		
There are five sparklers in one packet. Halima says that there will be thirty sparklers altogether in six packets.		
Piotr says that if one burger costs £1.60, three burgers would cost £4.40.		
A bag of bonfire toffee costs 65p. Ania says that four bags would cost £2.80.		

Answer to clue 2: There are more _____ answers. The suspect is _____.

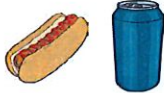
Clue 3: Food Kiosk

Work out the change from £5 when buying these foods at the bonfire kiosk.



Prices	
Hotdog	£1.35
Burger	£2.20
Soup	85p
Can of pop	70p
Toffee apple	25p

Maria bought:



Change from £5 =

Change from £5 =

Ben bought:



Nikita bought:



Change from £5 =

Change from £5 =

Shan bought:



Change from £5 =

Gurvinder bought:



Change from £5 =

Gethin bought:



Kuba bought:



Change from £5 =

£2.10 red	10p blue	£3.60 banger	95p hot dog
90p didn't	20p white	60p the	£3.90 thief
£1.95 hat	£3.10 a	£2 black	£2.95 dropped

Answer to clue 3: _____

Clue 4: Cracking Answers

Mentally add or subtract these numbers.

The answer which occurs the most frequently is the age of the culprit.

$26 + 6 =$

$13 + 13 =$

$50 - 9 =$

$60 - 13 =$

$64 - 32 =$

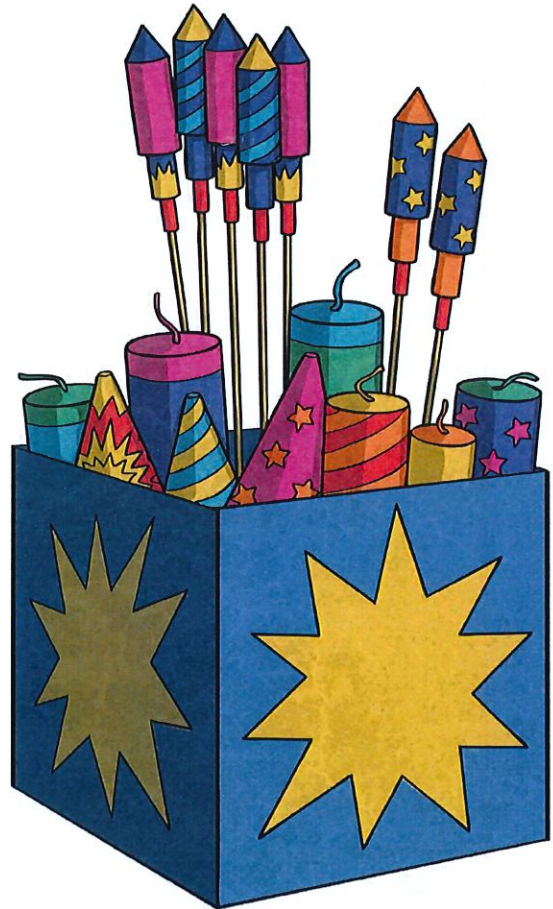
$15 + 11 =$

$20 + 21 =$

$40 - 14 =$

$10 + 16 =$

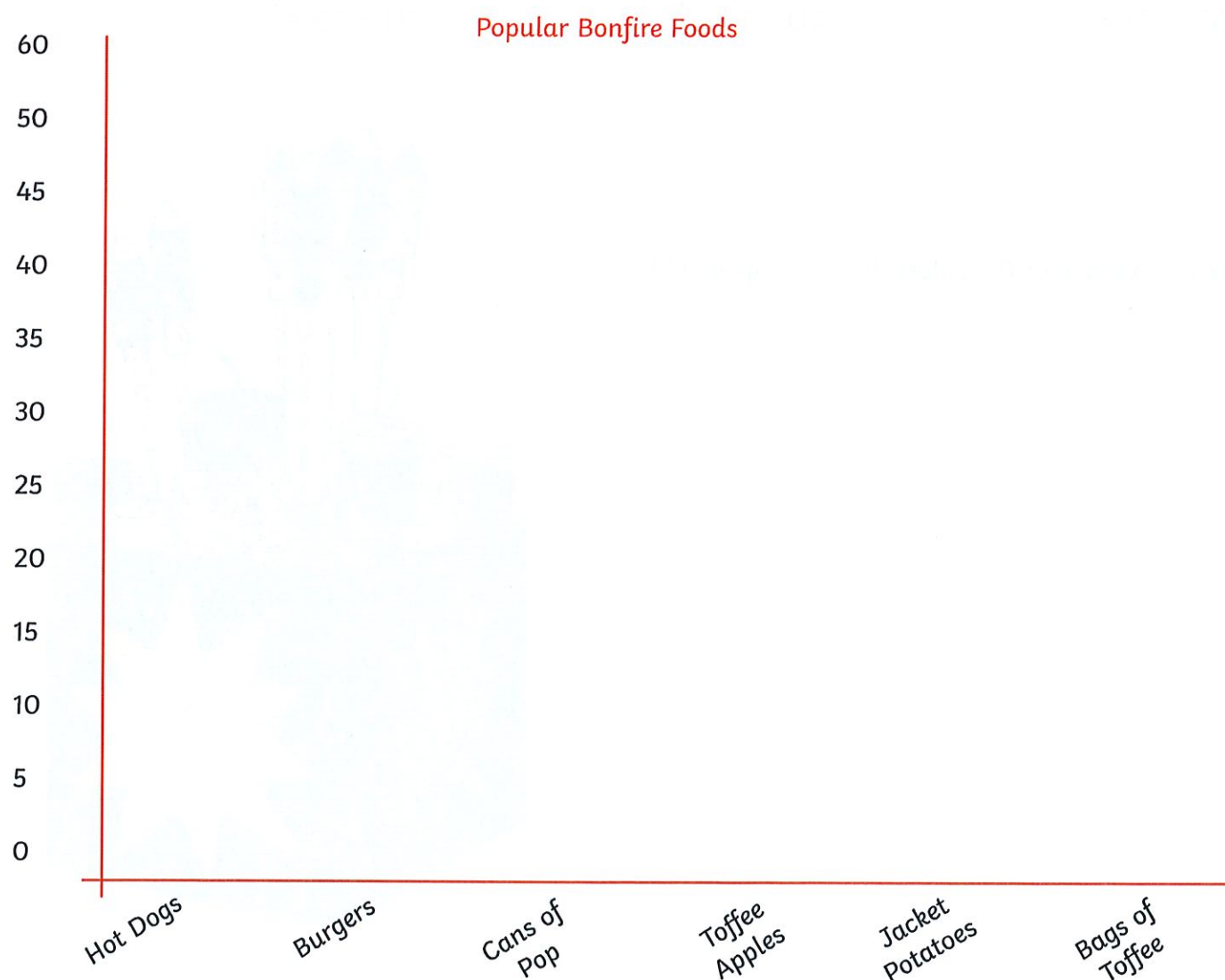
Answer to clue 4: The culprit is _____ years old.



Clue 5: Popular Bonfire Food

Here is some data showing the popularity of food sold at the bonfire party last year. Complete the table and the bar chart and answer the questions. Then find the answers in the table and solve the final clue.

	Tally	Number
Hot Dogs		
Burgers		42
Cans of Pop		
Toffee Apples		25
Jacket Potatoes		37
Bags of Toffee		



