The Great Star Cake Mystery

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

Detective: _____ **Date:** _____

Someone snuck into the palace kitchen and grabbed the giant Star Cake right before the big feast! Help the Star Buddies solve math clues and find out who took the cake.

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 Star Thief is _____

Possible suspects

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

NAME	COPY ABILITY	FRIEND ITEM	STANCE	HAT COLOR	VULNERABILITY
Poppy Bro	Fire Breath	Water Wand	Left Handed	Red Hero Cap	Sweet Juice
Zan Partizanne	Fire Breath	Spark Rod	Left Handed	Green Jester Hat	Bright Flash
King Fluff	Ice Freeze	Water Wand	Left Handed	Green Jester Hat	Sweet Juice
Burning Leo	Fire Breath	Wind Glider	Left Handed	Blue Crown	Bright Flash
Sword Knight	Plasma Blast	Wind Glider	Left Handed	Blue Crown	Sweet Juice
Francisca	Fire Breath	Bomb Bag	Right Handed	Red Hero Cap	Loud Chime
Taranza	Ice Freeze	Wind Glider	Left Handed	Red Hero Cap	Sweet Juice
Rocky	Yoyo Trick	Wind Glider	Left Handed	Red Hero Cap	Loud Chime
Waddle Dee	Sword Slash	Wind Glider	Left Handed	Green Jester Hat	Loud Chime
Chilly	Sword Slash	Spark Rod	Right Handed	Blue Crown	Bright Flash
Waddle Doo	Sword Slash	Wind Glider	Left Handed	Red Hero Cap	Loud Chime
Flamberge	Fire Breath	Stone Shield	Left Handed	Blue Crown	Bright Flash
Bandana Dee	Sword Slash	Water Wand	Left Handed	Green Jester Hat	Sweet Juice
Blade Knight	Yoyo Trick	Spark Rod	Left Handed	Green Jester Hat	Loud Chime
Pinky Puff	Plasma Blast	Wind Glider	Left Handed	Red Hero Cap	Sweet Juice
Marx	Plasma Blast	Stone Shield	Left Handed	Red Hero Cap	Sweet Juice
Knight Star	Yoyo Trick	Spark Rod	Left Handed	Green Jester Hat	Sweet Juice
Gooey	Fire Breath	Bomb Bag	Left Handed	Blue Crown	Sweet Juice
Sparky	Sword Slash	Bomb Bag	Right Handed	Red Hero Cap	Bright Flash
Broom Hatter	Ice Freeze	Bomb Bag	Left Handed	Red Hero Cap	Sweet Juice
Daroach	Fire Breath	Spark Rod	Right Handed	Red Hero Cap	Sweet Juice

CLUE 1 Place value

We checked the star computer scanner to read the place values of the energy code.

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

T																							
56	65	79	88	72	79	52	63	13	92	58	32	32	52	58	72	22	98	79	88				
		T							T														
72	98	56	60	88	79	52	71	52	56	79	68	71	52	72	22								

What number has 5 tens and 6 ones? ☐ → T

What number has 6 tens and 5 ones? ☐ → H

What number has 6 tens and 3 ones? ☐ → K

What number has 7 tens and 9 ones? ☐ → E

What number has 2 tens and 2 ones? ☐ → D

What number has 6 tens and 0 ones? ☐ → U

What number has 5 tens and 2 ones? ☐ → A

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

What number has 1 ten and 3 ones? ☐ → Y

What number has 5 tens and 8 ones? ☐ → I

What number has 3 tens and 2 ones? ☐ → L

What number has 9 tens and 2 ones? ☐ → V

What number has 6 tens and 8 ones? ☐ → R

What number has 7 tens and 2 ones? ☐ → N

What number has 9 tens and 8 ones? ☐ → O

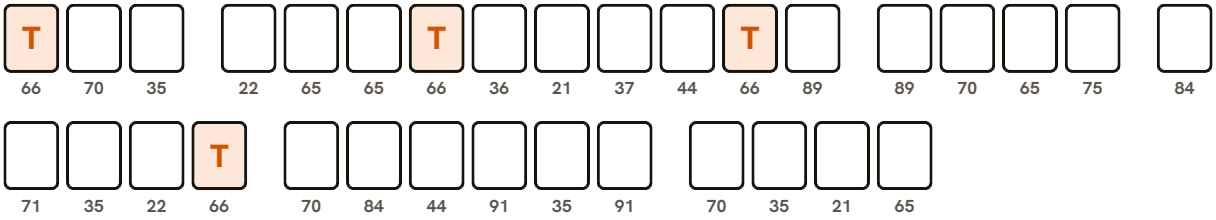
What number has 8 tens and 8 ones? ☐ → S

Scratch space:

CLUE 2 Addition

> Our friends gathered up energy hearts and added them together to clear the pathway.

