The Great Rainbow Cupcake Mystery

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

Detective: _____ **Date:** _____

Someone sneaked into the Cloud Kingdom Bakery and snagged the Magic Rainbow Cupcake! Follow the glittery clues to catch the sneaky kitty-corn.

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 Rainbow Rascal is _____

Possible suspects

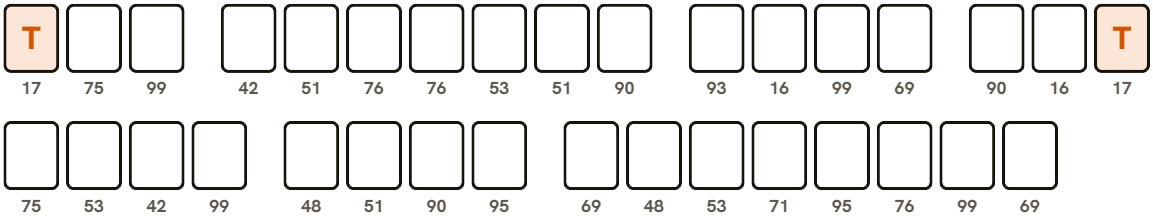
Cross off a row as each clue rules it out. The one left at the end is the culprit.

NAME	MAGIC CHARM	HORN GLOW	PAW SIGN	FUR SHADE	FAVORITE SNACK
Milo	Star Prism	Pink Sparkles	Left Pawed	Sunny Yellow	Warm Biscuits
Mittens	Bubble Shield	Purple Hearts	Right Pawed	Sunny Yellow	Catnip Tea
Smokey	Glitter Beam	Silver Halos	Right Pawed	Sunny Yellow	Magic Milk
Duchess	Bubble Shield	Silver Halos	Right Pawed	Soft Lavender	Catnip Tea
Trixie	Glitter Beam	Blue Swirls	Right Pawed	Soft Lavender	Catnip Tea
Oliver	Glitter Beam	Pink Sparkles	Right Pawed	Soft Lavender	Magic Milk
Penny	Glitter Beam	Blue Swirls	Right Pawed	Soft Lavender	Magic Milk
Felix	Bubble Shield	Purple Hearts	Right Pawed	Soft Lavender	Warm Biscuits
Fluffy	Sparkle Blast	Silver Halos	Right Pawed	Sunny Yellow	Catnip Tea
Ziggy	Bubble Shield	Gold Stars	Left Pawed	Cotton Candy Pink	Catnip Tea
Cookie	Star Prism	Blue Swirls	Right Pawed	Soft Lavender	Catnip Tea
Jasper	Bubble Shield	Pink Sparkles	Left Pawed	Cotton Candy Pink	Warm Biscuits
Bella	Star Prism	Pink Sparkles	Left Pawed	Sunny Yellow	Magic Milk
Cleo	Glitter Beam	Blue Swirls	Right Pawed	Cotton Candy Pink	Catnip Tea
Lulu	Glitter Beam	Gold Stars	Right Pawed	Cotton Candy Pink	Warm Biscuits
Daisy	Rainbow Dash	Blue Swirls	Right Pawed	Soft Lavender	Catnip Tea
Nala	Glitter Beam	Silver Halos	Right Pawed	Sunny Yellow	Warm Biscuits
Ember	Glitter Beam	Pink Sparkles	Right Pawed	Soft Lavender	Catnip Tea
Gizmo	Sparkle Blast	Blue Swirls	Right Pawed	Soft Lavender	Magic Milk
Hazel	Sparkle Blast	Silver Halos	Left Pawed	Soft Lavender	Catnip Tea
Peanut	Sparkle Blast	Gold Stars	Right Pawed	Cotton Candy Pink	Catnip Tea

CLUE 1 Place value

Read the baker digital flour scale to unlock the first clue.