1. Look at the most popular item. How many of that item was sold?

2. Look at the least popular item. How many of that item was sold?

3. What is the difference between the most and the least item sold?

4. How many more burgers than toffee apples were sold?

5. How many more hot dogs than bags of toffee were sold?

6. What is the total number of hot food sold?

53 were	79 rockets	38 the
9 culprit's	15 star shells	40 Roman candles
103 fireworks	19 fountains	17 favourite

Answer to clue 5: _____

The hot dog thief of Guido Town is _____!

Answers

Clue 1: Fire Cracker Numbers

4 tens trainers	7 thousands wellies	3 tens banger	6 tens walking shoes
6 hundreds was	1 hundred hat	4 hundreds the	1 thousand bandit
7 ones male	1 one wearing	7 hundreds pumps	3 ones female

Answer to clue 1: The banger bandit was wearing wellies.

Clue 2: Bonfire Problems

	Correct	Incorrect
Josh says that if there are four boxes each containing twelve fireworks, then there are forty-eight fireworks in total.	✓	
Natalia says that if there are six apples in a packet, she will need five packets to make twenty-four toffee apples.		✗
Jaydean says that if she sells each bonfire bun for 15p, and she sells 20 buns, she will make £3.50.		✗
Mackenzie says that if there are eight Roman candles in a box, there will be 24 in three boxes altogether.	✓	
There are five sparklers in one packet. Halima says that there will be thirty sparklers altogether in six packets.	✓	
Piotr says that if one burger costs £1.60, three burgers would cost £4.40.		✗
A bag of bonfire toffee costs 65p. Ania says that four bags would cost £2.80.		✗

Answer to clue 2: There are more incorrect answers. The suspect is male.

