



The Case of the Missing Phantom Tome

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

Detective: _____ Date: _____

Someone has snuck into the restricted archives of the Phantom Manor Academy and stolen the legendary Whispering Ledger! The suspect is one of our 24 student spirits or trainee hunters. We need to analyze the spooky residue left behind to find the thief before the midnight bell tolls.

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 rogue specter is _____

Possible suspects

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

NAME	GHOSTLY ACTION	EERIE TRICK	SPARK HANDEDNESS	ECTO MIST COLOR	GHOST TRAP TOOL
Bella Wraith	Possess Suit of Armor	Flicker Candle Flames	Left-Handed Sparks	Neon Green Glow	Ultra Violet Light
Wendy	Rattle Old Chains	Create Eerie Echoes	Right-Handed Sparks	Ecto Blue Mist	Poltergeist Vacuum
Gideon Graves	Rattle Old Chains	Haunt Grand Pianos	Left-Handed Sparks	Spooky Silver Mist	Salt Circle Dust
Specter Sam	Possess Suit of Armor	Haunt Grand Pianos	Right-Handed Sparks	Neon Green Glow	Ultra Violet Light
Mystic Molly	Levitate Bookcases	Create Eerie Echoes	Left-Handed Sparks	Ecto Blue Mist	Poltergeist Vacuum
Ray Stantz	Phase Through Walls	Haunt Grand Pianos	Left-Handed Sparks	Spooky Silver Mist	Salt Circle Dust
Banshee Billy	Levitate Bookcases	Haunt Grand Pianos	Left-Handed Sparks	Ecto Blue Mist	Poltergeist Vacuum
Phantom Pip	Chill the Air	Create Eerie Echoes	Right-Handed Sparks	Neon Green Glow	Poltergeist Vacuum
Sir Simon	Phase Through Walls	Summon Glow-bugs	Left-Handed Sparks	Ecto Blue Mist	Poltergeist Vacuum
Ghostly Gabe	Chill the Air	Flicker Candle Flames	Left-Handed Sparks	Spooky Silver Mist	Salt Circle Dust
Egon Spengler	Chill the Air	Tangle Dusty Curtains	Right-Handed Sparks	Spooky Silver Mist	Salt Circle Dust
Peter Venkman	Phase Through Walls	Summon Glow-bugs	Left-Handed Sparks	Neon Green Glow	Poltergeist Vacuum
Haunting Harvey	Chill the Air	Summon Glow-bugs	Right-Handed Sparks	Spooky Silver Mist	Poltergeist Vacuum
Eerie Ernie	Possess Suit of Armor	Tangle Dusty Curtains	Right-Handed Sparks	Ecto Blue Mist	Poltergeist Vacuum
Penny Dreadful	Levitate Bookcases	Summon Glow-bugs	Right-Handed Sparks	Spooky Silver Mist	Salt Circle Dust
Casper	Chill the Air	Create Eerie Echoes	Right-Handed Sparks	Ecto Blue Mist	Salt Circle Dust
Myrtle	Rattle Old Chains	Summon Glow-bugs	Right-Handed Sparks	Spooky Silver Mist	Salt Circle Dust
Winston Zeddemore	Levitate Bookcases	Haunt Grand Pianos	Right-Handed Sparks	Spooky Silver Mist	Salt Circle Dust
Jasper	Possess Suit of Armor	Create Eerie Echoes	Right-Handed Sparks	Spooky Silver Mist	Poltergeist Vacuum
Spike Shadow	Chill the Air	Summon Glow-bugs	Right-Handed Sparks	Spooky Silver Mist	Salt Circle Dust
Polly Geist	Possess Suit of Armor	Tangle Dusty Curtains	Right-Handed Sparks	Neon Green Glow	Salt Circle Dust

CLUE 1 Multiplication facts (1-12)

We find a spectral grid of glowing runes left behind in the dust. The runes are arranged in tidy rows and columns. Multiply the rows by the columns to count the total runes and decipher this first clue.

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

Diagram illustrating a sequence of numbers arranged in two rows, with some boxes highlighted in orange and labeled 'T'.

Top Row (18 boxes):

- Box 1 (Orange, T): 64
- Box 2 (White): 7
- Box 3 (White): 36
- Box 4 (White): 21
- Box 5 (White): 24
- Box 6 (White): 10
- Box 7 (White): 11
- Box 8 (White): 36
- Box 9 (White): 4
- Box 10 (White): 40
- Box 11 (White): 33
- Box 12 (White): 21
- Box 13 (White): 33
- Box 14 (Orange, T): 64
- Box 15 (White): 18
- Box 16 (White): 27
- Box 17 (White): 20
- Box 18 (White): 20
- Box 19 (White): 24
- Box 20 (Orange, T): 64

Bottom Row (18 boxes):

