# The Case of the Obsidian Outpost

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

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

A mystery saboteur has compromised the defenses at the Crafting Citadel of Pixelia, smashing redstone wires and scattering valuable resources across the realm. The Grand Architect needs your math skills to decode clues and track down the Rogue Griefer before the fortress falls!

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 Griefer is** _____

## Possible suspects

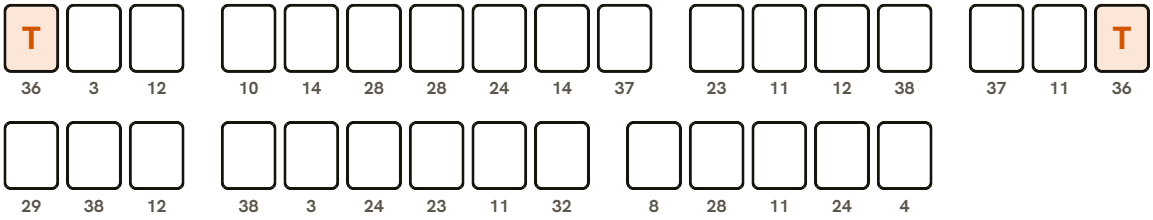
Cross off a row as each clue rules it out. The one left at the end is the culprit.

| NAME | MAIN ATTACK | ESCAPE MOVE | DOMINANT HAND | HEADGEAR | COUNTER ITEM |
|---|---|---|---|---|---|
| **Alex Blockley** | Redstone Blast | Speed Dash | Right Handed | Green Creeper Mask | Splash Water Potion |
| **Ella Spawner** | Lava Splash | Speed Dash | Right Handed | Green Creeper Mask | Splash Water Potion |
| **Eli Cavern** | Potion Splash | Shadow Cloak | Left Handed | Purple Ender Hood | Shield Block |
| **Ethan Obsidian** | TNT Drop | Speed Dash | Right Handed | Green Creeper Mask | Splash Water Potion |
| **Caleb Dropper** | Lava Splash | Ender Teleport | Left Handed | Green Creeper Mask | Shield Block |
| **Mia Glade** | Redstone Blast | Wall Climb | Left Handed | Green Creeper Mask | Shield Block |
| **Ava Lapis** | Anvil Crush | Wall Climb | Right Handed | Purple Ender Hood | Milk Bucket |
| **Jax Ender** | Anvil Crush | Elytra Glide | Left Handed | Purple Ender Hood | Splash Water Potion |
| **Chloe Prism** | Lava Splash | Shadow Cloak | Right Handed | Purple Ender Hood | Milk Bucket |
| **Lucas Biome** | Potion Splash | Wall Climb | Left Handed | Golden Diamond Helmet | Milk Bucket |
| **Isaac Steppe** | Lava Splash | Ender Teleport | Right Handed | Green Creeper Mask | Shield Block |
| **Zoe Hopper** | Anvil Crush | Shadow Cloak | Left Handed | Purple Ender Hood | Splash Water Potion |
| **Steve Crafton** | TNT Drop | Shadow Cloak | Right Handed | Green Creeper Mask | Splash Water Potion |
| **Sam Pixel** | Lava Splash | Ender Teleport | Right Handed | Purple Ender Hood | Splash Water Potion |
| **Ruby Shulker** | TNT Drop | Elytra Glide | Left Handed | Purple Ender Hood | Splash Water Potion |
| **Harper Temple** | Lava Splash | Speed Dash | Left Handed | Golden Diamond Helmet | Shield Block |
| **Maya Redstone** | Redstone Blast | Ender Teleport | Right Handed | Green Creeper Mask | Splash Water Potion |
| **Zachary Notch** | Redstone Blast | Ender Teleport | Right Handed | Purple Ender Hood | Milk Bucket |
| **Nora Vault** | TNT Drop | Elytra Glide | Left Handed | Green Creeper Mask | Splash Water Potion |
| **Liam Fortress** | Redstone Blast | Ender Teleport | Left Handed | Purple Ender Hood | Shield Block |
| **Owen Quarry** | TNT Drop | Elytra Glide | Right Handed | Golden Diamond Helmet | Shield Block |

## CLUE 1 Fractions of a number

You analyze the missing obsidian blocks from the main gate to calculate how many fractions were taken.

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




2/6 of 108 = ☐ → T

1/8 of 24 = ☐ → H

1/10 of 100 = ☐ → V

2/5 of 95 = ☐ → S

1/8 of 64 = ☐ → C

2/8 of 116 = ☐ → U

2/4 of 74 = ☐ → N

2/5 of 10 = ☐ → K

8/10 of 35 = ☐ → L

1/4 of 128 = ☐ → W

3/6 of 24 = ☐ → E

1/4 of 44 = ☐ → O

2/10 of 115 = ☐ → D

1/4 of 56 = ☐ → I

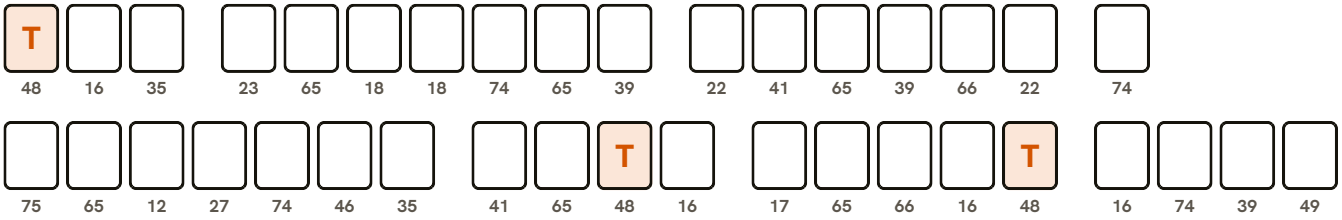
6/8 of 32 = ☐ → A

Scratch space:

