# The Mystery of the Missing Beacon

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

**Detective:** _____ **Date:** _____

The rare nether beacon was stolen from the central fortress vault right before sunset! The detective must use clues to identify which rogue builder committed the heist.

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 Griefer is** _____

## Possible suspects

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

| NAME | PRIMARY TOOL | COMPANION TOOL | DOMINANT HAND | HEADGEAR | COUNTERMEASURE |
|---|---|---|---|---|---|
| **Alex Kraft** | Trident Spear | Iron Golem | Left Handed | Iron Helmet | Obsidian Trap |
| **Nether Nate** | Diamond Pickaxe | Tamed Parrot | Right Handed | Iron Helmet | Hissing Cat |
| **Mining Max** | Splash Potion | Iron Golem | Left Handed | Iron Helmet | Hissing Cat |
| **Bdouble O** | Redstone Dust | Firework Rocket | Left Handed | Iron Helmet | Splash Water Potion |
| **Captain Sparkle** | Redstone Dust | Iron Golem | Right Handed | Creeper Hoodie | Hissing Cat |
| **Impulse SV** | Elytra Wings | Tame Wolf | Left Handed | Creeper Hoodie | Hissing Cat |
| **Cobble Claire** | Diamond Pickaxe | Firework Rocket | Left Handed | Creeper Hoodie | Hissing Cat |
| **Etho Slab** | Redstone Dust | Tamed Parrot | Left Handed | Turtle Shell | Obsidian Trap |
| **Mumbo Jumbo** | Splash Potion | Iron Golem | Left Handed | Creeper Hoodie | Hissing Cat |
| **Redstone Rita** | Redstone Dust | Firework Rocket | Right Handed | Creeper Hoodie | Hissing Cat |
| **Hermit Crafty** | Redstone Dust | Firework Rocket | Right Handed | Iron Helmet | Obsidian Trap |
| **Doc M** | Diamond Pickaxe | Firework Rocket | Left Handed | Creeper Hoodie | Obsidian Trap |
| **Pixel Pete** | Trident Spear | Tame Wolf | Left Handed | Creeper Hoodie | Splash Water Potion |
| **Stampy Cat** | Diamond Pickaxe | Iron Golem | Right Handed | Turtle Shell | Obsidian Trap |
| **Tango Tek** | Redstone Dust | Ender Pearl | Left Handed | Iron Helmet | Hissing Cat |
| **Obsidian Sam** | Redstone Dust | Ender Pearl | Left Handed | Creeper Hoodie | Hissing Cat |
| **Steve Block** | Splash Potion | Ender Pearl | Left Handed | Creeper Hoodie | Hissing Cat |
| **Builder Bella** | Splash Potion | Tame Wolf | Left Handed | Creeper Hoodie | Hissing Cat |
| **Grian Build** | Redstone Dust | Tame Wolf | Left Handed | Creeper Hoodie | Obsidian Trap |
| **Bedrock Ben** | Elytra Wings | Tame Wolf | Right Handed | Turtle Shell | Obsidian Trap |
| **Glitch Grace** | Splash Potion | Firework Rocket | Left Handed | Turtle Shell | Hissing Cat |

## CLUE 1 Fractions of a number

> To find out how many obsidian blocks remained in the chest, the detective calculated a fraction of the total vault inventory.

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

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T | | | | | | | | | | | | | | | | | | T | |
| 5 | 2 | 16 | 7 | 34 | 17 | 17 | 14 | 34 | 40 | 32 | 39 | 16 | 21 | 40 | 39 | 5 | | | |
| | | | | | | | | | | | | | | | | | | | |
| 30 | 21 | 16 | 16 | 40 | 32 | 16 | 13 | 11 | 16 | 14 | 13 | 17 | 21 | | | | | | |

