The Secret Snack Mystery

Grade 4 math · Place value, Addition, Subtraction, Multiplication, Division · Reading level grades 3-4

Detective: _____ **Date:** _____

Someone swapped the blue ribbon family recipes right before the big fair. Detective Mom and her son Leo are on the case to find out who sneaked into the tent.

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 Prankster is _____

Possible suspects

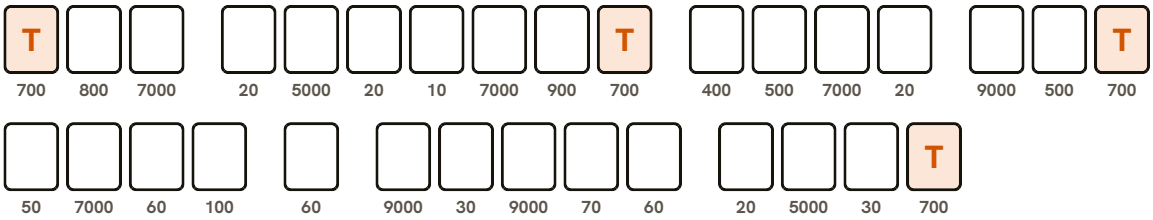
Cross off a row as each clue rules it out. The one left at the end is the culprit.

NAME	GADGET	DISGUISE	WATCH WRIST	CAP COLOR	FAVORITE SNACK
Artist Mia	Laser Pointer	Ninja Suit	Left Wrist	Red Cap	Popcorn
Uncle Sam	Walkie Talkie	Super Mask	Left Wrist	Blue Cap	Apple Slices
Driver Gus	Grappling Hook	Super Mask	Left Wrist	Blue Cap	Popcorn
Baker Bob	Magnifying Lens	Super Mask	Right Wrist	Blue Cap	Apple Slices
Neighbor Dan	Grappling Hook	Lab Coat	Right Wrist	Red Cap	Popcorn
Aunt Clara	Pocket Drone	Super Mask	Right Wrist	Blue Cap	Popcorn
Coach Tim	Laser Pointer	Mascot Costume	Left Wrist	Blue Cap	Popcorn
Teacher Kim	Grappling Hook	Lab Coat	Right Wrist	Green Cap	Popcorn
Pilot Sky	Laser Pointer	Mascot Costume	Right Wrist	Blue Cap	Pretzels
Officer Pete	Grappling Hook	Mascot Costume	Right Wrist	Blue Cap	Apple Slices
Farmer Ted	Pocket Drone	Chef Apron	Left Wrist	Red Cap	Popcorn
Son Leo	Magnifying Lens	Chef Apron	Left Wrist	Blue Cap	Popcorn
Mayor Brooks	Grappling Hook	Chef Apron	Right Wrist	Green Cap	Apple Slices
Detective Pam	Pocket Drone	Lab Coat	Left Wrist	Red Cap	Pretzels
Reporter Zoe	Pocket Drone	Chef Apron	Left Wrist	Green Cap	Pretzels
Cousin Ben	Walkie Talkie	Chef Apron	Right Wrist	Red Cap	Popcorn
Captain Ray	Magnifying Lens	Mascot Costume	Left Wrist	Red Cap	Pretzels
Grandma Rosa	Magnifying Lens	Mascot Costume	Left Wrist	Red Cap	Popcorn
Builder Max	Pocket Drone	Lab Coat	Right Wrist	Green Cap	Popcorn
Dr Evans	Laser Pointer	Lab Coat	Left Wrist	Red Cap	Popcorn
Mom Maya	Walkie Talkie	Chef Apron	Left Wrist	Red Cap	Popcorn

CLUE 1 Place value

Mom checked the digital lock on the display tent. The screen showed digits arranged by place value to reveal the first clue.

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



What is the value of the 7 in 8,731? ☐ → T

What is the value of the 1 in 6,916? ☐ → P

What is the value of the 1 in 6,156? ☐ → R

What is the value of the 4 in 432? ☐ → D

What is the value of the 5 in 8,568? ☐ → O

What is the value of the 2 in 529? ☐ → S

What is the value of the 9 in 1,931? ☐ → C

What is the value of the 7 in 1,078? ☐ → J

What is the value of the 7 in 27,324? ☐ → E

What is the value of the 3 in 538? ☐ → I

What is the value of the 5 in 5,679? ☐ → U

What is the value of the 5 in 857? ☐ → W

What is the value of the 8 in 9,826? ☐ → H

What is the value of the 9 in 39,273? ☐ → N

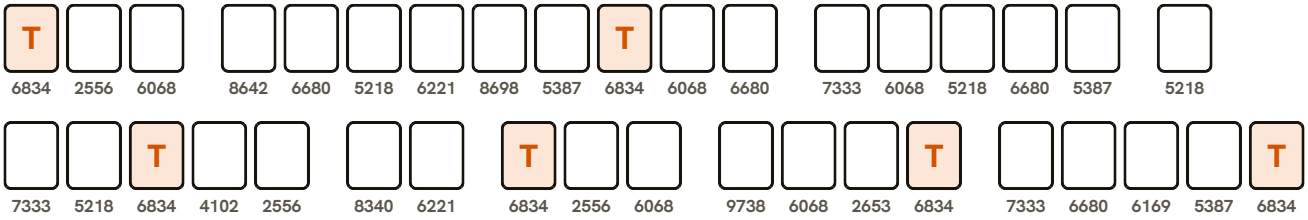
What is the value of the 6 in 364? ☐ → A