## CLUE 2 Order of operations

You clear the redstone circuit puzzle by evaluating the correct step order on the command block.

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




8 × 9 - 24 = ☐ → T

13 + 2 × 2 = ☐ → R

4 × 12 - 13 = ☐ → E

10 × 4 - 17 = ☐ → V

11 × 2 - 6 = ☐ → H

31 + 3 × 6 = ☐ → D

6 × 9 - 15 = ☐ → N

43 + 4 × 8 = ☐ → P

3 + 3 × 3 = ☐ → C

45 + 3 × 7 = ☐ → G

10 + 6 × 6 = ☐ → X

10 × 10 - 26 = ☐ → A

6 × 5 - 3 = ☐ → K

5 × 11 - 14 = ☐ → W

6 × 6 - 18 = ☐ → L

16 + 2 × 3 = ☐ → S

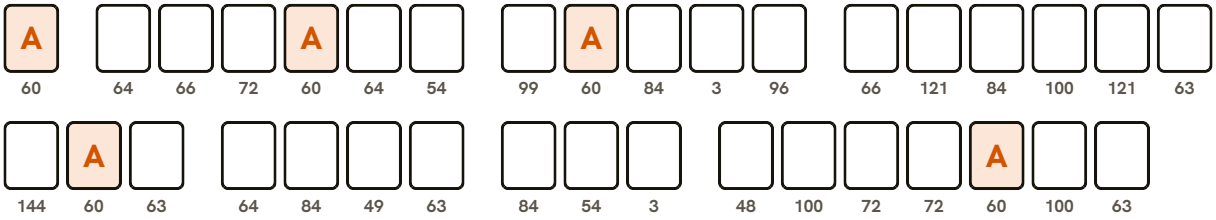
50 + 3 × 5 = ☐ → I

Scratch space:

## CLUE 3 Multiplication facts (1-12)

> You count the arrays of iron golems guarding the fortress walls in equal rows.

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




10 × 6 = ☐ → A

8 × 12 = ☐ → R

6 × 8 = ☐ → V

11 × 9 = ☐ → W

6 × 9 = ☐ → H

12 × 6 = ☐ → L

6 × 11 = ☐ → P

7 × 9 = ☐ → N

12 × 12 = ☐ → C

7 × 12 = ☐ → T

1 × 3 = ☐ → E

8 × 8 = ☐ → S

11 × 11 = ☐ → O

7 × 7 = ☐ → U

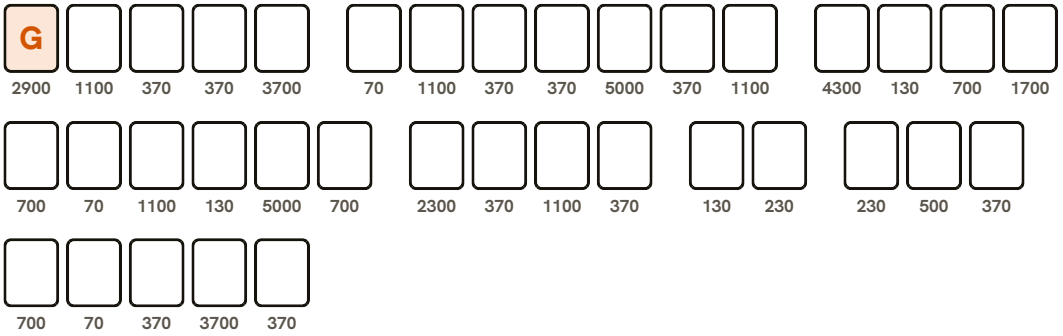
10 × 10 = ☐ → I

Scratch space:

## CLUE 4 Rounding

The craft bench scanner shows a total energy signal rounded to the nearest thousand.

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




Round 2,857 to the nearest hundred ☐ → G

Round 2,310 to the nearest hundred ☐ → W

Round 4,875 to the nearest thousand ☐ → P

Round 4,309 to the nearest hundred ☐ → M

Round 366 to the nearest ten ☐ → E

Round 3,664 to the nearest hundred ☐ → N

Round 721 to the nearest hundred ☐ → S

Round 233 to the nearest ten ☐ → T

Round 67 to the nearest ten ☐ → C

Round 1,652 to the nearest hundred ☐ → K

Round 499 to the nearest hundred ☐ → H

Round 1,113 to the nearest hundred ☐ → R

Round 130 to the nearest ten ☐ → A

Scratch space:

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

You check the remaining potion bottles in the brew stand to find what fraction held the mystery ingredient.

