



The Mystery of the Missing Crystal Horn

Grade 5 math · Place value, Addition, Subtraction, Multiplication, Division · Reading level grades 5-6

Detective: _____ Date: _____

The rare Starlight Horn has disappeared from the central pedestal in Glittercloud Sanctuary. Use your deductive skills and math clues to track down the thief before the sanctuary loses its magic glow.

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 horn thief is _____

Possible suspects

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

NAME	MAGIC AURA	SPECIAL SKILL	HOOFPRINT STANCE	MANE COLOR	DISLIKED SNACK
Koa Breeze	Star Glow	Teleportation	Right Hoofed	Silver Blue Mane	Bitter Berries
Milo Mist	Sun Flare	Mind Whisper	Right Hoofed	Pastel Pink Mane	Bitter Berries
Trixie Twinkle	Rainbow Beam	Mind Whisper	Right Hoofed	Silver Blue Mane	Bitter Berries
Willow Whicker	Moon Shimmer	Time Warp	Right Hoofed	Pastel Pink Mane	Stale Oatcakes
Phoebe Pegasus	Rainbow Beam	Shield Wave	Right Hoofed	Silver Blue Mane	Sour Apples
Glimmer Grace	Crystal Spark	Flying Wings	Left Hoofed	Golden Yellow Mane	Stale Oatcakes
Lyra Light	Moon Shimmer	Time Warp	Right Hoofed	Silver Blue Mane	Stale Oatcakes
Celestia Star	Crystal Spark	Flying Wings	Right Hoofed	Pastel Pink Mane	Bitter Berries
Jasper Meadow	Star Glow	Shield Wave	Left Hoofed	Pastel Pink Mane	Stale Oatcakes
Flora Blossom	Moon Shimmer	Mind Whisper	Left Hoofed	Golden Yellow Mane	Bitter Berries
Dante Dust	Sun Flare	Teleportation	Right Hoofed	Pastel Pink Mane	Bitter Berries
Indigo Iris	Moon Shimmer	Mind Whisper	Left Hoofed	Pastel Pink Mane	Stale Oatcakes
Astrid Aurora	Crystal Spark	Shield Wave	Right Hoofed	Golden Yellow Mane	Bitter Berries
Sienna Sunset	Crystal Spark	Mind Whisper	Right Hoofed	Pastel Pink Mane	Sour Apples
Barnaby Prism	Sun Flare	Mind Whisper	Left Hoofed	Pastel Pink Mane	Bitter Berries
Nova Spark	Crystal Spark	Time Warp	Right Hoofed	Pastel Pink Mane	Bitter Berries
Luna Opal	Rainbow Beam	Flying Wings	Right Hoofed	Pastel Pink Mane	Bitter Berries
Gideon Gale	Sun Flare	Teleportation	Right Hoofed	Golden Yellow Mane	Sour Apples
Callum Comet	Moon Shimmer	Shield Wave	Left Hoofed	Pastel Pink Mane	Sour Apples
Zephyr Hoof	Sun Flare	Time Warp	Right Hoofed	Golden Yellow Mane	Sour Apples
Orion Cloud	Star Glow	Flying Wings	Right Hoofed	Pastel Pink Mane	Stale Oatcakes

CLUE 1

The sanctuary archivist examines the vault security lock where the place value of each digit reveals a secret code.

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

70 9000 60 3000 5000 40 40 400 5000 80 4000 600 60 800 80 600 70

30 800 60 70 5000 2000 60 6000 400 20 100

☐ $\rightarrow$ **T**

$$\square \rightarrow 0$$

☐ $\rightarrow$ **R**

? → *A*

☐ $\rightarrow$ **P**

→ 1

→ **S**

→ **v**

→ **W**

☐ → **L**

☐ → **M**

☐ → **H**

☐ → ☒ U

☐ → **D**

☐ → **E**

→ N

Scratch space:

CLUE 2 Addition

To gather the next piece of evidence, the team sums up all the magic energy readings recorded around the crime scene.

