



The Halloween Archery Mystery

Grade 5 math · Fractions of a number, Order of operations, Multiplication, Rounding, Division · Reading level grades 5-6

Detective: _____ **Date:** _____

During the annual Spooky Bow Tournament, a mysterious archer sabotaged the final round and stole the Golden Quiver! Master detective, track down the rogue shooter using the clues left at the archery range.

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 Phantom Archer is _____

Possible suspects

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

NAME	ATTACK STYLE	SPECIAL GEAR	DOMINANT HAND	QUIVER RIBBON COLOR	VULNERABILITY
Hazel Craft	Pumpkin Blast	Ribbon Traps	Right Handed	Neon Orange	Silver Bell
Luna Spook	Ghost Flight	Glowing Arrows	Left Handed	Midnight Black	Silver Bell
Piper Arrow	Cobweb Trap	Candy Corn Tips	Left Handed	Neon Orange	Silver Bell
Boris Blade	Pumpkin Blast	Ghostly Quivers	Right Handed	Neon Orange	Silver Bell
Willow Moon	Bat Swarm	Candy Corn Tips	Left Handed	Neon Orange	Garlic Oil
Penny Pumpkin	Ghost Flight	Candy Corn Tips	Left Handed	Midnight Black	Bright Lanterns
Wednesday Addams	Shadow Shot	Candy Corn Tips	Right Handed	Midnight Black	Bright Lanterns
Oliver Queen	Ghost Flight	Poison Ivy Strings	Right Handed	Neon Orange	Silver Bell
Bram Stoker	Pumpkin Blast	Candy Corn Tips	Left Handed	Midnight Black	Silver Bell
Robin Hood	Cobweb Trap	Ghostly Quivers	Right Handed	Neon Orange	Silver Bell
Merida	Bat Swarm	Glowing Arrows	Right Handed	Midnight Black	Bright Lanterns
Stella Shadow	Shadow Shot	Glowing Arrows	Right Handed	Midnight Black	Bright Lanterns
Wendy Witch	Shadow Shot	Poison Ivy Strings	Left Handed	Pumpkin Purple	Silver Bell
Drake Haunt	Ghost Flight	Poison Ivy Strings	Right Handed	Midnight Black	Silver Bell
Silas Night	Bat Swarm	Ghostly Quivers	Right Handed	Midnight Black	Bright Lanterns
Clint Barton	Cobweb Trap	Poison Ivy Strings	Left Handed	Midnight Black	Silver Bell
Katniss Everdeen	Cobweb Trap	Glowing Arrows	Right Handed	Neon Orange	Bright Lanterns
Hunter Fletcher	Shadow Shot	Poison Ivy Strings	Left Handed	Neon Orange	Garlic Oil
Rowan Quiver	Ghost Flight	Candy Corn Tips	Right Handed	Pumpkin Purple	Silver Bell
Bruno Target	Shadow Shot	Poison Ivy Strings	Left Handed	Pumpkin Purple	Bright Lanterns
Jack Skellington	Shadow Shot	Ribbon Traps	Right Handed	Midnight Black	Bright Lanterns

Fractions of a number

You inspect the archery range log where fractional counts of targets hit were recorded during dusk.

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

39 20 15 6 3 37 37 34 3 4 13 21 15 30 4 21 39

2 30 15 11 3 17 17 21 4 39 11 34 10 30

4/8 of 78 = → **T**

$$\frac{1}{5} \text{ of } 100 = \boxed{} \rightarrow \boxed{\text{H}}$$

4/8 of 42 = → **0**

$$\frac{1}{4} \text{ of } 16 = \boxed{} \rightarrow \boxed{\text{N}}$$

$3/6$ of $68 = \boxed{} \rightarrow \boxed{\text{A}}$

$$1/10 \text{ of } 150 = \boxed{} \rightarrow \boxed{\text{E}}$$

$$5/10 \text{ of } 20 = \boxed{} \rightarrow \boxed{\text{P}}$$

$$\frac{1}{4} \text{ of } 148 = \boxed{} \rightarrow \boxed{\text{L}}$$

$$\frac{1}{3} \text{ of } 33 = \boxed{} \rightarrow \boxed{\text{R}}$$

$$1/6 \text{ of } 36 = \boxed{} \rightarrow \boxed{\mathbf{v}}$$

$3/6$ of $34 = \boxed{} \rightarrow \boxed{\text{B}}$

$\frac{1}{2}$ of 4 = $\rightarrow$ **U**

2/10 of 150 = → **S**

$$3/6 \text{ of } 26 = \boxed{} \rightarrow \boxed{\text{D}}$$

$3/4$ of 4 = $\rightarrow$

Scratch space:

CLUE 2

Order of operations

You calculate the tournament score using parentheses and multi step rules posted on the judge bench.

