



The Great Rainbow Crystal Caper

Grade 1 math · Addition, Subtraction, Skip counting, Place value, Missing addends · Reading level grades 1-2

Detective: _____ Date: _____

Someone stole the magical Star Crystal from Sparkle Meadow! Solve the clues to find out which unicorn did it.

1. Solve each math problem. The answer is a number, and the letter beside it is what that number stands for.
2. In the clue boxes, write that letter in every box showing the same number, then read the secret clue.
3. Use each clue to cross suspects off the list. The one suspect left at the end is the culprit!

My answer: the crystal thief is _____

Possible suspects

Cross off a row as each clue rules it out. The one left at the end is the culprit.

NAME	MAGIC GEM	TAIL CHARM	HOOF SPARKLE	MANE COLOR	FAVORITE SNACK
Rainbow	Ruby Star	Golden Bell	Left Hoof Sparkle	Pink Mane	Sugar Cube
Breeze	Sapphire Moon	Golden Bell	Right Hoof Sparkle	Purple Mane	Sugar Cube
Cloudy	Pearl Comet	Silk Tassel	Right Hoof Sparkle	Blue Mane	Sugar Cube
Glimmer	Pearl Comet	Crystal Ring	Left Hoof Sparkle	Purple Mane	Sweet Apples
Skye	Ruby Star	Glitter Bow	Left Hoof Sparkle	Purple Mane	Sugar Cube
Ziggy	Emerald Sun	Golden Bell	Right Hoof Sparkle	Purple Mane	Sugar Cube
Twinkle	Ruby Star	Glitter Bow	Right Hoof Sparkle	Purple Mane	Sugar Cube
Zoe	Pearl Comet	Crystal Ring	Left Hoof Sparkle	Purple Mane	Fresh Clover
Melody	Amber Cloud	Silver Ribbon	Left Hoof Sparkle	Purple Mane	Sugar Cube
Starbeam	Ruby Star	Glitter Bow	Left Hoof Sparkle	Purple Mane	Fresh Clover
Jasmine	Pearl Comet	Golden Bell	Right Hoof Sparkle	Blue Mane	Fresh Clover
Lulu	Pearl Comet	Golden Bell	Left Hoof Sparkle	Pink Mane	Sweet Apples
Honey	Amber Cloud	Silk Tassel	Left Hoof Sparkle	Purple Mane	Sugar Cube
Petal	Amber Cloud	Silver Ribbon	Left Hoof Sparkle	Blue Mane	Fresh Clover
Bubbles	Amber Cloud	Golden Bell	Left Hoof Sparkle	Purple Mane	Sugar Cube
Sunbeam	Sapphire Moon	Silver Ribbon	Right Hoof Sparkle	Pink Mane	Sugar Cube
Barnaby	Sapphire Moon	Crystal Ring	Left Hoof Sparkle	Blue Mane	Fresh Clover
Nova	Pearl Comet	Silk Tassel	Left Hoof Sparkle	Purple Mane	Fresh Clover
Willow	Amber Cloud	Silk Tassel	Left Hoof Sparkle	Purple Mane	Fresh Clover
Dazzle	Ruby Star	Silver Ribbon	Left Hoof Sparkle	Purple Mane	Sugar Cube
Shimmer	Ruby Star	Silk Tassel	Left Hoof Sparkle	Blue Mane	Sugar Cube

CLUE 1 Addition

We gather all the glitter gems found on the path to make our first clue.

Solve each problem, then write its letter in every clue box that shows the same number.

T			T														
19	14	13	19	14	17	13	2	4	17	4	11	6	19	7	15	13	20

			T	T						
8	16	17	19	19	13	18	9	6	3	

$10 + 9 = \square \rightarrow$ T	$11 + 7 = \square \rightarrow$ R	$2 + 1 = \square \rightarrow$ W	
$1 + 1 = \square \rightarrow$ F	$3 + 8 = \square \rightarrow$ N	$5 + 4 = \square \rightarrow$ B	$8 + 8 = \square \rightarrow$ L
$2 + 5 = \square \rightarrow$ U	$7 + 6 = \square \rightarrow$ E	$7 + 10 = \square \rightarrow$ I	$3 + 3 = \square \rightarrow$ O
$9 + 5 = \square \rightarrow$ H	$2 + 6 = \square \rightarrow$ G	$9 + 11 = \square \rightarrow$ A	
$10 + 5 = \square \rightarrow$ S	$2 + 2 = \square \rightarrow$ D		

Scratch space:

CLUE 2

Subtraction

We count how many magic berries are left in the basket to narrow down the suspects.

Solve each problem, then write its letter in every clue box that shows the same number.

