# The Golden Sun Compass Caper

Grade 6 math · Percentages, Exponents, Order of operations, Multiplication, Division · Reading level grades 3-4

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

A sneaky explorer took the Golden Sun Compass right out of the museum tent at Serpent Island Trail! Detective, solve the math clues to uncover who did it before they escape down the river.

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 explorer is** _____

## Possible suspects

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

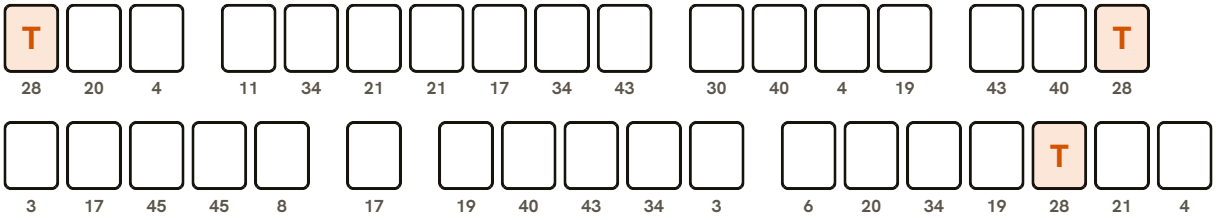
| NAME | MAIN TOOL | EXTRA GEAR | DOMINANT HAND | HEADWEAR | SECRET FLAW |
|---|---|---|---|---|---|
| **Gabe Gear** | Paraglider | Night Vision | Right Handed | Red Bandana | Allergic To Dust |
| **Chloe Cliff** | Paraglider | Mini Drone | Right Handed | Blue Bandana | Afraid Of Frogs |
| **Owen Oak** | Map Compass | Flare Gun | Left Handed | Red Bandana | Afraid Of Frogs |
| **Scout Ben** | Grappling Hook | Night Vision | Left Handed | Blue Bandana | Allergic To Dust |
| **Pia Peak** | Climbing Spikes | Flare Gun | Right Handed | Red Bandana | Sneezes At Feathers |
| **Elena Cruz** | Paraglider | Night Vision | Right Handed | Red Bandana | Afraid Of Frogs |
| **Archie Pine** | Climbing Spikes | Waterproof Bag | Right Handed | Blue Bandana | Afraid Of Frogs |
| **Ruby River** | Climbing Spikes | Sonic Whistle | Left Handed | Blue Bandana | Afraid Of Frogs |
| **Ranger Rita** | Paraglider | Mini Drone | Right Handed | Green Bandana | Afraid Of Frogs |
| **Hugo Hill** | Climbing Spikes | Flare Gun | Right Handed | Blue Bandana | Afraid Of Frogs |
| **Tracker Tom** | Grappling Hook | Night Vision | Right Handed | Red Bandana | Afraid Of Frogs |
| **Danny Dash** | Smoke Bomb | Waterproof Bag | Right Handed | Red Bandana | Allergic To Dust |
| **Finn Forest** | Paraglider | Night Vision | Right Handed | Green Bandana | Afraid Of Frogs |
| **Tara Trail** | Map Compass | Mini Drone | Right Handed | Red Bandana | Afraid Of Frogs |
| **Sasha Stone** | Paraglider | Sonic Whistle | Right Handed | Red Bandana | Allergic To Dust |
| **Maya Moon** | Climbing Spikes | Waterproof Bag | Left Handed | Red Bandana | Afraid Of Frogs |
| **Jack Jungle** | Map Compass | Sonic Whistle | Right Handed | Red Bandana | Afraid Of Frogs |
| **Zoe Zipline** | Map Compass | Mini Drone | Right Handed | Blue Bandana | Allergic To Dust |
| **Captain Leo** | Map Compass | Waterproof Bag | Right Handed | Red Bandana | Afraid Of Frogs |
| **Sammy Swift** | Climbing Spikes | Sonic Whistle | Right Handed | Red Bandana | Allergic To Dust |
| **Ivy Vine** | Map Compass | Sonic Whistle | Left Handed | Blue Bandana | Afraid Of Frogs |

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## CLUE 1 Percentages

The museum security board shows the percentage of campsite alarms triggered today.