Scratch space:

CLUE 2 Addition

Leo gathered up the extra snack boxes left near the tent and added them together to check the total count.

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



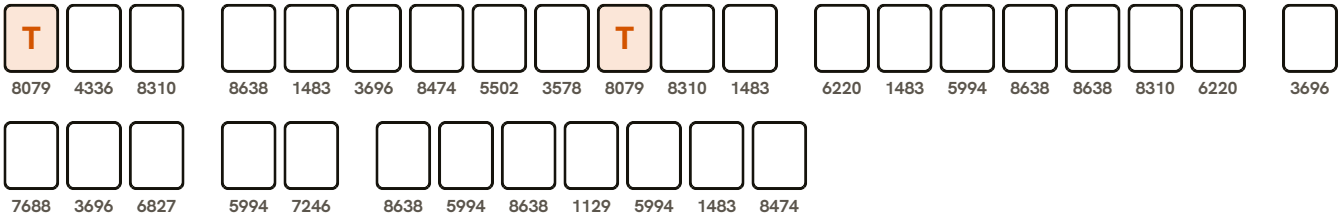
2639 + 4195 = ☐ → T	4974 + 2359 = ☐ → W	1124 + 1432 = ☐ → H
1911 + 2191 = ☐ → C	6082 + 3656 = ☐ → L	2130 + 3088 = ☐ → A
1288 + 1365 = ☐ → F	2426 + 3795 = ☐ → N	5145 + 3195 = ☐ → O
2439 + 3730 = ☐ → I	3937 + 2131 = ☐ → E	2793 + 5849 = ☐ → P
2402 + 2985 = ☐ → S	4817 + 3881 = ☐ → K	4269 + 2411 = ☐ → R

Scratch space:

CLUE 3 Subtraction

Mom subtracted the spent tickets from the starting stack to see how many people visited the table.

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



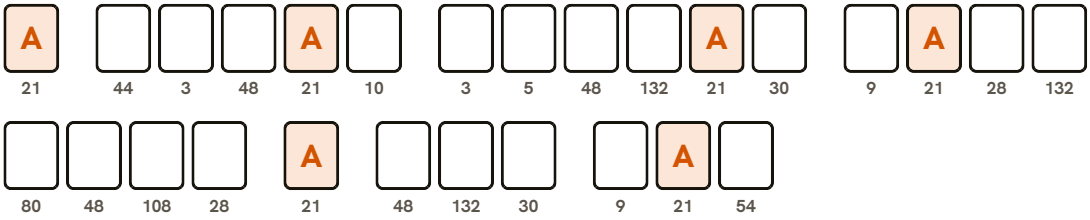
9703 - 1624 = ☐ → T	10359 - 1885 = ☐ → N	5555 - 4072 = ☐ → R
7046 - 1052 = ☐ → O	10184 - 1874 = ☐ → E	6299 - 797 = ☐ → K
10277 - 1639 = ☐ → P	10165 - 3945 = ☐ → D	4356 - 778 = ☐ → S
5194 - 1498 = ☐ → A	8454 - 1208 = ☐ → F	12475 - 4787 = ☐ → B
5814 - 4685 = ☐ → C	5426 - 1090 = ☐ → H	7943 - 1116 = ☐ → G

Scratch space:

CLUE 4 Multiplication facts (1-12)

Leo counted the rows of bake sale trays and multiplied to find out how many treats were missing.

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



3 × 7 = ☐ → A

3 × 3 = ☐ → C

10 × 3 = ☐ → D

12 × 9 = ☐ → O

4 × 12 = ☐ → R

2 × 5 = ☐ → Y

4 × 11 = ☐ → S

6 × 9 = ☐ → P

10 × 8 = ☐ → F

5 × 1 = ☐ → H

1 × 3 = ☐ → T

12 × 11 = ☐ → E

7 × 4 = ☐ → M

Scratch space:

CLUE 5 Division facts (1-12) - the last clue

> Mom split the collected clue cards evenly between their detective notebooks to reveal the final answer.