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



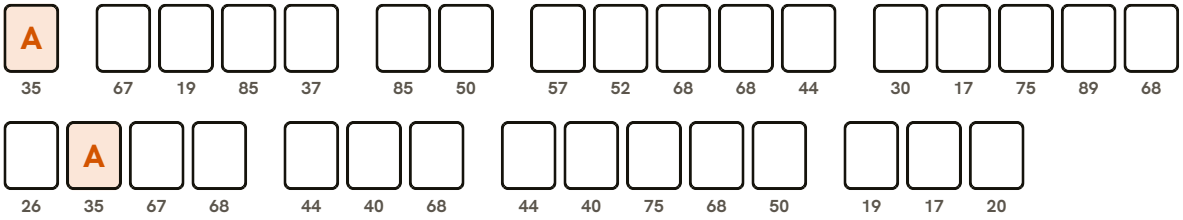
24 + 42 = ☐ → T	35 + 49 = ☐ → A	16 + 21 = ☐ → I
15 + 7 = ☐ → F	27 + 17 = ☐ → N	46 + 19 = ☐ → O
38 + 53 = ☐ → D	49 + 26 = ☐ → W	11 + 10 = ☐ → R
50 + 21 = ☐ → L	21 + 15 = ☐ → P	47 + 23 = ☐ → H
14 + 21 = ☐ → E	42 + 47 = ☐ → S	

Scratch space:

CLUE 3 Subtraction

> The evil dark clouds lost magic power when we took away their dark stars.

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



56 - 21 = ☐ → **A**

58 - 1 = ☐ → **S**

49 - 32 = ☐ → **U**

57 - 27 = ☐ → **J**

46 - 26 = ☐ → **N**

112 - 27 = ☐ → **O**

75 - 38 = ☐ → **P**

29 - 10 = ☐ → **R**

65 - 13 = ☐ → **W**

81 - 14 = ☐ → **D**

70 - 20 = ☐ → **F**

78 - 10 = ☐ → **E**

79 - 35 = ☐ → **T**

52 - 12 = ☐ → **H**

62 - 36 = ☐ → **M**

80 - 5 = ☐ → **I**

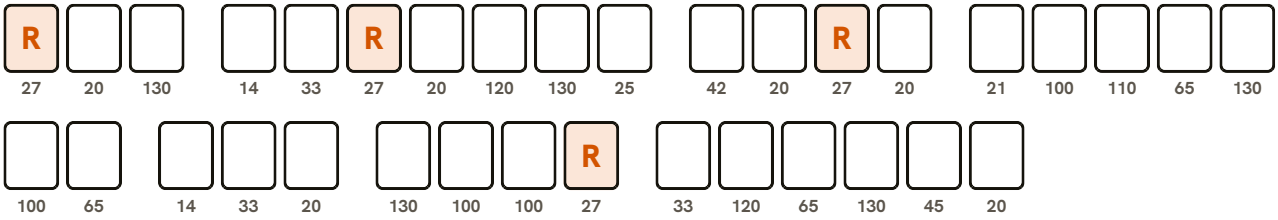
101 - 12 = ☐ → **C**

Scratch space:

CLUE 4 Skip counting

We counted the glowing star tiles in groups to leap across the sky bridge.

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



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

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

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

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, ___, 30, 35 ☐ → S

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

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, ___, 45, 48 ☐ → W

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, ___, 16, 18 ☐ → T

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

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

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

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, ___, 110, 120 ☐ → O

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

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

Scratch space:

CLUE 5 Missing addends - the last clue

> We need a total count of star snacks for the party and must find how many are missing.

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 + ___ = 10 ☐	10 + ___ = 15 ☐	7 + ___ = 8 ☐	4 + ___ = 14 ☐
4 + ___ = 13 ☐	9 + ___ = 13 ☐	4 + ___ = 7 ☐	9 + ___ = 11 ☐
5 + ___ = 17 ☐	6 + ___ = 12 ☐	1 + ___ = 12 ☐	

Step 2 - cross out the sentence with each answer:

1. The villain zapped the room with plasma blast, then soared away using a wind glider.
2. The villain blazed past with fire breath, then blew open locks using a bomb bag.
3. The villain blazed past with fire breath, then splashed trails using a water wand.
4. The villain blazed past with fire breath, then blocked paths using a stone shield.
5. The villain chilled the air with ice freeze, then soared away using a wind glider.
6. The villain tangled traps with a yoyo trick, then soared away using a wind glider.
7. The villain zapped the room with plasma blast, then blocked paths using a stone shield.
8. The villain chilled the air with ice freeze, then blew open locks using a bomb bag.
9. The villain blazed past with fire breath, then soared away using a wind glider.
10. The villain zapped the room with plasma blast, then zapped doors using a spark rod.
11. The villain tangled traps with a yoyo trick, then blocked paths using a stone shield.
12. The villain zapped the room with plasma blast, then splashed trails using a water wand.