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

T												T						
6720	7155	8273	7155	3284	3284	8229	3562	4533	4152	3186	6720	7908	7155	3284	4292	7908	7038	

				T									T		
4533	4152	3995	7155	6720	7155	3284	3284	8229	8273	7639	7908	6720	8273	3562	

3597 + 3123 = → T	1630 + 2365 = → G	962 + 2224 = → N
1843 + 1441 = → O	2567 + 1585 = → I	3049 + 5224 = → E
3135 + 1398 = → R	2179 + 4976 = → H	4845 + 2794 = → D
1476 + 2086 = → P	2617 + 1675 = → W	4868 + 3040 = → S
4949 + 3280 = → F	2506 + 4532 = → A	

Scratch space:

CLUE 3

Subtraction

Comparing the original supply of star fruit to what remains reveals exactly how much was taken during the escape.

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

T									T										
5995	7698	5967	7710	4282	5967	6506	1814	5995	5118	3467	4282	5967	6823	6506	2934	6506	3401		

						T	T												
3546	3467	6596	4935	6141	1416	5995	5995	5967	3467	6141	5967	3467	3467	1416	5967	7710			

$10442 - 4447 = \square \rightarrow \text{[T]}$

$7292 - 2174 = \square \rightarrow \text{[U]}$

$3904 - 358 = \square \rightarrow \text{[F]}$

$4519 - 3103 = \square \rightarrow \text{[I]}$

$5397 - 3583 = \square \rightarrow \text{[K]}$

$6477 - 3543 = \square \rightarrow \text{[W]}$

$6833 - 2551 = \square \rightarrow \text{[N]}$

$11520 - 3822 = \square \rightarrow \text{[H]}$

$10041 - 3900 = \square \rightarrow \text{[B]}$

$6986 - 163 = \square \rightarrow \text{[D]}$

$7934 - 1338 = \square \rightarrow \text{[O]}$

$8543 - 2576 = \square \rightarrow \text{[E]}$

$8446 - 1940 = \square \rightarrow \text{[A]}$

$5237 - 302 = \square \rightarrow \text{[M]}$

$9178 - 1468 = \square \rightarrow \text{[S]}$

$5366 - 1965 = \square \rightarrow \text{[Y]}$

$6097 - 2630 = \square \rightarrow \text{[R]}$

Scratch space:

CLUE 4

Multiplication facts (1-12)

The guard calculates the total magic ribbons available by multiplying the number of display shelves in the hall.

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

S						S					S								
16	2	100	7	50	54	16	96	121	11	7	16	2	20	18	11	36	50	1	
40	7	50	20	99	20	100	20	121	96	42	50	54							

$8 \times 2 = \square \rightarrow \text{S}$

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

$1 \times 7 = \square \rightarrow \text{A}$

$6 \times 7 = \square \rightarrow \text{U}$

$1 \times 11 = \square \rightarrow \text{P}$

$8 \times 12 = \square \rightarrow \text{O}$

$6 \times 3 = \square \rightarrow \text{L}$

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

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

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

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

$4 \times 5 = \square \rightarrow \text{E}$

$11 \times 9 = \square \rightarrow \text{W}$

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

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

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

Scratch space:

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

To decode the final clue, the remaining crystal charms must be shared equally among the sanctuary stables.

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:

$21 \div 7 = \boxed{}$

$144 \div 12 = \boxed{}$

$27 \div 3 = \boxed{}$

$44 \div 11 = \boxed{}$

$10 \div 1 = \boxed{}$

$2 \div 2 = \boxed{}$

$11 \div 1 = \boxed{}$

$14 \div 7 = \boxed{}$

$56 \div 7 = \boxed{}$

$5 \div 1 = \boxed{}$

$35 \div 5 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain flashed a bright star glow, then blocked the door with a shield wave.
2. The villain fired a rainbow beam, then blocked the door with a shield wave.
3. The villain fired a rainbow beam, then flown away with wings.
4. The villain blazed a hot sun flare, then blocked the door with a shield wave.
5. The villain cast a soft moon shimmer, then blocked the door with a shield wave.
6. The villain blazed a hot sun flare, then sent a sneaky mind whisper.
7. The villain zapped a crystal spark, then vanished using teleportation.
8. The villain blazed a hot sun flare, then escaped with a time warp.
9. The villain blazed a hot sun flare, then vanished using teleportation.
10. The villain cast a soft moon shimmer, then sent a sneaky mind whisper.
11. The villain zapped a crystal spark, then escaped with a time warp.
12. The villain zapped a crystal spark, then flown away with wings.