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



What number has 1 ten and 7 ones? ☐ → T

What number has 6 tens and 9 ones? ☐ → S

What number has 7 tens and 5 ones? ☐ → H

What number has 9 tens and 3 ones? ☐ → D

What number has 4 tens and 2 ones? ☐ → V

What number has 9 tens and 9 ones? ☐ → E

What number has 5 tens and 3 ones? ☐ → A

What number has 7 tens and 6 ones? ☐ → L

What number has 9 tens and 0 ones? ☐ → N

What number has 9 tens and 5 ones? ☐ → K

What number has 7 tens and 1 one? ☐ → R

What number has 5 tens and 1 one? ☐ → I

What number has 4 tens and 8 ones? ☐ → P

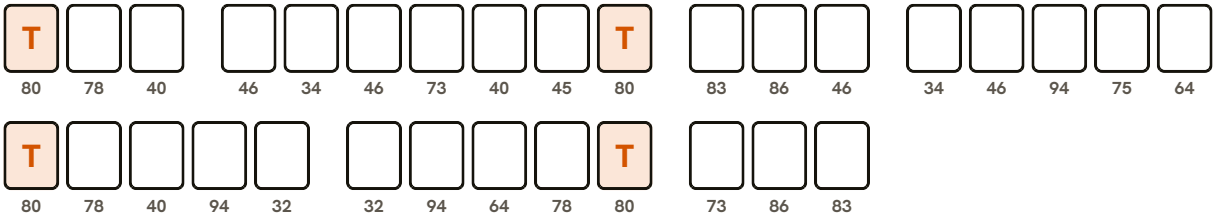
What number has 1 ten and 6 ones? ☐ → O

Scratch space:

CLUE 2 Addition

Add up the jars of glitter sprinkles on the top two shelves.

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



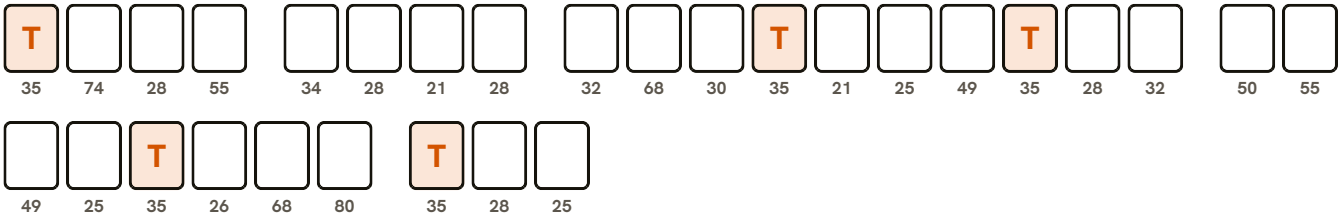
27 + 53 = ☐ → T	16 + 29 = ☐ → C	25 + 61 = ☐ → A
27 + 48 = ☐ → N	44 + 29 = ☐ → P	28 + 50 = ☐ → H
47 + 36 = ☐ → W	26 + 14 = ☐ → E	33 + 13 = ☐ → S
22 + 12 = ☐ → U	48 + 46 = ☐ → I	21 + 11 = ☐ → R
44 + 20 = ☐ → G		

Scratch space:

CLUE 3 Subtraction

Take away the burnt cookies from the batch to find the code.

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



52 - 17 = ☐ → T

58 - 26 = ☐ → D

84 - 29 = ☐ → Y

50 - 16 = ☐ → W

94 - 20 = ☐ → H

83 - 33 = ☐ → B

83 - 3 = ☐ → P

101 - 33 = ☐ → I

65 - 16 = ☐ → C

31 - 10 = ☐ → R

35 - 7 = ☐ → E

40 - 10 = ☐ → S

56 - 31 = ☐ → A

30 - 4 = ☐ → N

Scratch space:

CLUE 4 Skip counting

Count the star cupcakes by twos along the display tray.

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

L														L					
27	39	20	22	110	50	22	130	90	45	130	65	39	21	27	22	90	24		

39	24	24	9	22	21	28	22	110	22

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, ___, 30, 33 ☐ → L

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, ___, 27, 30 ☐ → T

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, ___, 24, 26 ☐ → E

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, ___, 100, 110 ☐ → F

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, ___, 60, 70 ☐ → D

Skip-count by 5s. Fill the blank: 5, 10, 15, ___, 25, 30 ☐ → V

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

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

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, ___, 120, 130 ☐ → N

Skip-count by 3s. Fill the blank: 3, 6, ___, 12, 15 ☐ → H

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 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, ___, 42, 45 ☐ → A

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, ___, 30, 32 ☐ → C

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, ___, 24, 27 [ ] → S

Scratch space:

CLUE 5 Missing addends - the last clue

Figure out how many more sugar cubes are needed for the tea.