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




10% of 280 = ☐ → T

10% of 200 = ☐ → H

20% of 55 = ☐ → V

25% of 136 = ☐ → I

25% of 76 = ☐ → S

50% of 34 = ☐ → A

50% of 12 = ☐ → W

60% of 35 = ☐ → L

75% of 40 = ☐ → D

25% of 12 = ☐ → C

50% of 86 = ☐ → N

25% of 32 = ☐ → Y

50% of 80 = ☐ → O

5% of 900 = ☐ → R

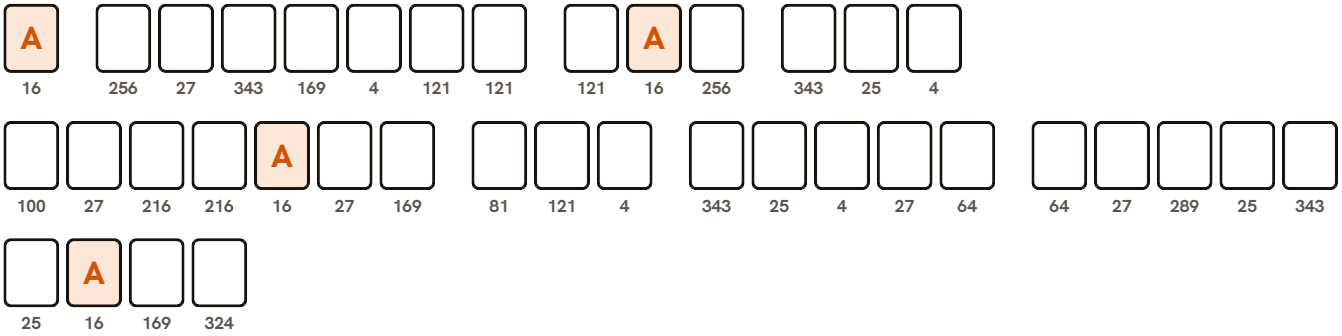
5% of 80 = ☐ → E

Scratch space:

## CLUE 2 Exponents

To unlock the ancient stone gate, you must calculate the power grid values.

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




4^2 = ☐ → A

3^4 = ☐ → U

6^3 = ☐ → L

5^2 = ☐ → H

7^3 = ☐ → T

18^2 = ☐ → D

8^2 = ☐ → R

2^2 = ☐ → E

10^2 = ☐ → V

11^2 = ☐ → S

2^8 = ☐ → W

13^2 = ☐ → N

3^3 = ☐ → I

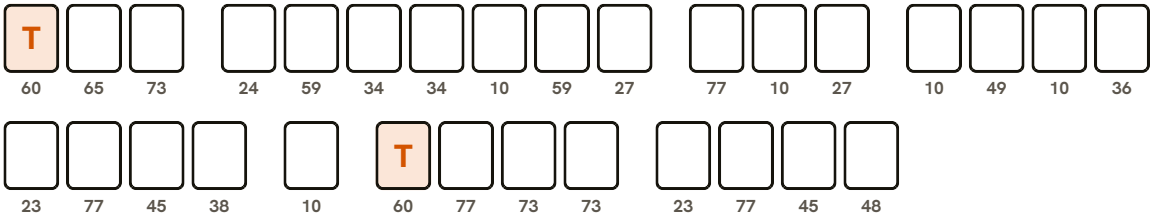
17^2 = ☐ → G

Scratch space:

## CLUE 3 Order of operations

To decrypt the trail log, follow the exact steps on the explorer notebook.

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



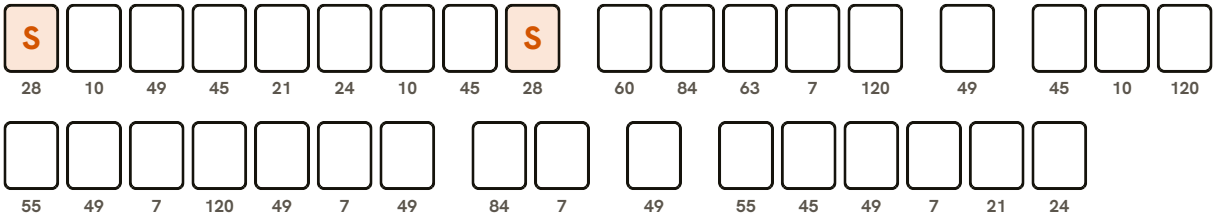

| | | |
|---|---|---|
| 9 × 9 - 21 = ☐ → T | 59 + 3 × 6 = ☐ → R | 12 × 3 - 9 = ☐ → N |
| 11 + 2 × 6 = ☐ → F | 12 × 6 - 13 = ☐ → I | 18 + 2 × 9 = ☐ → Y |
| 2 × 12 - 14 = ☐ → A | 11 × 7 - 12 = ☐ → H | 7 × 9 - 15 = ☐ → G |
| 15 + 5 × 6 = ☐ → O | 58 + 3 × 5 = ☐ → E | 4 + 9 × 5 = ☐ → W |
| 7 × 9 - 29 = ☐ → L | 28 + 2 × 5 = ☐ → M | 18 + 2 × 3 = ☐ → V |

Scratch space:

## CLUE 4 Multiplication facts (1-12)

Count the rows of supply crates left near the river landing.

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




4 × 7 = ☐ → S

2 × 12 = ☐ → H

7 × 7 = ☐ → A

1 × 7 = ☐ → N

12 × 7 = ☐ → O

7 × 3 = ☐ → C

10 × 12 = ☐ → D

5 × 9 = ☐ → R

11 × 5 = ☐ → B

10 × 6 = ☐ → F

9 × 7 = ☐ → U

5 × 2 = ☐ → E

Scratch space:

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

Split the discovery rations evenly among the campsite search teams.