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

W									W						
80	62	22	59	76	36	36	36	51	80	51	24	62	37	7	22

7	51	59	18	76	18	51	24	64	7	76	24

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

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

$3 + 8 \times 7 = \square \rightarrow \boxed{N}$

$8 \times 9 - 8 = \square \rightarrow \boxed{C}$

$16 + 5 \times 7 = \square \rightarrow \boxed{A}$

$6 \times 9 - 18 = \square \rightarrow \boxed{S}$

$9 \times 10 - 14 = \square \rightarrow \boxed{E}$

$10 + 9 \times 3 = \square \rightarrow \boxed{G}$

$1 + 7 \times 3 = \square \rightarrow \boxed{T}$

$42 + 5 \times 4 = \square \rightarrow \boxed{I}$

$12 + 6 \times 2 = \square \rightarrow \boxed{R}$

$5 \times 6 - 12 = \square \rightarrow \boxed{D}$

Scratch space:

CLUE 3

Multiplication facts (1-12)

You check the storage shed where Halloween bow supplies were organized into equal rows of crate stacks.

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

B							B		B					
8	88	36	12	72	25	72	8	121	8	110	36	30	56	14

												B	
88	50	12	14	25	110	12	40	12	25	50	110	8	121

$8 \times 1 = \square \rightarrow \text{B}$

$6 \times 2 = \square \rightarrow \text{N}$

$5 \times 8 = \square \rightarrow \text{S}$

$6 \times 5 = \square \rightarrow \text{G}$

$8 \times 11 = \square \rightarrow \text{L}$

$5 \times 5 = \square \rightarrow \text{E}$

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

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

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

$10 \times 5 = \square \rightarrow \text{A}$

$6 \times 12 = \square \rightarrow \text{D}$

$8 \times 7 = \square \rightarrow \text{H}$

$7 \times 2 = \square \rightarrow \text{T}$

Scratch space:

CLUE 4

Rounding

The digital scoreboard at the Haunted Archery Range rounded all player scores to the nearest hundred.

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

M																	
90	2300	70	170	2300	7000	900	1100	20	290	500	4300	1700	30	2000	370	200	170

1100	900	430	1100	500	370	7000

Round 93 to the nearest ten → **M**

Round 2,336 to the nearest hundred → **I**

Round 219 to the nearest hundred → **O**

Round 167 to the nearest ten → **N**

Round 4,281 to the nearest hundred → **C**

Round 27 to the nearest ten → **F**

Round 70 to the nearest ten → **D**

Round 16 to the nearest ten → **B**

Round 548 to the nearest hundred → **A**

Round 1,707 to the nearest hundred → **K**

Round 7,260 to the nearest thousand → **G**

Round 372 to the nearest ten → **R**

Round 426 to the nearest ten → **E**

Round 294 to the nearest ten → **L**

Round 2,277 to the nearest thousand → **U**

Round 1,088 to the nearest hundred → **T**

Round 938 to the nearest hundred → **H**

Scratch space:

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

You split the remaining spooky target tokens equally among the detective squads to narrow down the suspects.

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:

$81 \div 9 = \boxed{}$

$60 \div 6 = \boxed{}$

$30 \div 10 = \boxed{}$

$11 \div 1 = \boxed{}$

$42 \div 6 = \boxed{}$

$45 \div 9 = \boxed{}$

$72 \div 6 = \boxed{}$

$3 \div 3 = \boxed{}$

$36 \div 6 = \boxed{}$

$14 \div 7 = \boxed{}$

$56 \div 7 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain launches a pumpkin blast, then coats poison ivy strings.
2. The villain fires a shadow shot, then sets ribbon traps.
3. The villain fires a shadow shot, then loads candy corn tips.
4. The villain summons a bat swarm, then snatches ghostly quivers.
5. The villain summons a bat swarm, then sets ribbon traps.
6. The villain weaves a cobweb trap, then ignites glowing arrows.
7. The villain weaves a cobweb trap, then coats poison ivy strings.
8. The villain takes ghost flight, then ignites glowing arrows.
9. The villain summons a bat swarm, then ignites glowing arrows.
10. The villain fires a shadow shot, then ignites glowing arrows.
11. The villain launches a pumpkin blast, then sets ribbon traps.
12. The villain weaves a cobweb trap, then loads candy corn tips.