1/5 of 25 = ☐ → T

3/6 of 68 = ☐ → I

4/10 of 5 = ☐ → H

7/8 of 8 = ☐ → V

5/8 of 64 = ☐ → N

4/8 of 64 = ☐ → D

4/5 of 20 = ☐ → E

2/6 of 51 = ☐ → L

2/5 of 75 = ☐ → U

2/10 of 55 = ☐ → P

3/8 of 56 = ☐ → S

1/2 of 28 = ☐ → A

1/10 of 130 = ☐ → R

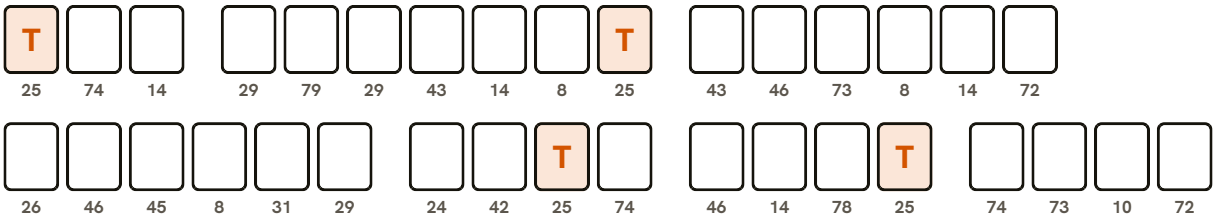
3/4 of 52 = ☐ → O

Scratch space:

## CLUE 2 Order of operations

To decrypt the redstone signal lock, you must calculate the exact pulse sequence in the correct order of operations.

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




1 + 3 × 8 = ☐ → T

10 + 2 × 7 = ☐ → W

9 × 10 - 18 = ☐ → D

12 × 7 - 10 = ☐ → H

11 × 9 - 21 = ☐ → F

10 + 7 × 3 = ☐ → K

8 × 11 - 9 = ☐ → U

3 × 7 - 13 = ☐ → C

13 + 8 × 4 = ☐ → O

11 × 9 - 26 = ☐ → A

3 + 8 × 5 = ☐ → P

2 + 4 × 2 = ☐ → N

3 × 12 - 7 = ☐ → S

6 + 6 × 6 = ☐ → I

4 × 9 - 10 = ☐ → B

7 × 9 - 17 = ☐ → L

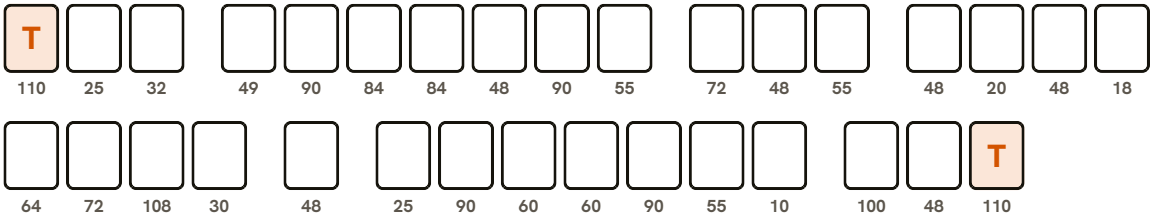
4 × 7 - 14 = ☐ → E

Scratch space:

## CLUE 3 Multiplication facts (1-12)

The villager merchant arranged rows of trading emeralds across several craft counters to count the profits.

