



The Great Aviary Heist

Grade 6 math · Fractions of a number, Percentages, Exponents, Order of operations · Reading level grades 7-9

Detective: _____ **Date:** _____

The rare Golden Millet Trophy has vanished from Featherwood Sanctuary! A stealthy feathered villain pulled off the heist right under the security roosts. Solve the mathematical clues left around the sanctuary to identify the suspect.

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 Budgie Rogue is _____

Possible suspects

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

NAME	TRICK	GEAR	DOMINANT TALON	FEATHER STYLE	DISTRACTION
Zazu Flite	Whistle Mimic	Millet Laser	Left Talon Dominant	Feather Crest	Shiny Mirror
Peanut Crest	Sonic Chirp	Brass Ring	Left Talon Dominant	Spiky Tuft	Squeaky Toy
Pip Skywing	Seed Bomb	Millet Laser	Left Talon Dominant	Smooth Head	Silver Bell
Coco Quill	Wind Flap	Millet Laser	Right Talon Dominant	Smooth Head	Shiny Mirror
Rio Songbird	Seed Bomb	Cuttlebone Shield	Right Talon Dominant	Smooth Head	Shiny Mirror
Ziggy Wings	Draft Glide	Millet Laser	Left Talon Dominant	Smooth Head	Shiny Mirror
Mango Perch	Seed Bomb	Brass Ring	Right Talon Dominant	Smooth Head	Shiny Mirror
Milo Canopy	Draft Glide	Brass Ring	Left Talon Dominant	Spiky Tuft	Silver Bell
Buster Beak	Sonic Chirp	Toy Ladder	Right Talon Dominant	Smooth Head	Shiny Mirror
Clover Hatch	Wind Flap	Toy Ladder	Right Talon Dominant	Spiky Tuft	Silver Bell
Echo Plume	Whistle Mimic	Bell Helmet	Right Talon Dominant	Spiky Tuft	Squeaky Toy
Penny Molt	Whistle Mimic	Bell Helmet	Left Talon Dominant	Feather Crest	Squeaky Toy
Kiwi Featherford	Draft Glide	Toy Ladder	Left Talon Dominant	Smooth Head	Shiny Mirror
Skye Flutter	Draft Glide	Brass Ring	Right Talon Dominant	Smooth Head	Silver Bell
Barley Tail	Sonic Chirp	Bell Helmet	Left Talon Dominant	Spiky Tuft	Shiny Mirror
Pebble Down	Wind Flap	Toy Ladder	Right Talon Dominant	Spiky Tuft	Shiny Mirror
Ruby Roost	Sonic Chirp	Cuttlebone Shield	Right Talon Dominant	Feather Crest	Silver Bell
Otis Glider	Whistle Mimic	Bell Helmet	Right Talon Dominant	Spiky Tuft	Shiny Mirror
Sunny Avian	Sonic Chirp	Bell Helmet	Left Talon Dominant	Feather Crest	Squeaky Toy
Jasper Finch	Sonic Chirp	Millet Laser	Right Talon Dominant	Spiky Tuft	Silver Bell
Nico Tweet	Sonic Chirp	Millet Laser	Right Talon Dominant	Smooth Head	Shiny Mirror

Fractions of a number

Analyzing a fraction of the digital roost flight logs narrows down the suspect list.

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

4 33 26 39 18 39 35 26 30 4 23 32 26 39 9 32 4

18 39 26 15 30 18 4 4 8 26 27 32 9 26 39 33 24 26 8 23

$1/2$ of 8 = $\rightarrow$ **T**

$$\frac{1}{3} \text{ of } 105 = \boxed{} \rightarrow \boxed{\text{P}}$$

$2/8$ of 120 = $\rightarrow$ **C**

$1/5$ of 45 = $\rightarrow$ **N**

$4/5$ of 10 = $\rightarrow$ **L**

$$1/2 \text{ of } 52 = \boxed{} \rightarrow \boxed{\text{E}}$$

$2/4$ of 78 = $\rightarrow$ **S**

6/10 of 25 = → **A**

5/10 of 66 = → **H**

$$2/8 \text{ of } 96 = \boxed{} \rightarrow \boxed{}$$

$2/10$ of 115 = $\rightarrow$ **D**

4/10 of 80 = →

$6/8$ of $36 = \square \rightarrow \mathbf{B}$

9/10 of 20 = → **U**

Scratch space:

CLUE 2 Percentages

Calculating the exact percentage of power drain across the security sensors reveals critical gear data.

