



The Great Crystal Cat-astrophe

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

Detective: _____ Date: _____

The Giant Rainbow Crystal is missing from the treehouse! Without it, the magical forest will lose its glow. The Chief Sparkle Maker needs your help. One of the cat-corns took 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 glitter 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 TRICK	SPECIAL GEAR	SECRET HABIT	MANE COLOR	WEAKNESS
Bella	sparkle jump	bubble shield	right pawed	gold mane	shiny bells
Mittens	rainbow blast	bubble shield	right pawed	pink mane	shiny bells
Ziggy	moon purr	cloud float	right pawed	blue mane	shiny bells
Luna	rainbow blast	laser eyes	right pawed	pink mane	shiny bells
Oliver	rainbow blast	jingle bells	left pawed	gold mane	spray water
Sparky	sparkle jump	jingle bells	left pawed	pink mane	shiny bells
Twinkle	rainbow blast	laser eyes	right pawed	gold mane	spray water
Puff	glitter dash	catnip mist	right pawed	pink mane	spray water
Pip	rainbow blast	catnip mist	right pawed	pink mane	shiny bells
Simba	star bounce	jingle bells	right pawed	pink mane	shiny bells
Pixie	star bounce	bubble shield	left pawed	pink mane	shiny bells
Clover	moon purr	bubble shield	right pawed	gold mane	spray water
Boots	rainbow blast	jingle bells	right pawed	gold mane	spray water
Felix	moon purr	jingle bells	left pawed	gold mane	shiny bells
Daisy	star bounce	jingle bells	left pawed	blue mane	spray water
Barnaby	moon purr	jingle bells	right pawed	gold mane	shiny bells
Cookie	glitter dash	bubble shield	right pawed	pink mane	yarn balls
Garfield	moon purr	bubble shield	right pawed	pink mane	shiny bells
Cleo	star bounce	cloud float	left pawed	gold mane	shiny bells
Milo	moon purr	laser eyes	left pawed	gold mane	yarn balls
Buttercup	star bounce	jingle bells	right pawed	gold mane	shiny bells

CLUE 1

We found a secret box with tens and ones blocks. If we find the real number, the box will open to show a clue about the thief's extra power.

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

29 81 35 55 33 35 77 41 39 65 77 29 15 25 35 55 33 25 29

26 55 35 65 77 29 33 95 59 82 95 55 29

What number has 2 tens and 9 ones? → **T**

What number has 3 tens and 3 ones? → **N**

What number has 5 tens and 9 ones? → **P**

What number has 8 tens and 1 one? → **H**

What number has 2 tens and 6 ones?	→	U
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What number has 9 tens and 5 ones? →

What number has 4 tens and 1 one? → **K**

What number has 7 tens and 7 ones? → **A**

What number has 5 tens and 5 ones? → **S**

What number has 3 tens and 5 ones? → **E**

What number has 6 tens and 5 ones? → **C**

What number has 8 tens and 2 ones?	→	M
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What number has 3 tens and 9 ones? → **Y**

What number has 2 tens and 5 ones? → ☐

What number has 1 ten and 5 ones? → **D**

Scratch space:

CLUE 2 Addition

Let's count the shiny stars in the garden! We add the small stars and the big stars together to find a clue about how the thief acts.

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

T												T								
73	55	87	65	85	87	47	71	79	22	47	73	68	91	47	88	88	89	85	68	

		T		T						T				
92	89	73	55	73	55	87	91	89	68	55	73	96	47	92

$30 + 43 = \square \rightarrow$ T	$41 + 46 = \square \rightarrow$ E	$28 + 19 = \square \rightarrow$ A
$53 + 26 = \square \rightarrow$ Y	$57 + 35 = \square \rightarrow$ W	$42 + 23 = \square \rightarrow$ S
$28 + 63 = \square \rightarrow$ R	$26 + 59 = \square \rightarrow$ N	$41 + 27 = \square \rightarrow$ G
$58 + 30 = \square \rightarrow$ B	$32 + 23 = \square \rightarrow$ H	$46 + 50 = \square \rightarrow$ P
$46 + 25 = \square \rightarrow$ K	$36 + 53 = \square \rightarrow$ I	$13 + 9 = \square \rightarrow$ C

Scratch space:

CLUE 3
Subtraction

The thief knocked over a jar of pink crystals. Some crystals fell into the grass and were lost. Subtract them to see what the thief is afraid of!