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:**

| | | | | |
|---|---|---|---|---|
| 3 ÷ 3 = ☐ | 20 ÷ 2 = ☐ | 35 ÷ 7 = ☐ | 32 ÷ 8 = ☐ | 132 ÷ 12 = ☐ |
| 63 ÷ 9 = ☐ | 48 ÷ 4 = ☐ | 21 ÷ 7 = ☐ | 6 ÷ 1 = ☐ | 64 ÷ 8 = ☐ |
| 4 ÷ 2 = ☐ | | | | |

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

1. The villain soared over the canopy on a paraglider, then spied through the dark using night vision.
2. The villain soared over the canopy on a paraglider, then packed the golden idol inside a waterproof bag.
3. The villain vanished into the brush with a smoke bomb, then signaled an accomplice with a sonic whistle.
4. The villain scaled the stone cliff using climbing spikes, then scouted the path ahead with a mini drone.
5. The villain navigated the jungle using a map compass, then packed the golden idol inside a waterproof bag.
6. The villain vanished into the brush with a smoke bomb, then scouted the path ahead with a mini drone.
7. The villain soared over the canopy on a paraglider, then lit the campsite using a flare gun.
8. The villain soared over the canopy on a paraglider, then signaled an accomplice with a sonic whistle.
9. The villain navigated the jungle using a map compass, then scouted the path ahead with a mini drone.
10. The villain swung across the ravine with a grappling hook, then spied through the dark using night vision.
11. The villain scaled the stone cliff using climbing spikes, then lit the campsite using a flare gun.
12. The villain scaled the stone cliff using climbing spikes, then packed the golden idol inside a waterproof bag.

TEACHER / PARENT

# Answer Key

The Golden Sun Compass Caper

## Culprit: Tara Trail

Map Compass · Mini Drone · Right Handed · Red Bandana · Afraid Of Frogs

Trail: Start 21 → Clue 1 16 → Clue 2 13 → Clue 3 9 → Clue 4 4 → Clue 5 1

### Clue 1 (Percentages): "THE VILLAIN DOES NOT CARRY A SONIC WHISTLE"

10% of 280 = 28 (T) · 10% of 200 = 20 (H) · 20% of 55 = 11 (V) · 25% of 136 = 34 (I) · 25% of 76 = 19 (S) · 50% of 34 = 17 (A) · 50% of 12 = 6 (W) · 60% of 35 = 21 (L) · 75% of 40 = 30 (D) · 25% of 12 = 3 (C) · 50% of 86 = 43 (N) · 25% of 32 = 8 (Y) · 50% of 80 = 40 (O) · 5% of 900 = 45 (R) · 5% of 80 = 4 (E)

### Clue 2 (Exponents): "A WITNESS SAW THE VILLAIN USE THEIR RIGHT HAND"

4^2 = 16 (A) · 3^4 = 81 (U) · 6^3 = 216 (L) · 5^2 = 25 (H) · 7^3 = 343 (T) · 18^2 = 324 (D) · 8^2 = 64 (R) · 2^2 = 4 (E) · 10^2 = 100 (V) · 11^2 = 121 (S) · 2^8 = 256 (W) · 13^2 = 169 (N) · 3^3 = 27 (I) · 17^2 = 289 (G)

### Clue 3 (Order of operations): "THE VILLAIN RAN AWAY FROM A TREE FROG"

9 × 9 - 21 = 60 (T) · 59 + 3 × 6 = 77 (R) · 12 × 3 - 9 = 27 (N) · 11 + 2 × 6 = 23 (F) · 12 × 6 - 13 = 59 (I) · 18 + 2 × 9 = 36 (Y) · 2 × 12 - 14 = 10 (A) · 11 × 7 - 12 = 65 (H) · 7 × 9 - 15 = 48 (G) · 15 + 5 × 6 = 45 (O) · 58 + 3 × 5 = 73 (E) · 4 + 9 × 5 = 49 (W) · 7 × 9 - 29 = 34 (L) · 28 + 2 × 5 = 38 (M) · 18 + 2 × 3 = 24 (V)

### Clue 4 (Multiplication facts (1-12)): "SEARCHERS FOUND A RED BANDANA ON A BRANCH"

4 × 7 = 28 (S) · 2 × 12 = 24 (H) · 7 × 7 = 49 (A) · 1 × 7 = 7 (N) · 12 × 7 = 84 (O) · 7 × 3 = 21 (C) · 10 × 12 = 120 (D) · 5 × 9 = 45 (R) · 11 × 5 = 55 (B) · 10 × 6 = 60 (F) · 9 × 7 = 63 (U) · 5 × 2 = 10 (E)

### Clue 5 (Division facts (1-12)): surviving statement is box 9 → Tara Trail

3 ÷ 3 = 1 · 20 ÷ 2 = 10 · 35 ÷ 7 = 5 · 32 ÷ 8 = 4 · 132 ÷ 12 = 11 · 63 ÷ 9 = 7 · 48 ÷ 4 = 12 · 21 ÷ 7 = 3 · 6 ÷ 1 = 6 · 64 ÷ 8 = 8 · 4 ÷ 2 = 2