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:**

2/10 of 35 = ☐ | 1/3 of 9 = ☐ | 6/8 of 8 = ☐ | 2/6 of 36 = ☐ | 2/8 of 8 = ☐

3/6 of 22 = ☐ | 1/10 of 10 = ☐ | 1/5 of 45 = ☐ | 5/10 of 20 = ☐

1/4 of 20 = ☐ | 5/10 of 8 = ☐

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

1. The villain splashed hot lava, then teleported away.
2. The villain dropped lit tnt, then glided on elytra.
3. The villain dropped lit tnt, then dashed at high speed.
4. The villain threw a harmful potion, then dashed at high speed.
5. The villain fired a redstone blast, then glided on elytra.
6. The villain splashed hot lava, then dashed at high speed.
7. The villain fired a redstone blast, then teleported away.
8. The villain fired a redstone blast, then dashed at high speed.
9. The villain dropped lit tnt, then climbed up the fortress wall.
10. The villain splashed hot lava, then glided on elytra.
11. The villain splashed hot lava, then climbed up the fortress wall.
12. The villain dropped a heavy anvil, then vanished in shadows.

TEACHER / PARENT

# Answer Key

The Case of the Obsidian Outpost

## Culprit: Alex Blockley

Redstone Blast · Speed Dash · Right Handed · Green Creeper Mask · Splash Water Potion

Trail: Start 21 → Clue 1 17 → Clue 2 9 → Clue 3 5 → Clue 4 4 → Clue 5 1

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

2/6 of 108 = 36 (T) · 1/8 of 24 = 3 (H) · 1/10 of 100 = 10 (V) · 2/5 of 95 = 38 (S) · 1/8 of 64 = 8 (C) · 2/8 of 116 = 29 (U) · 2/4 of 74 = 37 (N) · 2/5 of 10 = 4 (K) · 8/10 of 35 = 28 (L) · 1/4 of 128 = 32 (W) · 3/6 of 24 = 12 (E) · 1/4 of 44 = 11 (O) · 2/10 of 115 = 23 (D) · 1/4 of 56 = 14 (I) · 6/8 of 32 = 24 (A)

### Clue 2 (Order of operations): "THE VILLAIN SWINGS A PICKAXE WITH RIGHT HAND"

8 × 9 - 24 = 48 (T) · 13 + 2 × 2 = 17 (R) · 4 × 12 - 13 = 35 (E) · 10 × 4 - 17 = 23 (V) · 11 × 2 - 6 = 16 (H) · 31 + 3 × 6 = 49 (D) · 6 × 9 - 15 = 39 (N) · 43 + 4 × 8 = 75 (P) · 3 + 3 × 3 = 12 (C) · 45 + 3 × 7 = 66 (G) · 10 + 6 × 6 = 46 (X) · 10 × 10 - 26 = 74 (A) · 6 × 5 - 3 = 27 (K) · 5 × 11 - 14 = 41 (W) · 6 × 6 - 18 = 18 (L) · 16 + 2 × 3 = 22 (S) · 50 + 3 × 5 = 65 (I)

### Clue 3 (Multiplication facts (1-12)): "A SPLASH WATER POTION CAN STUN THE VILLAIN"

10 × 6 = 60 (A) · 8 × 12 = 96 (R) · 6 × 8 = 48 (V) · 11 × 9 = 99 (W) · 6 × 9 = 54 (H) · 12 × 6 = 72 (L) · 6 × 11 = 66 (P) · 7 × 9 = 63 (N) · 12 × 12 = 144 (C) · 7 × 12 = 84 (T) · 1 × 3 = 3 (E) · 8 × 8 = 64 (S) · 11 × 11 = 121 (O) · 7 × 7 = 49 (U) · 10 × 10 = 100 (I)

### Clue 4 (Rounding): "GREEN CREEPER MASK SCRAPS WERE AT THE SCENE"

Round 2,857 to the nearest hundred = 2900 (G) · Round 2,310 to the nearest hundred = 2300 (W) · Round 4,875 to the nearest thousand = 5000 (P) · Round 4,309 to the nearest hundred = 4300 (M) · Round 366 to the nearest ten = 370 (E) · Round 3,664 to the nearest hundred = 3700 (N) · Round 721 to the nearest hundred = 700 (S) · Round 233 to the nearest ten = 230 (T) · Round 67 to the nearest ten = 70 (C) · Round 1,652 to the nearest hundred = 1700 (K) · Round 499 to the nearest hundred = 500 (H) · Round 1,113 to the nearest hundred = 1100 (R) · Round 130 to the nearest ten = 130 (A)

### Clue 5 (Fractions of a number): surviving statement is box 8 → Alex Blockley

2/10 of 35 = 7 · 1/3 of 9 = 3 · 6/8 of 8 = 6 · 2/6 of 36 = 12 · 2/8 of 8 = 2 · 3/6 of 22 = 11 · 1/10 of 10 = 1 · 1/5 of 45 = 9 · 5/10 of 20 = 10 · 1/4 of 20 = 5 · 5/10 of 8 = 4