Answer Key

The Halloween Archery Mystery

Culprit: Silas Night

Bat Swarm · Ghostly Quivers · Right Handed · Midnight Black · Bright Lanterns

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

Clue 1 (Fractions of a number): "THE VILLAIN DOES NOT USE RIBBON TRAPS"

$\frac{4}{8}$ of 78 = 39 (T) · $\frac{1}{5}$ of 100 = 20 (H) · $\frac{4}{8}$ of 42 = 21 (O) · $\frac{1}{4}$ of 16 = 4 (N) · $\frac{3}{6}$ of 68 = 34 (A) · $\frac{1}{10}$ of 150 = 15 (E) · $\frac{5}{10}$ of 20 = 10 (P) · $\frac{1}{4}$ of 148 = 37 (L) · $\frac{1}{3}$ of 33 = 11 (R) · $\frac{1}{6}$ of 36 = 6 (V) · $\frac{3}{6}$ of 34 = 17 (B) · $\frac{1}{2}$ of 4 = 2 (U) · $\frac{2}{10}$ of 150 = 30 (S) · $\frac{3}{6}$ of 26 = 13 (D) · $\frac{3}{4}$ of 4 = 3 (I)

Clue 2 (Order of operations): "WITNESS SAW A RIGHT HANDED ARCHER"

$7 \times 12 - 4 = 80$ (W) · $3 + 2 \times 2 = 7$ (H) · $3 + 8 \times 7 = 59$ (N) · $8 \times 9 - 8 = 64$ (C) · $16 + 5 \times 7 = 51$ (A) · $6 \times 9 - 18 = 36$ (S) · $9 \times 10 - 14 = 76$ (E) · $10 + 9 \times 3 = 37$ (G) · $1 + 7 \times 3 = 22$ (T) · $42 + 5 \times 4 = 62$ (I) · $12 + 6 \times 2 = 24$ (R) · $5 \times 6 - 12 = 18$ (D)

Clue 3 (Multiplication facts (1-12)): "BLINDED BY BRIGHT LANTERNS NEARBY"

$8 \times 1 = 8$ (B) · $6 \times 2 = 12$ (N) · $5 \times 8 = 40$ (S) · $6 \times 5 = 30$ (G) · $8 \times 11 = 88$ (L) · $5 \times 5 = 25$ (E) · $12 \times 3 = 36$ (I) · $11 \times 10 = 110$ (R) · $11 \times 11 = 121$ (Y) · $10 \times 5 = 50$ (A) · $6 \times 12 = 72$ (D) · $8 \times 7 = 56$ (H) · $7 \times 2 = 14$ (T)

Clue 4 (Rounding): "MIDNIGHT BLACK FUR ON THE TARGET"

Round 93 to the nearest ten = 90 (M) · Round 2,336 to the nearest hundred = 2300 (I) · Round 219 to the nearest hundred = 200 (O) · Round 167 to the nearest ten = 170 (N) · Round 4,281 to the nearest hundred = 4300 (C) · Round 27 to the nearest ten = 30 (F) · Round 70 to the nearest ten = 70 (D) · Round 16 to the nearest ten = 20 (B) · Round 548 to the nearest hundred = 500 (A) · Round 1,707 to the nearest hundred = 1700 (K) · Round 7,260 to the nearest thousand = 7000 (G) · Round 372 to the nearest ten = 370 (R) · Round 426 to the nearest ten = 430 (E) · Round 294 to the nearest ten = 290 (L) · Round 2,277 to the nearest thousand = 2000 (U) · Round 1,088 to the nearest hundred = 1100 (T) · Round 938 to the nearest hundred = 900 (H)

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

$81 \div 9 = 9$ · $60 \div 6 = 10$ · $30 \div 10 = 3$ · $11 \div 1 = 11$ · $42 \div 6 = 7$ · $45 \div 9 = 5$ · $72 \div 6 = 12$ · $3 \div 3 = 1$ · $36 \div 6 = 6$ · $14 \div 7 = 2$ · $56 \div 7 = 8$