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:

2 + ___ = 6 ☐	1 + ___ = 2 ☐	3 + ___ = 12 ☐	7 + ___ = 15 ☐	3 + ___ = 9 ☐
5 + ___ = 16 ☐	1 + ___ = 3 ☐	6 + ___ = 13 ☐	9 + ___ = 19 ☐	
1 + ___ = 13 ☐	1 + ___ = 4 ☐			

Step 2 - cross out the sentence with each answer:

1. The villain shined a star prism, then trailed blue swirls on top.
2. The villain shot a sparkle blast, then left pink sparkles behind.
3. The villain shot a sparkle blast, then trailed blue swirls on top.
4. The villain fired a glitter beam, then trailed blue swirls on top.
5. The villain raised a bubble shield, then shed silver halos nearby.
6. The villain raised a bubble shield, then spilled purple hearts around.
7. The villain shot a sparkle blast, then shed silver halos nearby.
8. The villain shot a sparkle blast, then spilled purple hearts around.
9. The villain made a rainbow dash, then trailed blue swirls on top.
10. The villain made a rainbow dash, then left pink sparkles behind.
11. The villain fired a glitter beam, then shed silver halos nearby.
12. The villain shined a star prism, then shed silver halos nearby.

TEACHER / PARENT

Answer Key

The Great Rainbow Cupcake Mystery

Culprit: Duchess

Bubble Shield · Silver Halos · Right Pawed · Soft Lavender · Catnip Tea

Trail: Start 21 → Clue 1 16 → Clue 2 14 → Clue 3 8 → Clue 4 4 → Clue 5 1

Clue 1 (Place value): "THE VILLAIN DOES NOT HAVE PINK SPARKLES"

What number has 1 ten and 7 ones? = 17 (T) · What number has 6 tens and 9 ones? = 69 (S) · What number has 7 tens and 5 ones? = 75 (H) · What number has 9 tens and 3 ones? = 93 (D) · What number has 4 tens and 2 ones? = 42 (V) · What number has 9 tens and 9 ones? = 99 (E) · What number has 5 tens and 3 ones? = 53 (A) · What number has 7 tens and 6 ones? = 76 (L) · What number has 9 tens and 0 ones? = 90 (N) · What number has 9 tens and 5 ones? = 95 (K) · What number has 7 tens and 1 one? = 71 (R) · What number has 5 tens and 1 one? = 51 (I) · What number has 4 tens and 8 ones? = 48 (P) · What number has 1 ten and 6 ones? = 16 (O)

Clue 2 (Addition): "THE SUSPECT WAS USING THEIR RIGHT PAW"

27 + 53 = 80 (T) · 16 + 29 = 45 (C) · 25 + 61 = 86 (A) · 27 + 48 = 75 (N) · 44 + 29 = 73 (P) · 28 + 50 = 78 (H) · 47 + 36 = 83 (W) · 26 + 14 = 40 (E) · 33 + 13 = 46 (S) · 22 + 12 = 34 (U) · 48 + 46 = 94 (I) · 21 + 11 = 32 (R) · 44 + 20 = 64 (G)

Clue 3 (Subtraction): "THEY WERE DISTRACTED BY CATNIP TEA"

52 - 17 = 35 (T) · 58 - 26 = 32 (D) · 84 - 29 = 55 (Y) · 50 - 16 = 34 (W) · 94 - 20 = 74 (H) · 83 - 33 = 50 (B) · 83 - 3 = 80 (P) · 101 - 33 = 68 (I) · 65 - 16 = 49 (C) · 31 - 10 = 21 (R) · 35 - 7 = 28 (E) · 40 - 10 = 30 (S) · 56 - 31 = 25 (A) · 30 - 4 = 26 (N)

Clue 4 (Skip counting): "LAVENDER FUR WAS LEFT AT THE SCENE"

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, ___, 30, 33 = 27 (L) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, ___, 27, 30 = 24 (T) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, ___, 24, 26 = 22 (E) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, ___, 100, 110 = 90 (F) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, ___, 60, 70 = 50 (D) · Skip-count by 5s. Fill the blank: 5, 10, 15, ___, 25, 30 = 20 (V) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, ___, 50, 55 = 45 (U) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, ___, 70, 75 = 65 (W) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, ___, 120, 130 = 110 (N) · Skip-count by 3s. Fill the blank: 3, 6, ___, 12, 15 = 9 (H) · 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 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, ___, 42, 45 = 39 (A) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, ___, 30, 32 = 28 (C) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, ___, 24, 27 = 21 (S)

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

2 + ___ = 6 = 4 · 1 + ___ = 2 = 1 · 3 + ___ = 12 = 9 · 7 + ___ = 15 = 8 · 3 + ___ = 9 = 6 · 5 + ___ = 16 = 11 · 1 + ___ = 3 = 2 · 6 + ___ = 13 = 7 · 9 + ___ = 19 = 10 · 1 + ___ = 13 = 12 · 1 + ___ = 4 = 3