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

T										T							
8	16	13	45	14	39	15	28	42	8	7	18	36	8	45	16	13	23

								T						T	T				
7	13	13	23	7	33	42	8	16	28	42	4	16	8	8	36	39	27	18	

$20\% \text{ of } 40 = \boxed{} \rightarrow \boxed{\text{T}}$

$10\% \text{ of } 330 = \boxed{} \rightarrow \boxed{\text{W}}$

$20\% \text{ of } 70 = \boxed{} \rightarrow \boxed{\text{U}}$

$50\% \text{ of } 54 = \boxed{} \rightarrow \boxed{\text{O}}$

$10\% \text{ of } 70 = \boxed{} \rightarrow \boxed{\text{S}}$

$75\% \text{ of } 56 = \boxed{} \rightarrow \boxed{\text{I}}$

$50\% \text{ of } 32 = \boxed{} \rightarrow \boxed{\text{H}}$

$5\% \text{ of } 900 = \boxed{} \rightarrow \boxed{\text{C}}$

$5\% \text{ of } 80 = \boxed{} \rightarrow \boxed{\text{G}}$

$50\% \text{ of } 26 = \boxed{} \rightarrow \boxed{\text{E}}$

$10\% \text{ of } 280 = \boxed{} \rightarrow \boxed{\text{R}}$

$10\% \text{ of } 390 = \boxed{} \rightarrow \boxed{\text{L}}$

$5\% \text{ of } 360 = \boxed{} \rightarrow \boxed{\text{N}}$

$20\% \text{ of } 115 = \boxed{} \rightarrow \boxed{\text{D}}$

$25\% \text{ of } 60 = \boxed{} \rightarrow \boxed{\text{P}}$

$40\% \text{ of } 90 = \boxed{} \rightarrow \boxed{\text{A}}$

Scratch space:

CLUE 3

Exponents

Measuring the exponential volume growth of the recorded chirp echo exposes a vital clue.

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

T											
361	49	225	27	25	169	225	16	36	243	144	

			T				T									
216	169	144	361	16	243	121	361	225	216	400	256	144	49	169	324	256

343	169	16	16	128	16	144

$19^2 = \square \rightarrow \text{T}$

$7^2 = \square \rightarrow \text{H}$

$7^3 = \square \rightarrow \text{M}$

$2^7 = \square \rightarrow \text{O}$

$4^2 = \square \rightarrow \text{R}$

$11^2 = \square \rightarrow \text{C}$

$6^3 = \square \rightarrow \text{D}$

$5^2 = \square \rightarrow \text{L}$

$12^2 = \square \rightarrow \text{S}$

$3^5 = \square \rightarrow \text{A}$

$6^2 = \square \rightarrow \text{W}$

$3^3 = \square \rightarrow \text{F}$

$18^2 = \square \rightarrow \text{N}$

$13^2 = \square \rightarrow \text{I}$

$20^2 = \square \rightarrow \text{B}$

$15^2 = \square \rightarrow \text{E}$

$4^4 = \square \rightarrow \text{Y}$

Scratch space:

CLUE 4

Order of operations

Following the proper order of operations to decode the aviary cipher unlocks hidden evidence.

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

T																	
68	11	77	36	78	77	13	77	78	65	13	68	16	23	13	77	33	

36	37	65	65	68	11	11	77	16	33	71	77	16	68	11	77	80	36

$43 + 5 \times 5 = \square \rightarrow \boxed{\text{T}}$

$64 + 7 \times 2 = \square \rightarrow \boxed{\text{C}}$

$11 \times 4 - 8 = \square \rightarrow \boxed{\text{S}}$

$10 \times 8 - 15 = \square \rightarrow \boxed{\text{O}}$

$5 + 4 \times 2 = \square \rightarrow \boxed{\text{N}}$

$9 \times 11 - 22 = \square \rightarrow \boxed{\text{E}}$

$3 + 5 \times 4 = \square \rightarrow \boxed{\text{I}}$

$17 + 2 \times 8 = \square \rightarrow \boxed{\text{D}}$

$24 + 7 \times 8 = \square \rightarrow \boxed{\text{R}}$

$8 \times 11 - 17 = \square \rightarrow \boxed{\text{F}}$

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

$2 + 5 \times 7 = \square \rightarrow \boxed{\text{M}}$

$4 \times 7 - 12 = \square \rightarrow \boxed{\text{A}}$

Scratch space:

CLUE 5**Fractions of a number - the last clue**

Checking a fraction of the feather dust samples gathered from the trophy pedestal yields final proof.

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:

$2/8 \text{ of } 44 = \boxed{}$

$5/10 \text{ of } 12 = \boxed{}$

$1/2 \text{ of } 10 = \boxed{}$

$1/4 \text{ of } 32 = \boxed{}$

$7/10 \text{ of } 10 = \boxed{}$

$1/8 \text{ of } 96 = \boxed{}$

$3/6 \text{ of } 20 = \boxed{}$

$1/4 \text{ of } 16 = \boxed{}$

$3/6 \text{ of } 4 = \boxed{}$

$2/8 \text{ of } 4 = \boxed{}$

$1/10 \text{ of } 90 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain executed a draft glide down the hallway, then escaped using a brass ring.
2. The villain used a whistle mimic in the hallway, then escaped wearing a bell helmet.
3. The villain whipped up a wind flap in the hallway, then escaped using a millet laser.
4. The villain used a whistle mimic in the hallway, then escaped using a toy ladder.
5. The villain blasted a sonic chirp through the hallway, then escaped using a millet laser.
6. The villain dropped a seed bomb in the hallway, then escaped using a brass ring.
7. The villain whipped up a wind flap in the hallway, then escaped using a toy ladder.
8. The villain whipped up a wind flap in the hallway, then escaped wearing a bell helmet.
9. The villain blasted a sonic chirp through the hallway, then escaped using a brass ring.
10. The villain executed a draft glide down the hallway, then escaped using a millet laser.
11. The villain blasted a sonic chirp through the hallway, then escaped using a toy ladder.
12. The villain used a whistle mimic in the hallway, then escaped behind a cuttlebone shield.

