



The Great Decimal Donut Heist

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

Detective: _____ Date: _____

Someone has stolen the Golden Ratio Donut from the high-security display case at the Decimal Donut Bakery! It is the most perfect donut ever fried. Master Baker Sprinkle needs your help. The suspects are all baking math students who were visiting the kitchen. Follow the crumbs to find the culprit!

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 Glaze Thief is _____

Possible suspects

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

NAME	BAKING SKILL	BAKING TOOL	STIRRING HAND	HAIR STYLE	BAKING FEAR
Freddy Fraction	Frosting Magic	Dough Roller	Left-handed stirring	Pink icing hair	Burnt crust fear
Alan Turing	Yeast Raising	Dough Roller	Left-handed stirring	Brown cocoa hair	Salty dough fear
Chef Pierre	Sugar Dusting	Pastry Bag	Left-handed stirring	Brown cocoa hair	Salty dough fear
Katherine Johnson	Frosting Magic	Dough Roller	Left-handed stirring	Pink icing hair	Lemon glaze fear
Peter Pi	Yeast Raising	Pastry Bag	Right-handed stirring	Brown cocoa hair	Salty dough fear
Sally Sprinkle	Dough Kneading	Pastry Bag	Right-handed stirring	Blue sugar hair	Lemon glaze fear
Carl Gauss	Sugar Dusting	Pastry Bag	Right-handed stirring	Brown cocoa hair	Salty dough fear
Pythagoras	Sugar Dusting	Dough Roller	Right-handed stirring	Pink icing hair	Lemon glaze fear
Tommy Tangent	Glaze Mixing	Sprinkle Cannon	Left-handed stirring	Brown cocoa hair	Lemon glaze fear
Rachel Ratio	Dough Kneading	Pastry Bag	Left-handed stirring	Pink icing hair	Salty dough fear
Grace Hopper	Yeast Raising	Jelly Injector	Left-handed stirring	Brown cocoa hair	Burnt crust fear
Betty Crocker	Frosting Magic	Sprinkle Cannon	Left-handed stirring	Brown cocoa hair	Salty dough fear
Ada Lovelace	Glaze Mixing	Pastry Bag	Left-handed stirring	Brown cocoa hair	Lemon glaze fear
Albert Einstein	Dough Kneading	Dough Roller	Right-handed stirring	Pink icing hair	Salty dough fear
Molly Math	Dough Kneading	Jelly Injector	Left-handed stirring	Brown cocoa hair	Salty dough fear
Baker Bob	Sugar Dusting	Golden Whisk	Left-handed stirring	Brown cocoa hair	Salty dough fear
Isaac Newton	Dough Kneading	Golden Whisk	Left-handed stirring	Brown cocoa hair	Burnt crust fear
Euclid	Sugar Dusting	Dough Roller	Left-handed stirring	Blue sugar hair	Lemon glaze fear
Danny Donut	Dough Kneading	Golden Whisk	Right-handed stirring	Brown cocoa hair	Burnt crust fear
Gary Geometry	Dough Kneading	Dough Roller	Left-handed stirring	Pink icing hair	Lemon glaze fear
Penny Percent	Glaze Mixing	Dough Roller	Right-handed stirring	Brown cocoa hair	Lemon glaze fear

CLUE 1 Rounding

The kitchen scale is broken and only shows rounded weights to the nearest ten. We need to round the flour bags to get the first clue!

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

T			T											T					
2000	5000	290	2000	5000	4300	290	110	7000	70	290	1700	50	70	2000	70	3700	50	20	
2900	70	200	7000	290	50	3700	5000	4300	1700	300									

Round 1,858 to the nearest thousand → **T**

Round 4,253 to the nearest hundred → **I**

Round 179 to the nearest hundred → **L**

Round 108 to the nearest ten → **F**

Round 303 to the nearest hundred → **K**

Round 2,930 to the nearest hundred → **G**

Round 18 to the nearest ten → **A**

Round 3,667 to the nearest hundred → **W**

Round 289 to the nearest ten → **E**

Round 6,648 to the nearest thousand → **D**

Round 5,460 to the nearest thousand → **H**

Round 69 to the nearest ten → **O**

Round 50 to the nearest ten → **N**

Round 1,676 to the nearest hundred → **S**

Scratch space:

CLUE 2 Addition

We found several boxes of stolen sprinkles. Let's add them up to find how many are missing and unlock the second clue.

