



The Golden Bone Trophy Heist

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

Detective: _____ Date: _____

The big state championship is tomorrow at Wagging Tails Gymnastics Academy! But disaster has struck. Someone vaulted over the high bar and snatched Head Coach Rover's shiny Golden Bone Trophy! The suspects are all talented canine gymnasts. We need to follow the clues, do the math, and find out which gymnastic pup took the prize!

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 The Trophy Snatcher is _____

Possible suspects

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

NAME	FAVORITE EVENT	GYM BAG ACCESSORY	CHALK COLOR	FUR COLOR	FAVORITE SNACK
Rocky Roll	balance beam	grip gloves	pink chalk	golden fur	bacon bites
Laurie Woof	floor exercise	ribbon baton	white chalk	golden fur	peanut butter
Cooper Carter	uneven bars	grip gloves	white chalk	golden fur	cheese cubes
Milo Midair	uneven bars	ribbon baton	pink chalk	black fur	cheese cubes
Nastia Lickin	pommel horse	sparkly leotard	white chalk	golden fur	bacon bites
Lola Leap	floor exercise	sparkly leotard	pink chalk	spotted fur	bacon bites
Sadie Somersault	vault table	sparkly leotard	pink chalk	spotted fur	cheese cubes
Suni Leash	balance beam	warmup jacket	white chalk	golden fur	cheese cubes
Daisy Dribble	floor exercise	ribbon baton	pink chalk	golden fur	peanut butter
Mary Lou Retter	uneven bars	ribbon baton	pink chalk	black fur	bacon bites
Dominique Dawg	pommel horse	grip gloves	white chalk	golden fur	peanut butter
Bella Bounder	vault table	warmup jacket	pink chalk	black fur	bacon bites
Penny Pike	floor exercise	grip gloves	white chalk	black fur	peanut butter
Aly Raispup	balance beam	warmup jacket	white chalk	golden fur	peanut butter
Simone Barks	balance beam	ribbon baton	white chalk	golden fur	peanut butter
Buster Bounce	vault table	ribbon baton	pink chalk	black fur	cheese cubes
Carly Paws	floor exercise	wrist wraps	white chalk	spotted fur	peanut butter
Katelyn Mutts	pommel horse	wrist wraps	white chalk	golden fur	peanut butter
Shannon Tail	uneven bars	warmup jacket	pink chalk	black fur	bacon bites
Barky Comaneci	uneven bars	ribbon baton	pink chalk	spotted fur	bacon bites
Gabby Goldie	floor exercise	ribbon baton	white chalk	spotted fur	cheese cubes

CLUE 1

The gym scoreboard has a digital scale that weighs gym bags, but it only shows weights rounded to the nearest ten. Let us check the bag weights to narrow down who was here.

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

7000 110 30 9000 5000 9000 290 30 300 7000 900 370 30 9000 1700 370 7000

700 30 90 3700 90 700 90 3700 500 5000 290 4300 90 300 1300 30 7000

Round 6,591 to the nearest thousand $\rightarrow$ **T**

Round 5,200 to the nearest thousand $\rightarrow$ **U**

Round 90 to the nearest ten → **A**

Round 34 to the nearest ten $\rightarrow$ **E**

Round 111 to the nearest ten $\rightarrow$ **H**

Round 371 to the nearest ten $\rightarrow$

Round 9,239 to the nearest thousand →

Round 1,284 to the nearest hundred $\rightarrow$ **K**

Round 660 to the nearest hundred $\rightarrow$ **W**

Round 4,294 to the nearest hundred $\rightarrow$ **J**

Round 345 to the nearest hundred $\rightarrow$ **C**

Round 852 to the nearest hundred $\rightarrow$ **D**

Round 3,669 to the nearest hundred → **R**

Round 1,685 to the nearest hundred → **N**

Round 290 to the nearest ten $\rightarrow$ **P**

Round 543 to the nearest hundred → **M**

Scratch space:

CLUE 2

We need to tally up all the foam blocks in the pit to see if any are missing. Help us add the total count to find our next lead.

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

Diagram illustrating memory blocks and their addresses:

Block Address	Block Address	Block Address	Block Address	Block Address	Block Address	Block Address	Block Address	Block Address	Block Address	Block Address	Block Address	Block Address	Block Address	Block Address	Block Address	Block Address	Block Address
4725	9868	2006	9030	3995	6792	6452	3238	9385	2006	3995	2006	6248	6438	5094	4725	2006	7721
6792	3435	9385	9868	6792	4725	2006	6248	9868	5094	8488	2073						