- Box 1 (Orange, T): 64
- Box 2 (White): 27
- Box 3 (White): 20
- Box 4 (White): 10
- Box 5 (White): 60
- Box 6 (White): 36
- Box 7 (White): 2
- Box 8 (White): 11
- Box 9 (White): 4
- Box 10 (Orange, T): 64
- Box 11 (White): 28
- Box 12 (White): 18
- Box 13 (White): 11
- Box 14 (Orange, T): 21
- Box 15 (White): 64
- Box 16 (White): 27
- Box 17 (White): 33
- Box 18 (White): 20
- Box 19 (White): 4

$$8 \times 8 = \boxed{} \rightarrow \boxed{\text{T}}$$

$$12 \times 2 = \boxed{} \rightarrow \boxed{0}$$

$$7 \times 4 = \boxed{} \rightarrow \boxed{\text{Y}}$$

$3 \times 11 = \boxed{} \rightarrow \boxed{1}$

$$2 \times 10 = \boxed{} \rightarrow \boxed{\text{N}}$$

$3 \times 7 = \boxed{} \rightarrow \boxed{\text{R}}$

$$9 \times 4 = \boxed{} \rightarrow \boxed{\text{E}}$$

$1 \times 10 = \boxed{} \rightarrow \boxed{\mathbf{G}}$

$1 \times 7 = \boxed{} \rightarrow \boxed{\text{H}}$

$2 \times 1 = \boxed{} \rightarrow \boxed{\mathbf{D}}$

$8 \times 5 = \boxed{} \rightarrow \boxed{\text{P}}$

$3 \times 9 = \square \rightarrow \boxed{\mathbf{A}}$

$6 \times 10 = \boxed{} \rightarrow \boxed{\text{L}}$

$9 \times 2 = \boxed{} \rightarrow \boxed{\text{C}}$

$$11 \times 1 = \boxed{} \rightarrow \boxed{\text{U}}$$

$$4 \times 1 = \boxed{} \rightarrow \boxed{\mathbf{S}}$$

Scratch space:

CLUE 2

Word problems

Our ectoplasm scanner registers a tricky word puzzle carved into the banister. Solve the word problem to calibrate the scanner lenses and read the hidden message.

Solve each problem, then write its letter in the boxes to fill in the missing word.

A witness saw the villain was

R									D	E	D	S	P		R	K	S
38	63	107	42	99	42	89	47							89	38		

There were 75 spooky lanterns. 37 were used up. How many spooky lanterns are left?

Answer: → **R**

Ghost Hunter Cadet lined up 6 rows of 7 glowing orbs. How many glowing orbs in all?

Answer: → **H**

There were 132 spirit traps. 33 were used up. How many spirit traps are left?

Answer: → **T**

Ghost Hunter Cadet found 41 glowing orbs yesterday and 6 more today. How many glowing orbs in all?

Answer: → **N**

Ghost Hunter Cadet found 66 glowing orbs yesterday and 41 more today. How many glowing orbs in all?

Answer: → **G**

Ghost Hunter Cadet found 48 ectoplasm jars yesterday and 41 more today. How many ectoplasm jars in all?

Answer: → **A**

There were 89 spirit traps. 26 were used up. How many spirit traps are left?

Answer: → **I**

Scratch space:

Fractions of a number

A jar of glowing spirit beads was knocked over during the escape. Only a fraction of the beads still glow in the dark. Calculate that fraction of the total beads to find the suspect's energy trail.

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

23 26 5 19 13 2 24 13 5 9 25 14 23 19

25 24 2 27 19 9 25 27 24 39 33 19 38 9 13 26 17 9

$$2/6 \text{ of } 69 = \boxed{} \rightarrow \boxed{\text{S}}$$

$\frac{1}{5}$ of 125 = $\rightarrow$ **D**

$\frac{1}{2}$ of 26 = $\rightarrow$ **C**

4/8 of 10 = → **L**

3/10 of 130 = →

1/10 of 190 = → **T**

$$\frac{1}{4} \text{ of } 104 = \boxed{} \rightarrow \boxed{\mathbf{A}}$$

$2/4$ of $54 = \boxed{} \rightarrow \boxed{\text{F}}$

$$\frac{1}{6} \text{ of } 54 = \boxed{} \rightarrow \boxed{\text{E}}$$

$\frac{1}{4}$ of 8 = $\rightarrow$

$$\frac{1}{5} \text{ of } 85 = \boxed{} \rightarrow \boxed{\text{P}}$$

$\frac{1}{3}$ of 72 = $\rightarrow$ **R**

$$\frac{1}{4} \text{ of } 152 = \boxed{} \rightarrow \boxed{\text{H}}$$

3/10 of 110 = → **M**

4/8 of 28 = → **U**

Scratch space:

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

We find a stash of peppermint candies left behind on the table. Divide them equally among our five ghost-hunting traps to power them up and reveal 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:

