



# The Canopy Ruins Mystery

Grade 7 math · Rounding, Bar models, Integers, Percentages, Missing addends · Reading level grades 7-9

Detective: \_\_\_\_\_ Date: \_\_\_\_\_

The priceless Sunstone Scepter has been stolen from the deep vaults of the Obsidian Canopy temple! The head archeologist was locked in a supply crate, and the thief fled into the dense jungle. We have a list of twenty-four suspect explorers who were near the camp. Decipher the clues left behind to unmask the rogue explorer!

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             | ARCHEOLOGICAL SPECIALTY | SIGNATURE GEAR  | SCRIBBLING HAND      | MUD SMUDGE COLOR | PHOBIA                  |
|------------------|-------------------------|-----------------|----------------------|------------------|-------------------------|
| Lara Croft       | scaling ruins           | leather satchel | left handed journal  | black peat mud   | fear of spiders         |
| Rick OConnell    | mapping caverns         | rugged canteen  | left handed journal  | red clay mud     | fear of heights         |
| Marco Polo       | disarming traps         | leather satchel | left handed journal  | red clay mud     | fear of spiders         |
| Amelia Earhart   | mapping caverns         | leather satchel | left handed journal  | black peat mud   | fear of spiders         |
| Claire Redfield  | disarming traps         | grappling hook  | left handed journal  | grey silt mud    | fear of spiders         |
| Evelyn Carnahan  | disarming traps         | machete tool    | left handed journal  | red clay mud     | fear of spiders         |
| Chloe Frazer     | mapping caverns         | machete tool    | left handed journal  | grey silt mud    | fear of spiders         |
| Chris Redfield   | scaling ruins           | headlamp visor  | right handed journal | grey silt mud    | fear of enclosed spaces |
| Ellie Sattler    | deciphering runes       | machete tool    | left handed journal  | red clay mud     | fear of enclosed spaces |
| John Cabot       | scaling ruins           | grappling hook  | right handed journal | grey silt mud    | fear of enclosed spaces |
| Marion Ravenwood | mapping caverns         | machete tool    | right handed journal | grey silt mud    | fear of spiders         |
| Benjamin Gates   | excavating fossils      | leather satchel | right handed journal | red clay mud     | fear of spiders         |
| Indiana Jones    | deciphering runes       | grappling hook  | right handed journal | grey silt mud    | fear of spiders         |
| Leon Kennedy     | mapping caverns         | rugged canteen  | left handed journal  | black peat mud   | fear of enclosed spaces |
| Alan Grant       | scaling ruins           | rugged canteen  | left handed journal  | grey silt mud    | fear of spiders         |
| Jill Valentine   | disarming traps         | rugged canteen  | left handed journal  | grey silt mud    | fear of spiders         |
| Percy Fawcett    | disarming traps         | headlamp visor  | left handed journal  | grey silt mud    | fear of spiders         |
| Nathan Drake     | scaling ruins           | grappling hook  | left handed journal  | grey silt mud    | fear of enclosed spaces |
| Samuel Drake     | excavating fossils      | headlamp visor  | left handed journal  | grey silt mud    | fear of spiders         |
| Victor Sullivan  | excavating fossils      | headlamp visor  | left handed journal  | red clay mud     | fear of spiders         |
| Danny Boy        | scaling ruins           | rugged canteen  | left handed journal  | black peat mud   | fear of spiders         |

**CLUE 1**

To calculate the escape route, we must examine the GPS tracker left behind. The damaged device only displays distance values rounded to the nearest ten kilometers, requiring some quick estimations to narrow down the path.

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

Diagram illustrating the distribution of 1000 items across 10 categories. The categories are represented by boxes with their respective counts below them. The counts are: 900, 1100, 430, 30, 50, 2900, 110, 430, 2000, 290, 2000, 370, 50, 900, 4300, 30, 290, 370, 2900. The boxes are arranged in two rows of five. The first box in the first row and the fifth box in the second row are highlighted in orange and labeled 'T'.