Answers

Clue 3: Food Kiosk

£2.10 red	10p blue	£3.60 banger	95p hot dog
90p didn't	20p white	60p the	£3.90 thief
£1.95 hat	£3.10 a	£2 black	£2.95 dropped

Answer to clue 3: The hot dog thief dropped a blue hat.

Clue 4: Cracking Answers

$$26 + 6 = \mathbf{32} \quad 13 + 13 = \mathbf{26} \quad 50 - 9 = \mathbf{41}$$

$$60 - 13 = \mathbf{47} \quad 64 - 32 = \mathbf{32} \quad 15 + 11 = \mathbf{26}$$

$$20 + 21 = \mathbf{41} \quad 40 - 14 = \mathbf{26} \quad 10 + 16 = \mathbf{26}$$

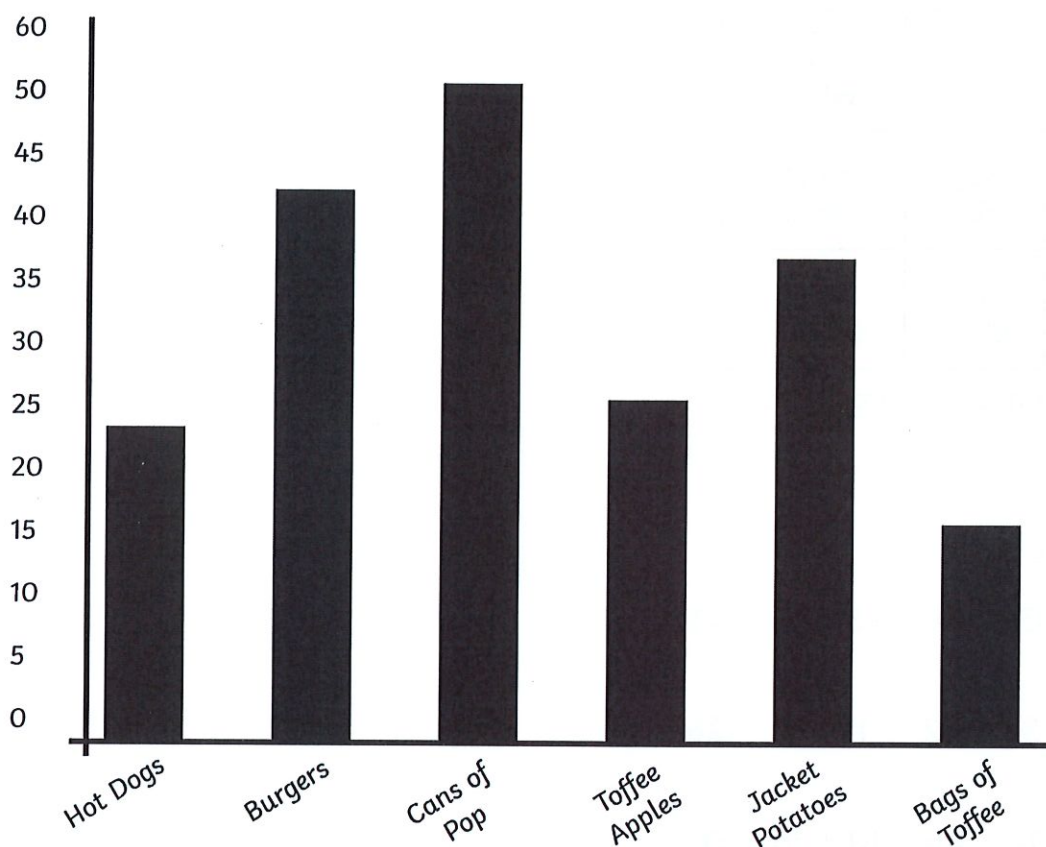
Answer to clue 4: The culprit is 26 years old.

Clue 5: Popular Bonfire Food

	Tally	Number
Hot Dogs		24
Burgers		42
Cans of Pop		53
Toffee Apples		25
Jacket Potatoes		37
Bags of Toffee		15

Answers

Popular Bonfire Foods



53 were	79 rockets	38 the
9 culprit's	15 star shells	40 Roman candles
103 fireworks	19 fountains	17 favourite

Answer to clue 5: The culprit's favourite fireworks were star shells.