Answer Key

The Great Aviary Heist

Culprit: Coco Quill

Wind Flap · Millet Laser · Right Talon Dominant · Smooth Head · Shiny Mirror

Trail: Start 21 → Clue 1 19 → Clue 2 10 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Fractions of a number): "THE SUSPECT DOES NOT USE A CUTTLEBONE SHIELD"

$\frac{1}{2}$ of 8 = 4 (T) · $\frac{1}{3}$ of 105 = 35 (P) · $\frac{2}{8}$ of 120 = 30 (C) · $\frac{1}{5}$ of 45 = 9 (N) · $\frac{4}{5}$ of 10 = 8 (L) · $\frac{1}{2}$ of 52 = 26 (E) · $\frac{2}{4}$ of 78 = 39 (S) · $\frac{6}{10}$ of 25 = 15 (A) · $\frac{5}{10}$ of 66 = 33 (H) · $\frac{2}{8}$ of 96 = 24 (I) · $\frac{2}{10}$ of 115 = 23 (D) · $\frac{4}{10}$ of 80 = 32 (O) · $\frac{6}{8}$ of 36 = 27 (B) · $\frac{9}{10}$ of 20 = 18 (U)

Clue 2 (Percentages): "THE CULPRIT SNATCHED SEEDS WITH RIGHT TALON"

20% of 40 = 8 (T) · 10% of 330 = 33 (W) · 20% of 70 = 14 (U) · 50% of 54 = 27 (O) · 10% of 70 = 7 (S) · 75% of 56 = 42 (I) · 50% of 32 = 16 (H) · 5% of 900 = 45 (C) · 5% of 80 = 4 (G) · 50% of 26 = 13 (E) · 10% of 280 = 28 (R) · 10% of 390 = 39 (L) · 5% of 360 = 18 (N) · 20% of 115 = 23 (D) · 25% of 60 = 15 (P) · 40% of 90 = 36 (A)

Clue 3 (Exponents): "THE FLIER WAS DISTRACTED BY SHINY MIRRORS"

$19^{\wedge}2 = 361$ (T) · $7^{\wedge}2 = 49$ (H) · $7^{\wedge}3 = 343$ (M) · $2^{\wedge}7 = 128$ (O) · $4^{\wedge}2 = 16$ (R) · $11^{\wedge}2 = 121$ (C) · $6^{\wedge}3 = 216$ (D) · $5^{\wedge}2 = 25$ (L) · $12^{\wedge}2 = 144$ (S) · $3^{\wedge}5 = 243$ (A) · $6^{\wedge}2 = 36$ (W) · $3^{\wedge}3 = 27$ (F) · $18^{\wedge}2 = 324$ (N) · $13^{\wedge}2 = 169$ (I) · $20^{\wedge}2 = 400$ (B) · $15^{\wedge}2 = 225$ (E) · $4^{\wedge}4 = 256$ (Y)

Clue 4 (Order of operations): "THE SCENE CONTAINED SMOOTH HEAD FEATHERS"

$43 + 5 \times 5 = 68$ (T) · $64 + 7 \times 2 = 78$ (C) · $11 \times 4 - 8 = 36$ (S) · $10 \times 8 - 15 = 65$ (O) · $5 + 4 \times 2 = 13$ (N) · $9 \times 11 - 22 = 77$ (E) · $3 + 5 \times 4 = 23$ (I) · $17 + 2 \times 8 = 33$ (D) · $24 + 7 \times 8 = 80$ (R) · $8 \times 11 - 17 = 71$ (F) · $2 + 3 \times 3 = 11$ (H) · $2 + 5 \times 7 = 37$ (M) · $4 \times 7 - 12 = 16$ (A)

Clue 5 (Fractions of a number): surviving statement is box 3 → Coco Quill

$\frac{2}{8}$ of 44 = 11 · $\frac{5}{10}$ of 12 = 6 · $\frac{1}{2}$ of 10 = 5 · $\frac{1}{4}$ of 32 = 8 · $\frac{7}{10}$ of 10 = 7 · $\frac{1}{8}$ of 96 = 12 · $\frac{3}{6}$ of 20 = 10 · $\frac{1}{4}$ of 16 = 4 · $\frac{3}{6}$ of 4 = 2 · $\frac{2}{8}$ of 4 = 1 · $\frac{1}{10}$ of 90 = 9