Round 906 to the nearest hundred   $\rightarrow$  **T**

Round 373 to the nearest ten  → **N**

Round 33 to the nearest ten  → **R**

Round 1,085 to the nearest hundred   $\rightarrow$  **H**

Round 241 to the nearest hundred   $\rightarrow$  **A**

Round 47 to the nearest ten   $\rightarrow$

Round 428 to the nearest ten   $\rightarrow$  **E**

Round 2,888 to the nearest hundred  → **G**

Round 288 to the nearest ten   $\rightarrow$

Round 109 to the nearest ten   $\rightarrow$

Round 4,260 to the nearest hundred  → **B**

Round 3,748 to the nearest hundred   $\rightarrow$  **C**

Round 1,590 to the nearest thousand  → **D**

Scratch space:

## CLUE 2

## Bar model word problems

A stone tablet carved with segmented blocks reveals the weight distribution needed to disarm the final temple security gate. We can compare these visual bar models to find the relative ratios of the mechanism.

Draw a bar model to solve each word problem, then write its letter in the boxes to fill in the missing word.

A witness saw the villain was

L






D

D
J
O
U
R


L

18   113   76   50   116   73   60   113   60   73   18

The lead guide has 3 times as many machete blades as a teammate. The teammate has 6 machete blades. How many machete blades does the lead guide have?

draw a bar model

Answer:  → L

The lead guide used  $\frac{3}{5}$  of the stone tablets on the first day. The other 20 stone tablets were used the next day. How many stone tablets were there in all?

draw a bar model

Answer:  → T

The red team has 142 brass compasses and the blue team has 26 brass compasses. How many more brass compasses does the red team have?

draw a bar model

Answer:  → H

One group collected 3 jungle vines and another group collected 70 jungle vines. How many jungle vines in all?

draw a bar model

Answer:  → A

The lead guide has 228 ancient coins, packed 3 to a bag. How many bags can be filled?

draw a bar model

Answer:  → F

One group collected 103 jungle vines and another group collected 10 jungle vines. How many jungle vines in all?

draw a bar model

Answer:  → E

The lead guide has 5 times as many brass compasses as a teammate. The teammate has 12 brass compasses. How many brass compasses does the lead guide have?

draw a bar model

Answer:  → N

### CLUE 3 Integers

The temple elevator shaft rises and falls past several subterranean levels. By tracking the positive climbs and negative drops through the underground ruins, we can pinpoint the exact floor where the suspect hid.

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

|    |    |    |   |    |    |    |    |    |   |    |    |    |    |   |  |   |
|----|----|----|---|----|----|----|----|----|---|----|----|----|----|---|--|---|
| T  |    |    | T |    |    |    |    |    |   |    |    |    |    |   |  |   |
| 6  | 16 | 30 | 6 | 16 | 11 | 30 | 4  | 13 | 8 | 27 | 4  | 13 | 29 | 9 |  | 8 |
|    |    |    |   |    |    |    |    |    |   |    |    |    |    |   |  |   |
| 16 | 8  | 13 | 9 | 25 | 30 | 12 | 12 | 12 | 1 | 11 | 10 | 30 | 13 |   |  |   |

|                                             |                                            |                                             |
|---------------------------------------------|--------------------------------------------|---------------------------------------------|
| $(-5) + 11 = \square \rightarrow \text{T}$  | $(-4) + 5 = \square \rightarrow \text{P}$  | $(-15) + 27 = \square \rightarrow \text{S}$ |
| $(-7) + 11 = \square \rightarrow \text{F}$  | $(-1) + 30 = \square \rightarrow \text{O}$ | $(-12) + 23 = \square \rightarrow \text{I}$ |
| $(-4) + 31 = \square \rightarrow \text{N}$  | $5 - (-11) = \square \rightarrow \text{H}$ | $28 - (-2) = \square \rightarrow \text{E}$  |
| $(-15) + 24 = \square \rightarrow \text{M}$ | $(-7) + 15 = \square \rightarrow \text{A}$ | $(-4) + 17 = \square \rightarrow \text{R}$  |
| $(-5) + 15 = \square \rightarrow \text{D}$  | $(-5) + 30 = \square \rightarrow \text{L}$ |                                             |

Scratch space:

## CLUE 4 Percentages

The camp solar generator is slowly draining, and the decoded ruins map is only partially downloaded. We must compute the exact percentage of data recovered before the power drops to absolute zero.