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

T																	
4783	8984	2771	5965	8997	5965	6364	2771	8096	4783	5965	4783	3287	4205	4205	2771	9684	
8096	6281	8096	6281	2936	2867	3287	4783	8984	2936	2753	2771	5742	4783	8984	2936	8808	9684

$2338 + 2445 = \square \rightarrow \text{T}$	$3875 + 2090 = \square \rightarrow \text{S}$	$1602 + 1169 = \square \rightarrow \text{E}$
$1921 + 832 = \square \rightarrow \text{L}$	$5955 + 3729 = \square \rightarrow \text{D}$	$2977 + 3304 = \square \rightarrow \text{O}$
$1333 + 1603 = \square \rightarrow \text{A}$	$3240 + 5568 = \square \rightarrow \text{N}$	$4652 + 3444 = \square \rightarrow \text{C}$
$4310 + 4674 = \square \rightarrow \text{H}$	$1111 + 2176 = \square \rightarrow \text{I}$	$3409 + 2955 = \square \rightarrow \text{P}$
$1952 + 2253 = \square \rightarrow \text{R}$	$2940 + 6057 = \square \rightarrow \text{U}$	$2904 + 2838 = \square \rightarrow \text{F}$
$1884 + 983 = \square \rightarrow \text{W}$		

Scratch space:

CLUE 3
Subtraction

The pastry chef had a giant bowl of glaze, but some was scooped out. Subtract the leftovers to get the third clue.

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

T																		
6256	6245	2071	1954	7721	3989	1954	7721	6953	2071	8806	8806	8075	3560	5057	5604	8806	4113	1840

			T						
5057	7721	8493	6256	2695	3989	4113	8075	4075	6245

$9953 - 3697 = \boxed{} \rightarrow \boxed{\text{T}}$

$6421 - 817 = \boxed{} \rightarrow \boxed{\text{F}}$

$5453 - 2758 = \boxed{} \rightarrow \boxed{\text{Y}}$

$9626 - 3381 = \boxed{} \rightarrow \boxed{\text{H}}$

$13673 - 4867 = \boxed{} \rightarrow \boxed{\text{R}}$

$5785 - 728 = \boxed{} \rightarrow \boxed{\text{S}}$

$5433 - 3593 = \boxed{} \rightarrow \boxed{\text{M}}$

$10948 - 3995 = \boxed{} \rightarrow \boxed{\text{K}}$

$11537 - 3816 = \boxed{} \rightarrow \boxed{\text{A}}$

$11494 - 3001 = \boxed{} \rightarrow \boxed{\text{L}}$

$8586 - 511 = \boxed{} \rightarrow \boxed{\text{U}}$

$8375 - 4262 = \boxed{} \rightarrow \boxed{\text{O}}$

$6704 - 2715 = \boxed{} \rightarrow \boxed{\text{D}}$

$3589 - 29 = \boxed{} \rightarrow \boxed{\text{N}}$

$7366 - 3291 = \boxed{} \rightarrow \boxed{\text{G}}$

$2693 - 739 = \boxed{} \rightarrow \boxed{\text{B}}$

$5082 - 3011 = \boxed{} \rightarrow \boxed{\text{E}}$

Scratch space:

CLUE 4

Multiplication facts (1-12)

The baking trays are arranged in perfect rows and columns. Multiply the donuts on the trays to unlock the fourth clue.

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

B																		
55	28	2	90	132	48	2	48	2	81	10	2	90	36	121	28			
36	28	110	22	15	121	36	2	132	15	2	15	1	121	22	24	2	2	28

$5 \times 11 = \square \rightarrow \text{B}$

$6 \times 8 = \square \rightarrow \text{C}$

$7 \times 4 = \square \rightarrow \text{R}$

$1 \times 10 = \square \rightarrow \text{P}$

$2 \times 11 = \square \rightarrow \text{F}$

$1 \times 1 = \square \rightarrow \text{H}$

$9 \times 9 = \square \rightarrow \text{A}$

$11 \times 11 = \square \rightarrow \text{E}$

$9 \times 10 = \square \rightarrow \text{W}$

$3 \times 12 = \square \rightarrow \text{D}$

$2 \times 1 = \square \rightarrow \text{O}$

$12 \times 11 = \square \rightarrow \text{N}$

$3 \times 5 = \square \rightarrow \text{T}$

$8 \times 3 = \square \rightarrow \text{L}$

$11 \times 10 = \square \rightarrow \text{I}$

Scratch space:

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

A box of jelly donuts must be shared equally among the detective team. Divide them up to find the final 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:

$4 \div 2 = \boxed{}$

$14 \div 2 = \boxed{}$

$120 \div 12 = \boxed{}$

$30 \div 5 = \boxed{}$

$5 \div 5 = \boxed{}$

$144 \div 12 = \boxed{}$

$8 \div 2 = \boxed{}$

$25 \div 5 = \boxed{}$

$18 \div 2 = \boxed{}$

$36 \div 12 = \boxed{}$

$80 \div 10 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain sprays bright frosting on the walls, then rolls dough flat on the floor.
2. The villain kneads the heavy donut dough, then injects jelly into the lockers.
3. The villain dusts sugar all over the kitchen, then injects jelly into the lockers.
4. The villain mixes a messy batch of glaze, then blasts sprinkles everywhere.
5. The villain dusts sugar all over the kitchen, then rolls dough flat on the floor.
6. The villain mixes a messy batch of glaze, then rolls dough flat on the floor.
7. The villain makes the yeast rise super fast, then rolls dough flat on the floor.
8. The villain kneads the heavy donut dough, then blasts sprinkles everywhere.
9. The villain dusts sugar all over the kitchen, then blasts sprinkles everywhere.
10. The villain sprays bright frosting on the walls, then blasts sprinkles everywhere.
11. The villain dusts sugar all over the kitchen, then squeezes a sticky pastry bag.
12. The villain sprays bright frosting on the walls, then twirls a heavy whisk.