W									W								
13	8	1	18	7	4	4	4	15	13	4	6	15	14	10	5	7	4
12	14	11	16	1	2	7	5	7	12	1	2	11	11	12			

$20 - 7 = \square \rightarrow \boxed{W}$

$12 - 1 = \square \rightarrow \boxed{O}$

$8 - 4 = \square \rightarrow \boxed{S}$

$19 - 9 = \square \rightarrow \boxed{K}$

$9 - 3 = \square \rightarrow \boxed{P}$

$19 - 1 = \square \rightarrow \boxed{N}$

$8 - 1 = \square \rightarrow \boxed{E}$

$4 - 2 = \square \rightarrow \boxed{H}$

$8 - 3 = \square \rightarrow \boxed{L}$

$14 - 6 = \square \rightarrow \boxed{I}$

$16 - 1 = \square \rightarrow \boxed{A}$

$20 - 4 = \square \rightarrow \boxed{M}$

$19 - 5 = \square \rightarrow \boxed{R}$

$8 - 7 = \square \rightarrow \boxed{T}$

$16 - 4 = \square \rightarrow \boxed{F}$

Scratch space:

CLUE 3

Skip counting

We count the horseshoe prints by twos along the dusty trail.

Solve each problem, then write its letter in every clue box that shows the same number.

T			T						T						T	
27	50	10	27	50	9	10	26	18	27	55	12	12	10	100	27	55
		T														
10	8	27	8		18	33	65	8	120	15	33	45	10			

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, __, 30, 33 → **T**

Skip-count by 2s. Fill the blank: 2, 4, 6, __, 10, 12 → **A**

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, __, 60, 65 → **O**

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, __, 70, 75 → **G**

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, __, 130, 140 → **R**

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, __, 12, 14 → **E**

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, __, 20, 22 → **S**

Skip-count by 3s. Fill the blank: 3, 6, __, 12, 15 → **I**

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, __, 36, 39 → **U**

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, __, 50, 55 → **B**

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, __, 110, 120 → **D**

Skip-count by 3s. Fill the blank: 3, 6, 9, __, 15, 18 → **P**

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, __, 55, 60 → **H**

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, __, 28, 30 → **F**

Skip-count by 5s. Fill the blank: 5, 10, __, 20, 25 → **C**

Scratch space:

CLUE 4
Place value

We look at the tens and ones on the stable gate code.

Solve each problem, then write its letter in every clue box that shows the same number.

A								A				A				A	
47	23	86	40	23	50	83	57	47	79	83	19	47	36	40	30	47	32
					A												
93	26	86	79	45	47	60	60	19	83	32	63	83	79	83			

What number has 4 tens and 7 ones?

→ **A**

What number has 9 tens and 3 ones?

→ **F**

What number has 3 tens and 0 ones?

→ **W**

What number has 1 ten and 9 ones?

→ **H**

What number has 3 tens and 6 ones?

→ **I**

What number has 6 tens and 0 ones?

→ **T**

What number has 4 tens and 5 ones?

→ **D**

What number has 5 tens and 0 ones?

→ **L**

What number has 7 tens and 9 ones?

→ **N**

What number has 2 tens and 6 ones?

→ **O**

What number has 5 tens and 7 ones?

→ **M**

What number has 3 tens and 2 ones?

→ **S**

What number has 2 tens and 3 ones?

→ **P**

What number has 8 tens and 3 ones?

→ **E**

What number has 6 tens and 3 ones?

→ **C**

What number has 8 tens and 6 ones?

→ **U**

What number has 4 tens and 0 ones?

→ **R**

Scratch space:

CLUE 5**Missing addends - the last clue**

We fill in the missing magic flower to finish the secret code.

First solve each problem. Then find each answer in the numbered list below and cross that sentence out. One sentence will be left - that is exactly what the villain did!

Step 1 - solve these:

$3 + \underline{\quad} = 9$

$10 + \underline{\quad} = 12$

$5 + \underline{\quad} = 15$

$4 + \underline{\quad} = 5$

$5 + \underline{\quad} = 9$

$2 + \underline{\quad} = 5$

$8 + \underline{\quad} = 19$

$2 + \underline{\quad} = 10$

$9 + \underline{\quad} = 18$

$8 + \underline{\quad} = 15$

$3 + \underline{\quad} = 8$

Step 2 - cross out the sentence with each answer:

1. The villain charged the Sapphire Moon, then tied the Silver Ribbon.
2. The villain charged the Ruby Star, then tied the Silver Ribbon.
3. The villain charged the Sapphire Moon, then waved the Silk Tassel.
4. The villain charged the Emerald Sun, then tied the Silver Ribbon.
5. The villain charged the Sapphire Moon, then spun the Crystal Ring.
6. The villain charged the Amber Cloud, then tied the Silver Ribbon.
7. The villain charged the Pearl Comet, then fastened the Glitter Bow.
8. The villain charged the Pearl Comet, then tied the Silver Ribbon.
9. The villain charged the Emerald Sun, then spun the Crystal Ring.
10. The villain charged the Amber Cloud, then shook the Golden Bell.
11. The villain charged the Emerald Sun, then waved the Silk Tassel.
12. The villain charged the Amber Cloud, then waved the Silk Tassel.