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




11 × 10 = ☐ → T

5 × 11 = ☐ → N

12 × 7 = ☐ → L

6 × 10 = ☐ → S

8 × 8 = ☐ → F

7 × 7 = ☐ → V

10 × 1 = ☐ → G

10 × 3 = ☐ → M

5 × 5 = ☐ → H

8 × 6 = ☐ → A

10 × 2 = ☐ → W

10 × 10 = ☐ → C

3 × 6 = ☐ → Y

4 × 8 = ☐ → E

9 × 8 = ☐ → R

9 × 12 = ☐ → O

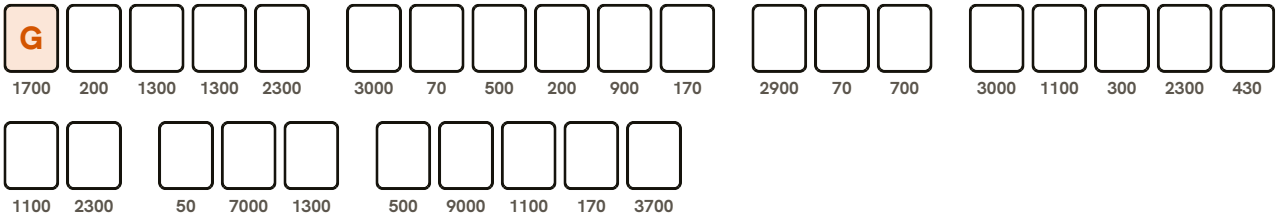
10 × 9 = ☐ → I

Scratch space:

## CLUE 4 Rounding

The fortress beacon scanner only displays signal distance rounded to the nearest ten blocks.

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




Round 1,654 to the nearest hundred ☐ → G

Round 658 to the nearest hundred ☐ → S

Round 69 to the nearest ten ☐ → A

Round 182 to the nearest hundred ☐ → R

Round 909 to the nearest hundred ☐ → I

Round 169 to the nearest ten ☐ → C

Round 7,167 to the nearest thousand ☐ → H

Round 3,696 to the nearest hundred ☐ → K

Round 1,140 to the nearest hundred ☐ → O

Round 8,552 to the nearest thousand ☐ → L

Round 50 to the nearest ten ☐ → T

Round 2,899 to the nearest hundred ☐ → W

Round 260 to the nearest hundred ☐ → U

Round 2,347 to the nearest hundred ☐ → N

Round 2,807 to the nearest thousand ☐ → F

Round 505 to the nearest hundred ☐ → B

Round 1,329 to the nearest hundred ☐ → E

Round 434 to the nearest ten ☐ → D

Scratch space:

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

> The craft guild divided the rest of the lapis lazuli blocks evenly among all five crafting stations.

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:**

| | | | | |
|---|---|---|---|---|
| 48 ÷ 12 = ☐ | 9 ÷ 9 = ☐ | 72 ÷ 6 = ☐ | 63 ÷ 9 = ☐ | 45 ÷ 5 = ☐ |
| 54 ÷ 9 = ☐ | 40 ÷ 8 = ☐ | 24 ÷ 3 = ☐ | 12 ÷ 6 = ☐ | 24 ÷ 8 = ☐ |
| 110 ÷ 11 = ☐ | | | | |

**Step 2 - cross out the sentence with each answer:**

1. The villain brewed a sneaky invisible potion, then whistled for a tame wolf.
2. The villain brewed a sneaky invisible potion, then teleported with an ender pearl.
3. The villain rewired the redstone trap, then launched a firework rocket.
4. The villain brewed a sneaky invisible potion, then summoned an iron golem.
5. The villain glided over the obsidian wall, then teleported with an ender pearl.
6. The villain threw a glowing trident, then whistled for a tame wolf.
7. The villain glided over the obsidian wall, then summoned an iron golem.
8. The villain rewired the redstone trap, then flew off with a tamed parrot.
9. The villain threw a glowing trident, then launched a firework rocket.
10. The villain brewed a sneaky invisible potion, then launched a firework rocket.
11. The villain glided over the obsidian wall, then whistled for a tame wolf.
12. The villain mined out the vault floor, then launched a firework rocket.