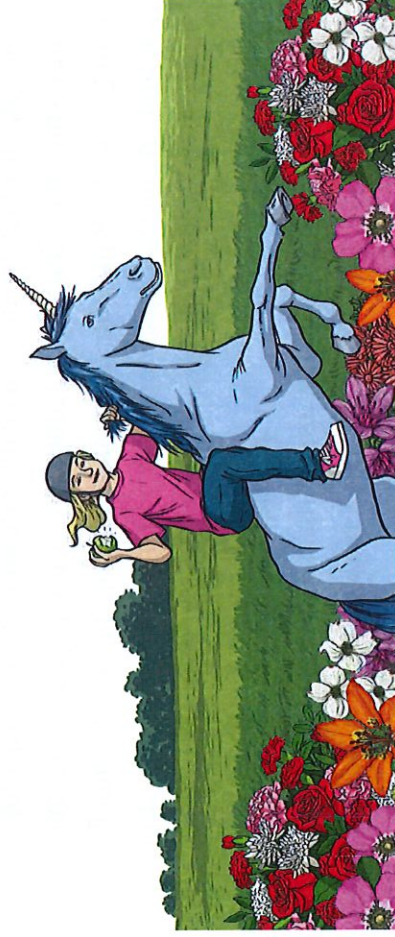
The hot dog thief of Guido Town is Pete Parkin!

Unicorn Valley

10 Without warning, Zaina woke to find herself floating up from
21 her bed towards a dazzling star which had appeared on her
27 ceiling; she was pulled through it.

36 Within seconds, Zaina found herself landing in a dazzling
45 land. She was standing in a supernatural meadow surrounded
54 by mystical wild flowers and towering willow trees. Zaina
63 was awestruck by this enchanting setting, but was most
72 astonished by the majestic unicorns trotting towards her. She
81 gazed around in astonishment. She had always believed that
89 unicorns were real - her brother was clearly wrong.

101 Zaina could hear a voice in her head telling her that she
110 had been chosen to save the enchanted valley. Overhead,
117 ferocious dragons menacingly circled the dreamy wonderland
127 desperately trying to get close enough to attack. How would
132 she be able to help?



Quick Questions



1. What unusual event occurred at the beginning of the story?



2. Find and copy two adjectives which describe the setting.



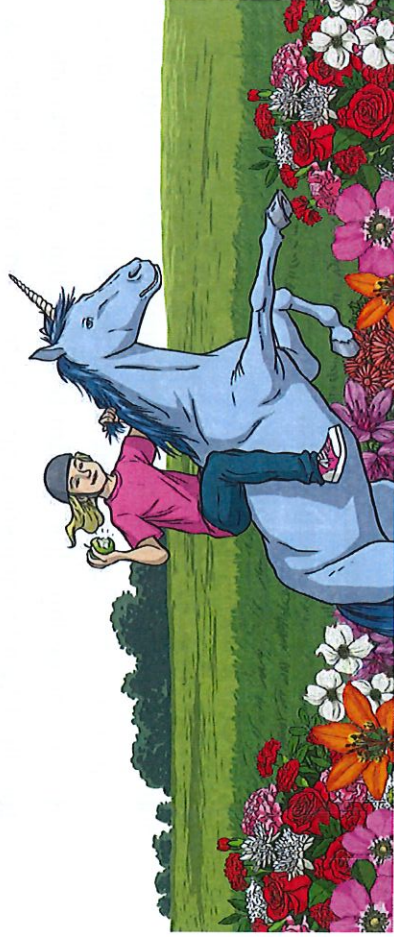
3. What does the word 'astonishment' tell us about the way Zaina is feeling?



4. Will Zaina be able to help the unicorns? Why do you think this?

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Answers



1. What unusual event occurred at the beginning of the story?

Accept: Zaina woke to find herself floating towards a dazzling star on her ceiling and being pulled through it.



2. Find and copy two adjectives which describe the setting.

Accept: dazzling, supernatural, mystical, enchanting and dreamy.



3. What does the word 'astonishment' tell us about the way Zaina is feeling?

Accept a response that shows Zaina couldn't believe what she was seeing, that she was shocked and impressed.



4. Will Zaina be able to help the unicorns? Why do you think this?

Accept any reasonable explanation that links to the text – yes because she had been chosen so must be able to help / no because the dragons were ferocious and ready to attack and she was just a girl.