TEACHER / PARENT

Answer Key

The Great Star Cake Mystery

Culprit: Marx

Plasma Blast · Stone Shield · Left Handed · Red Hero Cap · Sweet Juice

Trail: Start 21 → Clue 1 18 → Clue 2 14 → Clue 3 7 → Clue 4 4 → Clue 5 1

Clue 1 (Place value): "THE SNEAKY VILLAIN DOES NOT USE A WATER WAND"

What number has 5 tens and 6 ones? = 56 (T) · What number has 6 tens and 5 ones? = 65 (H) · What number has 6 tens and 3 ones? = 63 (K) · What number has 7 tens and 9 ones? = 79 (E) · What number has 2 tens and 2 ones? = 22 (D) · What number has 6 tens and 0 ones? = 60 (U) · What number has 5 tens and 2 ones? = 52 (A) · What number has 7 tens and 1 one? = 71 (W) · What number has 1 ten and 3 ones? = 13 (Y) · What number has 5 tens and 8 ones? = 58 (I) · What number has 3 tens and 2 ones? = 32 (L) · What number has 9 tens and 2 ones? = 92 (V) · What number has 6 tens and 8 ones? = 68 (R) · What number has 7 tens and 2 ones? = 72 (N) · What number has 9 tens and 8 ones? = 98 (O) · What number has 8 tens and 8 ones? = 88 (S)

Clue 2 (Addition): "THE FOOTPRINTS SHOW A LEFT HANDED HERO"

24 + 42 = 66 (T) · 35 + 49 = 84 (A) · 16 + 21 = 37 (I) · 15 + 7 = 22 (F) · 27 + 17 = 44 (N) · 46 + 19 = 65 (O) · 38 + 53 = 91 (D) · 49 + 26 = 75 (W) · 11 + 10 = 21 (R) · 50 + 21 = 71 (L) · 21 + 15 = 36 (P) · 47 + 23 = 70 (H) · 14 + 21 = 35 (E) · 42 + 47 = 89 (S)

Clue 3 (Subtraction): "A DROP OF SWEET JUICE MADE THE THIEF RUN"

56 - 21 = 35 (A) · 58 - 1 = 57 (S) · 49 - 32 = 17 (U) · 57 - 27 = 30 (J) · 46 - 26 = 20 (N) · 112 - 27 = 85 (O) · 75 - 38 = 37 (P) · 29 - 10 = 19 (R) · 65 - 13 = 52 (W) · 81 - 14 = 67 (D) · 70 - 20 = 50 (F) · 78 - 10 = 68 (E) · 79 - 35 = 44 (T) · 52 - 12 = 40 (H) · 62 - 36 = 26 (M) · 80 - 5 = 75 (I) · 101 - 12 = 89 (C)

Clue 4 (Skip counting): "RED THREADS WERE FOUND ON THE DOOR HANDLE"

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, ___, 30, 33 = 27 (R) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, ___, 24, 27 = 21 (F) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, ___, 36, 39 = 33 (H) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, ___, 30, 35 = 25 (S) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, ___, 70, 75 = 65 (N) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, ___, 45, 48 = 42 (W) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, ___, 16, 18 = 14 (T) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, ___, 140, 150 = 130 (D) · Skip-count by 5s. Fill the blank: 5, 10, 15, ___, 25, 30 = 20 (E) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, ___, 130, 140 = 120 (A) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, ___, 110, 120 = 100 (O) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, ___, 50, 55 = 45 (L) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, ___, 120, 130 = 110 (U)

Clue 5 (Missing addends): surviving statement is box 7 → Marx

2 + ___ = 10 = 8 · 10 + ___ = 15 = 5 · 7 + ___ = 8 = 1 · 4 + ___ = 14 = 10 · 4 + ___ = 13 = 9 · 9 + ___ = 13 = 4 · 4 + ___ = 7 = 3 · 9 + ___ = 11 = 2 · 5 + ___ = 17 = 12 · 6 + ___ = 12 = 6 · 1 + ___ = 12 = 11