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

|              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|--------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| <div>A</div> |    |    |    |    |    |    |    |    |    | A  |    |    | A  |    |    |    |    |    |
| 15           | 45 | 31 | 22 | 25 | 25 | 10 | 50 | 26 | 10 | 15 | 44 | 35 | 15 | 50 | 23 | 16 | 10 | 40 |
|              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 45           | 59 | 26 | 25 | 27 | 32 | 50 |    |    |    |    |    |    |    |    |    |    |    |    |

$10\% \text{ of } 150 = \square \rightarrow \text{A}$

$40\% \text{ of } 40 = \square \rightarrow \text{R}$

$10\% \text{ of } 500 = \square \rightarrow \text{D}$

$50\% \text{ of } 118 = \square \rightarrow \text{I}$

$10\% \text{ of } 220 = \square \rightarrow \text{O}$

$5\% \text{ of } 800 = \square \rightarrow \text{Y}$

$75\% \text{ of } 60 = \square \rightarrow \text{S}$

$25\% \text{ of } 124 = \square \rightarrow \text{P}$

$5\% \text{ of } 520 = \square \rightarrow \text{L}$

$20\% \text{ of } 50 = \square \rightarrow \text{E}$

$50\% \text{ of } 50 = \square \rightarrow \text{T}$

$50\% \text{ of } 88 = \square \rightarrow \text{F}$

$5\% \text{ of } 460 = \square \rightarrow \text{G}$

$5\% \text{ of } 640 = \square \rightarrow \text{U}$

$50\% \text{ of } 70 = \square \rightarrow \text{H}$

$10\% \text{ of } 270 = \square \rightarrow \text{M}$

Scratch space:

**CLUE 5****Missing addends - the last clue**

To open the sealed obsidian chest, we need to balance the ancient stone scales. The left side holds a heavy brass relic, but the right side requires a precise missing weight value to level the beam perfectly.

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:**

$37 + \underline{\quad} = 46$

$36 + \underline{\quad} = 47$

$17 + \underline{\quad} = 18$

$25 + \underline{\quad} = 31$

$7 + \underline{\quad} = 15$

$28 + \underline{\quad} = 33$

$6 + \underline{\quad} = 10$

$24 + \underline{\quad} = 34$

$5 + \underline{\quad} = 17$

$26 + \underline{\quad} = 29$

$28 + \underline{\quad} = 30$

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

1. The villain cracked the hidden code on the vault door, then escaped on a roaring dirt bike.
2. The villain scrambled up the crumbling stone wall, then dashed toward the secret river boat.
3. The villain cracked the hidden code on the vault door, then hid behind the waterfall basin.
4. The villain slipped past the ancient poison darts, then dropped a trail of golden coins.
5. The villain brushed through the giant ferns, then hid behind the waterfall basin.
6. The villain scrambled up the crumbling stone wall, then escaped on a roaring dirt bike.
7. The villain scrambled up the crumbling stone wall, then dropped a trail of golden coins.
8. The villain swung across the flooded river gorge, then vanished into the thick fog.
9. The villain slipped past the ancient poison darts, then vanished into the thick fog.
10. The villain brushed through the giant ferns, then escaped on a roaring dirt bike.
11. The villain slipped past the ancient poison darts, then escaped on a roaring dirt bike.
12. The villain scrambled up the crumbling stone wall, then hid behind the waterfall basin.