$$2773 + 1952 = \boxed{} \rightarrow \boxed{\text{T}}$$

$$6456 + 2929 = \boxed{} \rightarrow \boxed{\mathbf{W}}$$

$$1047 + 2191 = \boxed{} \rightarrow \boxed{\text{S}}$$

$5104 + 2617 = \boxed{} \rightarrow \boxed{\text{D}}$

$$3278 + 3160 = \boxed{} \rightarrow \boxed{0}$$

$$910 + 1096 = \boxed{} \rightarrow \boxed{\text{E}}$$

$$2033 + 1402 = \boxed{} \rightarrow \boxed{\text{N}}$$

$3240 + 1854 = \square \rightarrow \mathbf{A}$

$$3174 + 3074 = \boxed{} \rightarrow \boxed{\text{C}}$$

$$2190 + 4602 = \boxed{} \rightarrow \boxed{}$$

$$2734 + 3718 = \boxed{} \rightarrow \boxed{\text{P}}$$

$1098 + 975 = \boxed{} \rightarrow \boxed{\text{K}}$

$$4019 + 4469 = \boxed{} \rightarrow \boxed{\text{L}}$$

$$4059 + 5809 = \boxed{} \rightarrow \boxed{\text{H}}$$

$$4942 + 4088 = \boxed{} \rightarrow \mathbf{G}$$

$$2133 + 1862 = \boxed{} \rightarrow \boxed{\text{R}}$$

Scratch space:

CLUE 3
Subtraction

The gym clean-up crew has a limited supply of grip tape. Subtract the used tape rolls from the total to see how many were taken by the intruder.

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

T							T									
1508	4469	6692	5368	2047	6692	2246	1508	8114	4292	3358	6692	8114	2759	1397	2246	

					T			T	T		
8311	6692	8114	6059	1527	1508	3893	1527	1508	1508	6692	2759

$3700 - 2192 = \square \rightarrow \text{[T]}$

$8076 - 4718 = \square \rightarrow \text{[M]}$

$6474 - 415 = \square \rightarrow \text{[N]}$

$5313 - 3067 = \square \rightarrow \text{[F]}$

$3887 - 2360 = \square \rightarrow \text{[U]}$

$4608 - 1849 = \square \rightarrow \text{[R]}$

$8539 - 4646 = \square \rightarrow \text{[B]}$

$7492 - 2124 = \square \rightarrow \text{[Y]}$

$9157 - 846 = \square \rightarrow \text{[P]}$

$11356 - 3242 = \square \rightarrow \text{[A]}$

$7074 - 382 = \square \rightarrow \text{[E]}$

$9002 - 4533 = \square \rightarrow \text{[H]}$

$5812 - 1520 = \square \rightarrow \text{[S]}$

$4576 - 3179 = \square \rightarrow \text{[O]}$

$2582 - 535 = \square \rightarrow \text{[L]}$

Scratch space:

CLUE 4
Multiplication facts (1-12)

The team treats are packed in neat rows inside the supply closet. Multiply the rows by the boxes in each row to count the snack inventory.

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

W																	
90	99	72	70	3	12	12	99	54	6	3	55	54	99	24	30	10	11
3	24	12	88	99	88	27	6	88	45	2	11						

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

$3 \times 2 = \square \rightarrow \boxed{\text{G}}$

$11 \times 8 = \square \rightarrow \boxed{\text{H}}$

$3 \times 10 = \square \rightarrow \boxed{\text{F}}$

$2 \times 1 = \square \rightarrow \boxed{\text{A}}$

$3 \times 9 = \square \rightarrow \boxed{\text{I}}$

$6 \times 2 = \square \rightarrow \boxed{\text{T}}$

$9 \times 6 = \square \rightarrow \boxed{\text{D}}$

$5 \times 11 = \square \rightarrow \boxed{\text{L}}$

$1 \times 11 = \square \rightarrow \boxed{\text{R}}$

$6 \times 12 = \square \rightarrow \boxed{\text{S}}$

$1 \times 3 = \square \rightarrow \boxed{\text{O}}$

$2 \times 12 = \square \rightarrow \boxed{\text{N}}$

$5 \times 2 = \square \rightarrow \boxed{\text{U}}$

$7 \times 10 = \square \rightarrow \boxed{\text{P}}$

$5 \times 9 = \square \rightarrow \boxed{\text{B}}$

$11 \times 9 = \square \rightarrow \boxed{\text{E}}$

Scratch space:

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

We want to share the practice ribbons equally among the gym classes. Divide the box of ribbons to see if the thief dropped any during their escape.