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

T					T														
60	12	14	45	24	60	83	24	48	24	29	24	75	21	83	30	42			

T														
60	12	14	54	12	68	48	75	43	14	17	17	54		

$98 - 38 = \square \rightarrow \mathbf{T}$	$46 - 3 = \square \rightarrow \mathbf{B}$	$36 - 15 = \square \rightarrow \mathbf{F}$
$62 - 33 = \square \rightarrow \mathbf{W}$	$70 - 28 = \square \rightarrow \mathbf{M}$	$25 - 1 = \square \rightarrow \mathbf{A}$
$73 - 28 = \square \rightarrow \mathbf{C}$	$91 - 16 = \square \rightarrow \mathbf{Y}$	$50 - 2 = \square \rightarrow \mathbf{N}$
$64 - 10 = \square \rightarrow \mathbf{S}$	$121 - 38 = \square \rightarrow \mathbf{R}$	$72 - 4 = \square \rightarrow \mathbf{I}$
$65 - 35 = \square \rightarrow \mathbf{O}$	$18 - 1 = \square \rightarrow \mathbf{L}$	$18 - 6 = \square \rightarrow \mathbf{H}$
$37 - 23 = \square \rightarrow \mathbf{E}$		

Scratch space:

CLUE 4 Skip counting

There are tiny paw prints in the wet mud! Let's count the paws by twos to follow the path and find a clue about the thief's hair.

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

W																
33	36	70	90	45	80	39	18	26	130	9	80	39	18	90	70	9
24	130	120	14	27	26	8	120	80	55	40	9	80	36			

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

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

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, __, 39, 42 → **E**

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, __, 90, 100 → **N**

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, __, 16, 18 → **G**

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

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

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

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, __, 140, 150 → **R**

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

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

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

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

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

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, __, 75, 80 → **F**

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, __, 26, 28 → **B**

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, __, 42, 45 → **D**

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

Scratch space:

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

We need ten magic keys to open the final gate. We only have some of them. Find how many more keys we need to get the last clue!

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:

$7 + \underline{\quad} = 9$

$10 + \underline{\quad} = 14$

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

$8 + \underline{\quad} = 11$

$5 + \underline{\quad} = 14$

$10 + \underline{\quad} = 16$

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

$7 + \underline{\quad} = 19$

$6 + \underline{\quad} = 17$

$4 + \underline{\quad} = 14$

$7 + \underline{\quad} = 15$

Step 2 - cross out the sentence with each answer:

1. The villain shoots a rainbow blast to clear the path, then blocks the traps with a bubble shield.
2. The villain makes a soft moon purr to sleep the guards, then blocks the traps with a bubble shield.
3. The villain uses a star bounce to leap over the wall, then blocks the traps with a bubble shield.
4. The villain uses a star bounce to leap over the wall, then makes a quiet ring with jingle bells.
5. The villain does a sparkle jump onto the roof, then cuts through the glass with laser eyes.
6. The villain speeds away with a quick glitter dash, then drifts away on a soft cloud float.
7. The villain shoots a rainbow blast to clear the path, then cuts through the glass with laser eyes.
8. The villain speeds away with a quick glitter dash, then makes a quiet ring with jingle bells.
9. The villain speeds away with a quick glitter dash, then blocks the traps with a bubble shield.
10. The villain makes a soft moon purr to sleep the guards, then cuts through the glass with laser eyes.
11. The villain makes a soft moon purr to sleep the guards, then drifts away on a soft cloud float.
12. The villain speeds away with a quick glitter dash, then hides the escape route with catnip mist.