Answer Key

The Great Decimal Donut Heist

Culprit: Chef Pierre

Sugar Dusting · Pastry Bag · Left-handed stirring · Brown cocoa hair · Salty dough fear

Trail: Start 21 → Clue 1 18 → Clue 2 12 → Clue 3 5 → Clue 4 4 → Clue 5 1

Clue 1 (Rounding): "THE THIEF DOES NOT OWN A GOLDEN WHISK"

Round 1,858 to the nearest thousand = 2000 (T) · Round 4,253 to the nearest hundred = 4300 (I) · Round 179 to the nearest hundred = 200 (L) · Round 108 to the nearest ten = 110 (F) · Round 303 to the nearest hundred = 300 (K) · Round 2,930 to the nearest hundred = 2900 (G) · Round 18 to the nearest ten = 20 (A) · Round 3,667 to the nearest hundred = 3700 (W) · Round 289 to the nearest ten = 290 (E) · Round 6,648 to the nearest thousand = 7000 (D) · Round 5,460 to the nearest thousand = 5000 (H) · Round 69 to the nearest ten = 70 (O) · Round 50 to the nearest ten = 50 (N) · Round 1,676 to the nearest hundred = 1700 (S)

Clue 2 (Addition): "THE SUSPECT STIRRED COCOA WITH A LEFT HAND"

2338 + 2445 = 4783 (T) · 3875 + 2090 = 5965 (S) · 1602 + 1169 = 2771 (E) · 1921 + 832 = 2753 (L) · 5955 + 3729 = 9684 (D) · 2977 + 3304 = 6281 (O) · 1333 + 1603 = 2936 (A) · 3240 + 5568 = 8808 (N) · 4652 + 3444 = 8096 (C) · 4310 + 4674 = 8984 (H) · 1111 + 2176 = 3287 (I) · 3409 + 2955 = 6364 (P) · 1952 + 2253 = 4205 (R) · 2940 + 6057 = 8997 (U) · 2904 + 2838 = 5742 (F) · 1884 + 983 = 2867 (W)

Clue 3 (Subtraction): "THE BAD BAKER RUNS FROM SALTY DOUGH"

9953 - 3697 = 6256 (T) · 6421 - 817 = 5604 (F) · 5453 - 2758 = 2695 (Y) · 9626 - 3381 = 6245 (H) · 13673 - 4867 = 8806 (R) · 5785 - 728 = 5057 (S) · 5433 - 3593 = 1840 (M) · 10948 - 3995 = 6953 (K) · 11537 - 3816 = 7721 (A) · 11494 - 3001 = 8493 (L) · 8586 - 511 = 8075 (U) · 8375 - 4262 = 4113 (O) · 6704 - 2715 = 3989 (D) · 3589 - 29 = 3560 (N) · 7366 - 3291 = 4075 (G) · 2693 - 739 = 1954 (B) · 5082 - 3011 = 2071 (E)

Clue 4 (Multiplication facts (1-12)): "BROWN COCOA POWDER DRIFTED ONTO THE FLOOR"

$5 \times 11 = 55$ (B) · $6 \times 8 = 48$ (C) · $7 \times 4 = 28$ (R) · $1 \times 10 = 10$ (P) · $2 \times 11 = 22$ (F) · $1 \times 1 = 1$ (H) · $9 \times 9 = 81$ (A) · $11 \times 11 = 121$ (E) · $9 \times 10 = 90$ (W) · $3 \times 12 = 36$ (D) · $2 \times 1 = 2$ (O) · $12 \times 11 = 132$ (N) · $3 \times 5 = 15$ (T) · $8 \times 3 = 24$ (L) · $11 \times 10 = 110$ (I)

Clue 5 (Division facts (1-12)): surviving statement is box 11 → Chef Pierre

$4 \div 2 = 2$ · $14 \div 2 = 7$ · $120 \div 12 = 10$ · $30 \div 5 = 6$ · $5 \div 5 = 1$ · $144 \div 12 = 12$ · $8 \div 2 = 4$ · $25 \div 5 = 5$ · $18 \div 2 = 9$ · $36 \div 12 = 3$ · $80 \div 10 = 8$