$6 \div 3 = \boxed{}$

$72 \div 6 = \boxed{}$

$3 \div 3 = \boxed{}$

$56 \div 8 = \boxed{}$

$8 \div 1 = \boxed{}$

$110 \div 11 = \boxed{}$

$9 \div 3 = \boxed{}$

$90 \div 10 = \boxed{}$

$16 \div 4 = \boxed{}$

$30 \div 5 = \boxed{}$

$22 \div 2 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain chilled the air down to freezing, then summoned floating green glow-bugs.
2. The villain levitated heavy mahogany bookcases, then summoned floating green glow-bugs.
3. The villain possessed a dusty suit of armor, then tangled the velvet library curtains.
4. The villain phased through the library brick walls, then summoned floating green glow-bugs.
5. The villain levitated heavy mahogany bookcases, then haunted the antique grand piano.
6. The villain levitated heavy mahogany bookcases, then created deep eerie echoes in the hall.
7. The villain chilled the air down to freezing, then created deep eerie echoes in the hall.
8. The villain levitated heavy mahogany bookcases, then tangled the velvet library curtains.
9. The villain chilled the air down to freezing, then haunted the antique grand piano.
10. The villain possessed a dusty suit of armor, then haunted the antique grand piano.
11. The villain chilled the air down to freezing, then flickered the flickering candle flames.
12. The villain rattled rusty iron chains downstairs, then summoned floating green glow-bugs.

Answer Key

The Case of the Missing Phantom Tome

Culprit: Winston Zeddemore

Levitate Bookcases · Haunt Grand Pianos · Right-Handed Sparks · Spooky Silver Mist · Salt Circle Dust

Trail: Start 21 → Clue 1 18 → Clue 2 10 → Clue 3 5 → Clue 4 4 → Clue 5 1

Clue 1 (Multiplication facts (1-12)): "THE ROGUE SPIRIT CANNOT TANGLE DUSTY CURTAINS"

$8 \times 8 = 64$ (T) · $12 \times 2 = 24$ (O) · $7 \times 4 = 28$ (Y) · $3 \times 11 = 33$ (I) · $2 \times 10 = 20$ (N) · $3 \times 7 = 21$ (R) · $9 \times 4 = 36$ (E) · $1 \times 10 = 10$ (G) · $1 \times 7 = 7$ (H) · $2 \times 1 = 2$ (D) · $8 \times 5 = 40$ (P) · $3 \times 9 = 27$ (A) · $6 \times 10 = 60$ (L) · $9 \times 2 = 18$ (C) · $11 \times 1 = 11$ (U) · $4 \times 1 = 4$ (S)

Clue 2 (Word problems): "RIGHT HANDED SPARKS"

There were 75 spooky lanterns. 37 were used up. How many spooky lanterns are left? = 38 (R) · Ghost Hunter Cadet lined up 6 rows of 7 glowing orbs. How many glowing orbs in all? = 42 (H) · There were 132 spirit traps. 33 were used up. How many spirit traps are left? = 99 (T) · Ghost Hunter Cadet found 41 glowing orbs yesterday and 6 more today. How many glowing orbs in all? = 47 (N) · Ghost Hunter Cadet found 66 glowing orbs yesterday and 41 more today. How many glowing orbs in all? = 107 (G) · Ghost Hunter Cadet found 48 ectoplasm jars yesterday and 41 more today. How many ectoplasm jars in all? = 89 (A) · There were 89 spirit traps. 26 were used up. How many spirit traps are left? = 63 (I)

Clue 3 (Fractions of a number): "SALT CIRCLE DUST DRIFTED FROM THE CAPE"

$2/6$ of 69 = 23 (S) · $1/5$ of 125 = 25 (D) · $1/2$ of 26 = 13 (C) · $4/8$ of 10 = 5 (L) · $3/10$ of 130 = 39 (O) · $1/10$ of 190 = 19 (T) · $1/4$ of 104 = 26 (A) · $2/4$ of 54 = 27 (F) · $1/6$ of 54 = 9 (E) · $1/4$ of 8 = 2 (I) · $1/5$ of 85 = 17 (P) · $1/3$ of 72 = 24 (R) · $1/4$ of 152 = 38 (H) · $3/10$ of 110 = 33 (M) · $4/8$ of 28 = 14 (U)

Clue 4 (Order of operations): "SPOOKY SILVER MIST COBBLESTONES SHINED"

$9 + 5 \times 5 = 34$ (S) · $63 + 3 \times 4 = 75$ (M) · $6 + 6 \times 3 = 24$ (E) · $22 + 2 \times 2 = 26$ (L) · $4 + 5 \times 2 = 14$ (I) · $9 \times 8 - 5 = 67$ (T) · $3 \times 10 - 22 = 8$ (C) · $7 \times 3 - 9 = 12$ (O) · $26 + 3 \times 3 = 35$ (V) · $9 \times 8 - 12 = 60$ (P) · $59 + 2 \times 3 = 65$ (R) · $5 + 2 \times 2 = 9$ (N) · $2 + 4 \times 4 = 18$ (D) · $19 + 6 \times 3 = 37$ (K) · $6 \times 5 - 10 = 20$ (B) · $9 \times 10 - 17 = 73$ (Y) · $47 + 5 \times 5 = 72$ (H)

Clue 5 (Division facts (1-12)): surviving statement is box 5 → Winston Zeddemore

$6 \div 3 = 2$ · $72 \div 6 = 12$ · $3 \div 3 = 1$ · $56 \div 8 = 7$ · $8 \div 1 = 8$ · $110 \div 11 = 10$ · $9 \div 3 = 3$ · $90 \div 10 = 9$ · $16 \div 4 = 4$ · $30 \div 5 = 6$ · $22 \div 2 = 11$