Answer Key

The Mystery of the Missing Crystal Horn

Culprit: Milo Mist

Sun Flare · Mind Whisper · Right Hoofed · Pastel Pink Mane · Bitter Berries

Trail: Start 21 → Clue 1 17 → Clue 2 11 → Clue 3 7 → Clue 4 4 → Clue 5 1

Clue 1 (Place value): "THE VILLAIN DOES NOT USE TIME WARP"

What is the value of the 7 in 591,174? = 70 (T) · What is the value of the 6 in 71,650? = 600 (O) · What is the value of the 2 in 591,720? = 20 (R) · What is the value of the 4 in 909,431? = 400 (A) · What is the value of the 1 in 70,100? = 100 (P) · What is the value of the 5 in 45,924? = 5000 (I) · What is the value of the 8 in 74,847? = 800 (S) · What is the value of the 3 in 753,262? = 3000 (V) · What is the value of the 6 in 246,513? = 6000 (W) · What is the value of the 4 in 756,248? = 40 (L) · What is the value of the 2 in 852,611? = 2000 (M) · What is the value of the 9 in 579,361? = 9000 (H) · What is the value of the 3 in 618,832? = 30 (U) · What is the value of the 4 in 64,891? = 4000 (D) · What is the value of the 6 in 35,869? = 60 (E) · What is the value of the 8 in 633,784? = 80 (N)

Clue 2 (Addition): "THE HOOFPRIINT SHOWS A RIGHT HOOFFED STEP"

3597 + 3123 = 6720 (T) · 1630 + 2365 = 3995 (G) · 962 + 2224 = 3186 (N) · 1843 + 1441 = 3284 (O) · 2567 + 1585 = 4152 (I) · 3049 + 5224 = 8273 (E) · 3135 + 1398 = 4533 (R) · 2179 + 4976 = 7155 (H) · 4845 + 2794 = 7639 (D) · 1476 + 2086 = 3562 (P) · 2617 + 1675 = 4292 (W) · 4868 + 3040 = 7908 (S) · 4949 + 3280 = 8229 (F) · 2506 + 4532 = 7038 (A)

Clue 3 (Subtraction): "THE SNEAK TURNED AWAY FROM BITTER BERRIES"

10442 - 4447 = 5995 (T) · 7292 - 2174 = 5118 (U) · 3904 - 358 = 3546 (F) · 4519 - 3103 = 1416 (I) · 5397 - 3583 = 1814 (K) · 6477 - 3543 = 2934 (W) · 6833 - 2551 = 4282 (N) · 11520 - 3822 = 7698 (H) · 10041 - 3900 = 6141 (B) · 6986 - 163 = 6823 (D) · 7934 - 1338 = 6596 (O) · 8543 - 2576 = 5967 (E) · 8446 - 1940 = 6506 (A) · 5237 - 302 = 4935 (M) · 9178 - 1468 = 7710 (S) · 5366 - 1965 = 3401 (Y) · 6097 - 2630 = 3467 (R)

Clue 4 (Multiplication facts (1-12)): "STRANDS OF PASTEL PINK MANE WERE FOUND"

$8 \times 2 = 16$ (S) · $2 \times 1 = 2$ (T) · $1 \times 7 = 7$ (A) · $6 \times 7 = 42$ (U) · $1 \times 11 = 11$ (P) · $8 \times 12 = 96$ (O) · $6 \times 3 = 18$ (L) · $5 \times 8 = 40$ (M) · $9 \times 6 = 54$ (D) · $11 \times 11 = 121$ (F) · $12 \times 3 = 36$ (I) · $4 \times 5 = 20$ (E) · $11 \times 9 = 99$ (W) · $5 \times 10 = 50$ (N) · $1 \times 1 = 1$ (K) · $10 \times 10 = 100$ (R)

Clue 5 (Division facts (1-12)): surviving statement is box 6 → Milo Mist

$21 \div 7 = 3$ · $144 \div 12 = 12$ · $27 \div 3 = 9$ · $44 \div 11 = 4$ · $10 \div 1 = 10$ · $2 \div 2 = 1$ · $11 \div 1 = 11$ · $14 \div 7 = 2$ · $56 \div 7 = 8$ · $5 \div 1 = 5$ · $35 \div 5 = 7$