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:

70 ÷ 10 = ☐ | 55 ÷ 11 = ☐ | 9 ÷ 3 = ☐ | 9 ÷ 9 = ☐ | 11 ÷ 1 = ☐

70 ÷ 7 = ☐ | 18 ÷ 3 = ☐ | 45 ÷ 5 = ☐ | 4 ÷ 2 = ☐ | 80 ÷ 10 = ☐

40 ÷ 10 = ☐

Step 2 - cross out the sentence with each answer:

1. The villain swapped the recipe cards, then zipped past the snack table.
2. The villain swapped the recipe cards, then snuck out through the kitchen.
3. The villain distracted the judges, then zipped away on a scooter.
4. The villain turned off the lights, then zipped away on a scooter.
5. The villain turned off the lights, then snuck out through the kitchen.
6. The villain unplugged the freezer, then left behind a trail of flour.
7. The villain unplugged the freezer, then snuck out through the kitchen.
8. The villain unplugged the freezer, then zipped past the snack table.
9. The villain swapped the recipe cards, then zipped away on a scooter.
10. The villain distracted the judges, then spilled juice on the carpet.
11. The villain hid the trophy, then spilled juice on the carpet.
12. The villain hid the trophy, then zipped past the snack table.

TEACHER / PARENT

Answer Key

The Secret Snack Mystery

Culprit: Grandma Rosa

Magnifying Lens · Mascot Costume · Left Wrist · Red Cap · Popcorn

Trail: Start 21 → Clue 1 20 → Clue 2 11 → Clue 3 7 → Clue 4 4 → Clue 5 1

Clue 1 (Place value): "THE SUSPECT DOES NOT WEAR A NINJA SUIT"

What is the value of the 7 in 8,731? = 700 (T) · What is the value of the 1 in 6,916? = 10 (P) · What is the value of the 1 in 6,156? = 100 (R) · What is the value of the 4 in 432? = 400 (D) · What is the value of the 5 in 8,568? = 500 (O) · What is the value of the 2 in 529? = 20 (S) · What is the value of the 9 in 1,931? = 900 (C) · What is the value of the 7 in 1,078? = 70 (J) · What is the value of the 7 in 27,324? = 7000 (E) · What is the value of the 3 in 538? = 30 (I) · What is the value of the 5 in 5,679? = 5000 (U) · What is the value of the 5 in 857? = 50 (W) · What is the value of the 8 in 9,826? = 800 (H) · What is the value of the 9 in 39,273? = 9000 (N) · What is the value of the 6 in 364? = 60 (A)

Clue 2 (Addition): "THE PRANKSTER WEARS A WATCH ON THE LEFT WRIST"

2639 + 4195 = 6834 (T) · 4974 + 2359 = 7333 (W) · 1124 + 1432 = 2556 (H) · 1911 + 2191 = 4102 (C) · 6082 + 3656 = 9738 (L) · 2130 + 3088 = 5218 (A) · 1288 + 1365 = 2653 (F) · 2426 + 3795 = 6221 (N) · 5145 + 3195 = 8340 (O) · 2439 + 3730 = 6169 (I) · 3937 + 2131 = 6068 (E) · 2793 + 5849 = 8642 (P) · 2402 + 2985 = 5387 (S) · 4817 + 3881 = 8698 (K) · 4269 + 2411 = 6680 (R)

Clue 3 (Subtraction): "THE PRANKSTER DROPPED A BAG OF POPCORN"

9703 - 1624 = 8079 (T) · 10359 - 1885 = 8474 (N) · 5555 - 4072 = 1483 (R) · 7046 - 1052 = 5994 (O) · 10184 - 1874 = 8310 (E) · 6299 - 797 = 5502 (K) · 10277 - 1639 = 8638 (P) · 10165 - 3945 = 6220 (D) · 4356 - 778 = 3578 (S) · 5194 - 1498 = 3696 (A) · 8454 - 1208 = 7246 (F) · 12475 - 4787 = 7688 (B) · 5814 - 4685 = 1129 (C) · 5426 - 1090 = 4336 (H) · 7943 - 1116 = 6827 (G)

Clue 4 (Multiplication facts (1-12)): "A STRAY THREAD CAME FROM A RED CAP"

3 × 7 = 21 (A) · 3 × 3 = 9 (C) · 10 × 3 = 30 (D) · 12 × 9 = 108 (O) · 4 × 12 = 48 (R) · 2 × 5 = 10 (Y) · 4 × 11 = 44 (S) · 6 × 9 = 54 (P) · 10 × 8 = 80 (F) · 5 × 1 = 5 (H) · 1 × 3 = 3 (T) · 12 × 11 = 132 (E) · 7 × 4 = 28 (M)

Clue 5 (Division facts (1-12)): surviving statement is box 12 → Grandma Rosa

70 ÷ 10 = 7 · 55 ÷ 11 = 5 · 9 ÷ 3 = 3 · 9 ÷ 9 = 1 · 11 ÷ 1 = 11 · 70 ÷ 7 = 10 · 18 ÷ 3 = 6 · 45 ÷ 5 = 9 · 4 ÷ 2 = 2 · 80 ÷ 10 = 8 · 40 ÷ 10 = 4