# Answer Key

## The Canopy Ruins Mystery

### Culprit: Chloe Frazer

mapping caverns · machete tool · left handed journal · grey silt mud · fear of spiders

Trail: Start 21 → Clue 1 16 → Clue 2 11 → Clue 3 9 → Clue 4 4 → Clue 5 1

### Clue 1 (Rounding): "THE ROGUE DID NOT BRING A CANTEEN"

Round 906 to the nearest hundred = 900 (T) · Round 373 to the nearest ten = 370 (N) · Round 33 to the nearest ten = 30 (R) · Round 1,085 to the nearest hundred = 1100 (H) · Round 241 to the nearest hundred = 200 (A) · Round 47 to the nearest ten = 50 (O) · Round 428 to the nearest ten = 430 (E) · Round 2,888 to the nearest hundred = 2900 (G) · Round 288 to the nearest ten = 290 (I) · Round 109 to the nearest ten = 110 (U) · Round 4,260 to the nearest hundred = 4300 (B) · Round 3,748 to the nearest hundred = 3700 (C) · Round 1,590 to the nearest thousand = 2000 (D)

### Clue 2 (Bar model word problems): "LEFT HANDED JOURNAL"

The lead guide has 3 times as many machete blades as a teammate. The teammate has 6 machete blades. How many machete blades does the lead guide have? = 18 (L) · The lead guide used  $\frac{3}{5}$  of the stone tablets on the first day. The other 20 stone tablets were used the next day. How many stone tablets were there in all? = 50 (T) · The red team has 142 brass compasses and the blue team has 26 brass compasses. How many more brass compasses does the red team have? = 116 (H) · One group collected 3 jungle vines and another group collected 70 jungle vines. How many jungle vines in all? = 73 (A) · The lead guide has 228 ancient coins, packed 3 to a bag. How many bags can be filled? = 76 (F) · One group collected 103 jungle vines and another group collected 10 jungle vines. How many jungle vines in all? = 113 (E) · The lead guide has 5 times as many brass compasses as a teammate. The teammate has 12 brass compasses. How many brass compasses does the lead guide have? = 60 (N)

### Clue 3 (Integers): "THE THIEF RAN FROM A HARMLESS SPIDER"

$(-5) + 11 = 6$  (T) ·  $(-4) + 5 = 1$  (P) ·  $(-15) + 27 = 12$  (S) ·  $(-7) + 11 = 4$  (F) ·  $(-1) + 30 = 29$  (O) ·  $(-12) + 23 = 11$  (I) ·  $(-4) + 31 = 27$  (N) ·  $5 - (-11) = 16$  (H) ·  $28 - (-2) = 30$  (E) ·  $(-15) + 24 = 9$  (M) ·  $(-7) + 15 = 8$  (A) ·  $(-4) + 17 = 13$  (R) ·  $(-5) + 15 = 10$  (D) ·  $(-5) + 30 = 25$  (L)

### Clue 4 (Percentages): "A SPOTTED LEAF HAD GREY SILT MUD"

10% of 150 = 15 (A) · 40% of 40 = 16 (R) · 10% of 500 = 50 (D) · 50% of 118 = 59 (I) · 10% of 220 = 22 (O) · 5% of 800 = 40 (Y) · 75% of 60 = 45 (S) · 25% of 124 = 31 (P) · 5% of 520 = 26 (L) · 20% of 50 = 10 (E) · 50% of 50 = 25 (T) · 50% of 88 = 44 (F) · 5% of 460 = 23 (G) · 5% of 640 = 32 (U) · 50% of 70 = 35 (H) · 10% of 270 = 27 (M)

### Clue 5 (Missing addends): surviving statement is box 7 → Chloe Frazer

$37 + \underline{\quad} = 46 = 9$  ·  $36 + \underline{\quad} = 47 = 11$  ·  $17 + \underline{\quad} = 18 = 1$  ·  $25 + \underline{\quad} = 31 = 6$  ·  $7 + \underline{\quad} = 15 = 8$  ·  $28 + \underline{\quad} = 33 = 5$  ·  $6 + \underline{\quad} = 10 = 4$  ·  $24 + \underline{\quad} = 34 = 10$  ·  $5 + \underline{\quad} = 17 = 12$  ·  $26 + \underline{\quad} = 29 = 3$  ·  $28 + \underline{\quad} = 30 = 2$