TEACHER / PARENT

# Answer Key

The Mystery of the Missing Beacon

## Culprit: Impulse SV

Elytra Wings · Tame Wolf · Left Handed · Creeper Hoodie · Hissing Cat

Trail: Start 21 → Clue 1 18 → Clue 2 12 → Clue 3 6 → Clue 4 4 → Clue 5 1

### Clue 1 (Fractions of a number): "THE VILLAIN DOES NOT USE ENDER PEARLS"

1/5 of 25 = 5 (T) · 3/6 of 68 = 34 (I) · 4/10 of 5 = 2 (H) · 7/8 of 8 = 7 (V) · 5/8 of 64 = 40 (N) · 4/8 of 64 = 32 (D) · 4/5 of 20 = 16 (E) · 2/6 of 51 = 17 (L) · 2/5 of 75 = 30 (U) · 2/10 of 55 = 11 (P) · 3/8 of 56 = 21 (S) · 1/2 of 28 = 14 (A) · 1/10 of 130 = 13 (R) · 3/4 of 52 = 39 (O)

### Clue 2 (Order of operations): "THE SUSPECT PLACED BLOCKS WITH LEFT HAND"

1 + 3 × 8 = 25 (T) · 10 + 2 × 7 = 24 (W) · 9 × 10 - 18 = 72 (D) · 12 × 7 - 10 = 74 (H) · 11 × 9 - 21 = 78 (F) · 10 + 7 × 3 = 31 (K) · 8 × 11 - 9 = 79 (U) · 3 × 7 - 13 = 8 (C) · 13 + 8 × 4 = 45 (O) · 11 × 9 - 26 = 73 (A) · 3 + 8 × 5 = 43 (P) · 2 + 4 × 2 = 10 (N) · 3 × 12 - 7 = 29 (S) · 6 + 6 × 6 = 42 (I) · 4 × 9 - 10 = 26 (B) · 7 × 9 - 17 = 46 (L) · 4 × 7 - 14 = 14 (E)

### Clue 3 (Multiplication facts (1-12)): "THE VILLAIN RAN AWAY FROM A HISSING CAT"

11 × 10 = 110 (T) · 5 × 11 = 55 (N) · 12 × 7 = 84 (L) · 6 × 10 = 60 (S) · 8 × 8 = 64 (F) · 7 × 7 = 49 (V) · 10 × 1 = 10 (G) · 10 × 3 = 30 (M) · 5 × 5 = 25 (H) · 8 × 6 = 48 (A) · 10 × 2 = 20 (W) · 10 × 10 = 100 (C) · 3 × 6 = 18 (Y) · 4 × 8 = 32 (E) · 9 × 8 = 72 (R) · 9 × 12 = 108 (O) · 10 × 9 = 90 (I)

### Clue 4 (Rounding): "GREEN FABRIC WAS FOUND ON THE BLOCK"

Round 1,654 to the nearest hundred = 1700 (G) · Round 658 to the nearest hundred = 700 (S) · Round 69 to the nearest ten = 70 (A) · Round 182 to the nearest hundred = 200 (R) · Round 909 to the nearest hundred = 900 (I) · Round 169 to the nearest ten = 170 (C) · Round 7,167 to the nearest thousand = 7000 (H) · Round 3,696 to the nearest hundred = 3700 (K) · Round 1,140 to the nearest hundred = 1100 (O) · Round 8,552 to the nearest thousand = 9000 (L) · Round 50 to the nearest ten = 50 (T) · Round 2,899 to the nearest hundred = 2900 (W) · Round 260 to the nearest hundred = 300 (U) · Round 2,347 to the nearest hundred = 2300 (N) · Round 2,807 to the nearest thousand = 3000 (F) · Round 505 to the nearest hundred = 500 (B) · Round 1,329 to the nearest hundred = 1300 (E) · Round 434 to the nearest ten = 430 (D)

### Clue 5 (Division facts (1-12)): surviving statement is box 11 → Impulse SV

48 ÷ 12 = 4 · 9 ÷ 9 = 1 · 72 ÷ 6 = 12 · 63 ÷ 9 = 7 · 45 ÷ 5 = 9 · 54 ÷ 9 = 6 · 40 ÷ 8 = 5 · 24 ÷ 3 = 8 · 12 ÷ 6 = 2 · 24 ÷ 8 = 3 · 110 ÷ 11 = 10