Answer Key

The Great Rainbow Crystal Caper

Culprit: Honey

Amber Cloud · Silk Tassel · Left Hoof Sparkle · Purple Mane · Sugar Cube

Trail: Start 21 → Clue 1 18 → Clue 2 13 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Addition): "THE THIEF DID NOT USE A GLITTER BOW"

$10 + 9 = 19$ (T) · $11 + 7 = 18$ (R) · $2 + 1 = 3$ (W) · $1 + 1 = 2$ (F) · $3 + 8 = 11$ (N) · $5 + 4 = 9$ (B) · $8 + 8 = 16$ (L) · $2 + 5 = 7$ (U) · $7 + 6 = 13$ (E) · $7 + 10 = 17$ (I) · $3 + 3 = 6$ (O) · $9 + 5 = 14$ (H) · $2 + 6 = 8$ (G) · $9 + 11 = 20$ (A) · $10 + 5 = 15$ (S) · $2 + 2 = 4$ (D)

Clue 2 (Subtraction): "WITNESS SAW SPARKLES FROM THE LEFT HOOF"

$20 - 7 = 13$ (W) · $12 - 1 = 11$ (O) · $8 - 4 = 4$ (S) · $19 - 9 = 10$ (K) · $9 - 3 = 6$ (P) · $19 - 1 = 18$ (N) · $8 - 1 = 7$ (E) · $4 - 2 = 2$ (H) · $8 - 3 = 5$ (L) · $14 - 6 = 8$ (I) · $16 - 1 = 15$ (A) · $20 - 4 = 16$ (M) · $19 - 5 = 14$ (R) · $8 - 7 = 1$ (T) · $16 - 4 = 12$ (F)

Clue 3 (Skip counting): "THE THIEF STOPPED TO EAT A SUGAR CUBE"

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, __, 30, 33 = 27 (T) · Skip-count by 2s. Fill the blank: 2, 4, 6, __, 10, 12 = 8 (A) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, __, 60, 65 = 55 (O) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, __, 70, 75 = 65 (G) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, __, 130, 140 = 120 (R) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, __, 12, 14 = 10 (E) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, __, 20, 22 = 18 (S) · Skip-count by 3s. Fill the blank: 3, 6, __, 12, 15 = 9 (I) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, __, 36, 39 = 33 (U) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, __, 50, 55 = 45 (B) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, __, 110, 120 = 100 (D) · Skip-count by 3s. Fill the blank: 3, 6, 9, __, 15, 18 = 12 (P) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, __, 55, 60 = 50 (H) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, __, 28, 30 = 26 (F) · Skip-count by 5s. Fill the blank: 5, 10, __, 20, 25 = 15 (C)

Clue 4 (Place value): "A PURPLE MANE HAIR WAS FOUND AT THE SCENE"

What number has 4 tens and 7 ones? = 47 (A) · What number has 9 tens and 3 ones? = 93 (F) · What number has 3 tens and 0 ones? = 30 (W) · What number has 1 ten and 9 ones? = 19 (H) · What number has 3 tens and 6 ones? = 36 (I) · What number has 6 tens and 0 ones? = 60 (T) · What number has 4 tens and 5 ones? = 45 (D) · What number has 5 tens and 0 ones? = 50 (L) · What number has 7 tens and 9 ones? = 79 (N) · What number has 2 tens and 6 ones? = 26 (O) · What number has 5 tens and 7 ones? = 57 (M) · What number has 3 tens and 2 ones? = 32 (S) · What number has 2 tens and 3 ones? = 23 (P) · What number has 8 tens and 3 ones? = 83 (E) · What number has 6 tens and 3 ones? = 63 (C) · What number has 8 tens and 6 ones? = 86 (U) · What number has 4 tens and 0 ones? = 40 (R)

Clue 5 (Missing addends): surviving statement is box 12 → Honey

$3 + \underline{\quad} = 9 = 6$ · $10 + \underline{\quad} = 12 = 2$ · $5 + \underline{\quad} = 15 = 10$ · $4 + \underline{\quad} = 5 = 1$ · $5 + \underline{\quad} = 9 = 4$ · $2 + \underline{\quad} = 5 = 3$ · $8 + \underline{\quad} = 19 = 11$ · $2 + \underline{\quad} = 10 = 8$ · $9 + \underline{\quad} = 18 = 9$ · $8 + \underline{\quad} = 15 = 7$ · $3 + \underline{\quad} = 8 = 5$