Answer Key

The Great Crystal Cat-astrophe

Culprit: Mittens

rainbow blast · bubble shield · right pawed · pink mane · shiny bells

Trail: Start 21 → Clue 1 19 → Clue 2 12 → Clue 3 8 → Clue 4 4 → Clue 5 1

Clue 1 (Place value): "THE SNEAKY CAT DOES NOT USE CATNIP MIST"

What number has 2 tens and 9 ones? = 29 (T) · What number has 3 tens and 3 ones? = 33 (N) · What number has 5 tens and 9 ones? = 59 (P) · What number has 8 tens and 1 one? = 81 (H) · What number has 2 tens and 6 ones? = 26 (U) · What number has 9 tens and 5 ones? = 95 (I) · What number has 4 tens and 1 one? = 41 (K) · What number has 7 tens and 7 ones? = 77 (A) · What number has 5 tens and 5 ones? = 55 (S) · What number has 3 tens and 5 ones? = 35 (E) · What number has 6 tens and 5 ones? = 65 (C) · What number has 8 tens and 2 ones? = 82 (M) · What number has 3 tens and 9 ones? = 39 (Y) · What number has 2 tens and 5 ones? = 25 (O) · What number has 1 ten and 5 ones? = 15 (D)

Clue 2 (Addition): "THE SNEAKY CAT GRABBING WITH THE RIGHT PAW"

$30 + 43 = 73$ (T) · $41 + 46 = 87$ (E) · $28 + 19 = 47$ (A) · $53 + 26 = 79$ (Y) · $57 + 35 = 92$ (W) · $42 + 23 = 65$ (S) · $28 + 63 = 91$ (R) · $26 + 59 = 85$ (N) · $41 + 27 = 68$ (G) · $58 + 30 = 88$ (B) · $32 + 23 = 55$ (H) · $46 + 50 = 96$ (P) · $46 + 25 = 71$ (K) · $36 + 53 = 89$ (I) · $13 + 9 = 22$ (C)

Clue 3 (Subtraction): "THE CAT RAN AWAY FROM THE SHINY BELLS"

$98 - 38 = 60$ (T) · $46 - 3 = 43$ (B) · $36 - 15 = 21$ (F) · $62 - 33 = 29$ (W) · $70 - 28 = 42$ (M) · $25 - 1 = 24$ (A) · $73 - 28 = 45$ (C) · $91 - 16 = 75$ (Y) · $50 - 2 = 48$ (N) · $64 - 10 = 54$ (S) · $121 - 38 = 83$ (R) · $72 - 4 = 68$ (I) · $65 - 35 = 30$ (O) · $18 - 1 = 17$ (L) · $18 - 6 = 12$ (H) · $37 - 23 = 14$ (E)

Clue 4 (Skip counting): "WE FOUND STRANDS OF A BRIGHT PINK MANE"

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, __, 36, 39 = 33 (W) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, __, 130, 140 = 120 (I) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, __, 39, 42 = 36 (E) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, __, 90, 100 = 80 (N) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, __, 16, 18 = 14 (G) · Skip-count by 2s. Fill the blank: 2, 4, 6, __, 10, 12 = 8 (P) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, __, 100, 110 = 90 (O) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, __, 45, 50 = 40 (M) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, __, 140, 150 = 130 (R) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, __, 28, 30 = 26 (T) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, __, 21, 24 = 18 (S) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, __, 30, 33 = 27 (H) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, __, 60, 65 = 55 (K) · Skip-count by 3s. Fill the blank: 3, 6, __, 12, 15 = 9 (A) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, __, 75, 80 = 70 (F) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, __, 26, 28 = 24 (B) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, __, 42, 45 = 39 (D) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, __, 50, 55 = 45 (U)

Clue 5 (Missing addends): surviving statement is box 1 → Mittens

$7 + \underline{\quad} = 9 = 2$ · $10 + \underline{\quad} = 14 = 4$ · $8 + \underline{\quad} = 15 = 7$ · $8 + \underline{\quad} = 11 = 3$ · $5 + \underline{\quad} = 14 = 9$ · $10 + \underline{\quad} = 16 = 6$ · $3 + \underline{\quad} = 8 = 5$ · $7 + \underline{\quad} = 19 = 12$ · $6 + \underline{\quad} = 17 = 11$ · $4 + \underline{\quad} = 14 = 10$ · $7 + \underline{\quad} = 15 = 8$