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:

$88 \div 8 = \boxed{}$

$21 \div 7 = \boxed{}$

$56 \div 8 = \boxed{}$

$16 \div 8 = \boxed{}$

$110 \div 11 = \boxed{}$

$72 \div 8 = \boxed{}$

$40 \div 8 = \boxed{}$

$12 \div 1 = \boxed{}$

$24 \div 4 = \boxed{}$

$8 \div 8 = \boxed{}$

$40 \div 5 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain did three back handsprings on the floor, then zipped up a warm warmup jacket.
2. The villain vaulted clean over the horse, then zipped up a warm warmup jacket.
3. The villain leaped across the high beam, then twirled a shiny ribbon baton.
4. The villain spun around the pommel horse, then adjusted their heavy wrist wraps.
5. The villain spun around the pommel horse, then shone bright in a sparkly leotard.
6. The villain swung high on the uneven bars, then shone bright in a sparkly leotard.
7. The villain spun around the pommel horse, then tightened their grip gloves.
8. The villain did three back handsprings on the floor, then adjusted their heavy wrist wraps.
9. The villain vaulted clean over the horse, then tightened their grip gloves.
10. The villain swung high on the uneven bars, then zipped up a warm warmup jacket.
11. The villain did three back handsprings on the floor, then twirled a shiny ribbon baton.
12. The villain leaped across the high beam, then tightened their grip gloves.

Answer Key

The Golden Bone Trophy Heist

Culprit: Katelyn Mutts

pommel horse · wrist wraps · white chalk · golden fur · peanut butter

Trail: Start 21 → Clue 1 17 → Clue 2 9 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Rounding): "THE SUSPECT DOES NOT WEAR A WARMUP JACKET"

Round 6,591 to the nearest thousand = 7000 (T) · Round 5,200 to the nearest thousand = 5000 (U) · Round 90 to the nearest ten = 90 (A) · Round 34 to the nearest ten = 30 (E) · Round 111 to the nearest ten = 110 (H) · Round 371 to the nearest ten = 370 (O) · Round 9,239 to the nearest thousand = 9000 (S) · Round 1,284 to the nearest hundred = 1300 (K) · Round 660 to the nearest hundred = 700 (W) · Round 4,294 to the nearest hundred = 4300 (J) · Round 345 to the nearest hundred = 300 (C) · Round 852 to the nearest hundred = 900 (D) · Round 3,669 to the nearest hundred = 3700 (R) · Round 1,685 to the nearest hundred = 1700 (N) · Round 290 to the nearest ten = 290 (P) · Round 543 to the nearest hundred = 500 (M)

Clue 2 (Addition): "THE GRIPS WERE COATED IN WHITE CHALK"

$2773 + 1952 = 4725$ (T) · $6456 + 2929 = 9385$ (W) · $1047 + 2191 = 3238$ (S) · $5104 + 2617 = 7721$ (D) · $3278 + 3160 = 6438$ (O) · $910 + 1096 = 2006$ (E) · $2033 + 1402 = 3435$ (N) · $3240 + 1854 = 5094$ (A) · $3174 + 3074 = 6248$ (C) · $2190 + 4602 = 6792$ (I) · $2734 + 3718 = 6452$ (P) · $1098 + 975 = 2073$ (K) · $4019 + 4469 = 8488$ (L) · $4059 + 5809 = 9868$ (H) · $4942 + 4088 = 9030$ (G) · $2133 + 1862 = 3995$ (R)

Clue 3 (Subtraction): "THEY LEFT A SMEAR OF PEANUT BUTTER"

$3700 - 2192 = 1508$ (T) · $8076 - 4718 = 3358$ (M) · $6474 - 415 = 6059$ (N) · $5313 - 3067 = 2246$ (F) · $3887 - 2360 = 1527$ (U) · $4608 - 1849 = 2759$ (R) · $8539 - 4646 = 3893$ (B) · $7492 - 2124 = 5368$ (Y) · $9157 - 846 = 8311$ (P) · $11356 - 3242 = 8114$ (A) · $7074 - 382 = 6692$ (E) · $9002 - 4533 = 4469$ (H) · $5812 - 1520 = 4292$ (S) · $4576 - 3179 = 1397$ (O) · $2582 - 535 = 2047$ (L)

Clue 4 (Multiplication facts (1-12)): "WE SPOTTED GOLDEN FUR ON THE HIGH BAR"

$10 \times 9 = 90$ (W) · $3 \times 2 = 6$ (G) · $11 \times 8 = 88$ (H) · $3 \times 10 = 30$ (F) · $2 \times 1 = 2$ (A) · $3 \times 9 = 27$ (I) · $6 \times 2 = 12$ (T) · $9 \times 6 = 54$ (D) · $5 \times 11 = 55$ (L) · $1 \times 11 = 11$ (R) · $6 \times 12 = 72$ (S) · $1 \times 3 = 3$ (O) · $2 \times 12 = 24$ (N) · $5 \times 2 = 10$ (U) · $7 \times 10 = 70$ (P) · $5 \times 9 = 45$ (B) · $11 \times 9 = 99$ (E)

Clue 5 (Division facts (1-12)): surviving statement is box 4 → Katelyn Mutts

$88 \div 8 = 11$ · $21 \div 7 = 3$ · $56 \div 8 = 7$ · $16 \div 8 = 2$ · $110 \div 11 = 10$ · $72 \div 8 = 9$ · $40 \div 8 = 5$ · $12 \div 1 = 12$ · $24 \div 4 = 6$ · $8 \div 8 = 1$ · $40 \div 5 = 8$