The Mystery of the Sunken Citadel

Grade 8 math · Addition, Multiplication, Rounding, Word problems, Division · Reading level grades 7-9

Detective: _____ **Date:** _____

Someone broke into the Echo Jungle excavation headquarters and stole the golden Sun Codex! The lead archaeologist needs your help to examine the evidence, decode the suspect list, and identify the thief.

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.

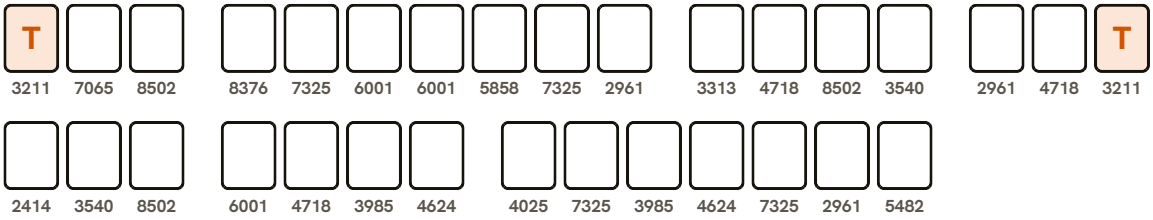
NAME	PRIMARY GEAR	FIELD SKILL	FOOTWEAR	HAIRSTYLE	COUNTERMEASURE
Marcus Thorne	grapple hook	rope climbing	wearing boots	ponytail hair	smoke bombs
Lily Montgomery	grapple hook	map drawing	wearing boots	ponytail hair	bright flares
Sophia Ruiz	sonar scanner	lock picking	wearing boots	ponytail hair	bright flares
Jordan Hayes	grapple hook	deciphering runes	wearing boots	ponytail hair	smoke bombs
Alex Vance	grapple hook	lock picking	wearing boots	ponytail hair	smoke bombs
Ethan Hunt	laser cutter	lock picking	wearing boots	braided hair	bright flares
Olivia Sterling	grapple hook	lock picking	wearing sneakers	ponytail hair	smoke bombs
Benjamin Cole	signal jammer	rope climbing	wearing boots	ponytail hair	smoke bombs
Maya Lin	signal jammer	deciphering runes	wearing boots	braided hair	loud whistles
Hannah Abbott	grapple hook	deciphering runes	wearing boots	braided hair	smoke bombs
Mia Tanaka	grapple hook	artifact restoration	wearing boots	ponytail hair	bright flares
Noah Sinclair	signal jammer	lock picking	wearing boots	ponytail hair	loud whistles
Nina Patel	laser cutter	artifact restoration	wearing boots	ponytail hair	loud whistles
Chloe Bennett	sonar scanner	map drawing	wearing boots	ponytail hair	smoke bombs
Mateo Gomez	signal jammer	map drawing	wearing sneakers	braided hair	bright flares
Elena Rostova	sonar scanner	map drawing	wearing boots	buzzed hair	loud whistles
Ava Rhodes	thermal visor	rope climbing	wearing sneakers	braided hair	loud whistles
Carter Cruz	sonar scanner	map drawing	wearing sneakers	ponytail hair	smoke bombs
David Zhang	sonar scanner	rope climbing	wearing sneakers	ponytail hair	bright flares
Samuel Oaks	laser cutter	artifact restoration	wearing boots	buzzed hair	bright flares
Zoe Brooks	signal jammer	artifact restoration	wearing boots	ponytail hair	bright flares

make your own at mathcrackers.com

CLUE 1 Addition

To recover the scout logs, tally up the total number of recovered journal pages across all sector teams.

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



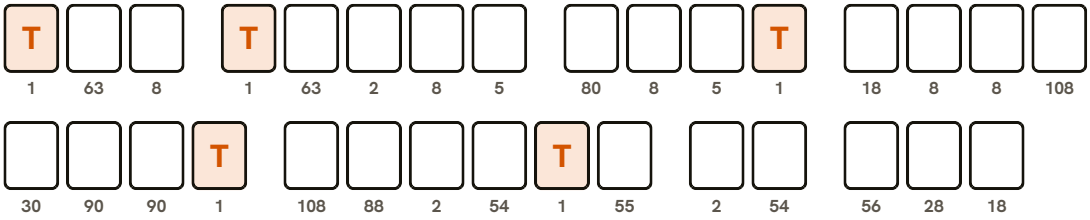
1620 + 1591 = ☐ → T	2060 + 1965 = ☐ → P	4028 + 3037 = ☐ → H
3644 + 4732 = ☐ → V	3087 + 2771 = ☐ → A	2486 + 1499 = ☐ → C
2830 + 3171 = ☐ → L	2813 + 5689 = ☐ → E	1501 + 1460 = ☐ → N
2841 + 1783 = ☐ → K	1084 + 1330 = ☐ → U	2454 + 3028 = ☐ → G
2954 + 1764 = ☐ → O	1409 + 2131 = ☐ → S	4242 + 3083 = ☐ → I
2042 + 1271 = ☐ → D		

Scratch space:

CLUE 2 Multiplication facts (1-12)

Each expedition crate holds multiple supplies, so calculate the total weight across all packed crates.

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



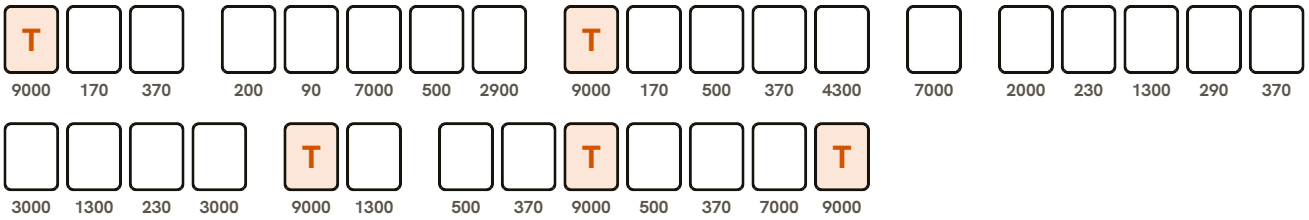
1 × 1 = ☐ → T	8 × 10 = ☐ → L	11 × 5 = ☐ → S	
9 × 10 = ☐ → O	7 × 9 = ☐ → H	7 × 8 = ☐ → M	4 × 7 = ☐ → U
6 × 9 = ☐ → N	5 × 6 = ☐ → B	6 × 3 = ☐ → D	8 × 11 = ☐ → R
1 × 2 = ☐ → I	9 × 12 = ☐ → P	2 × 4 = ☐ → E	5 × 1 = ☐ → F

Scratch space:

CLUE 3 Rounding

> The vault radar system gives approximate distance readings, so round each scan entry to the nearest hundred meters.

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



Round 9,399 to the nearest thousand ☐ → **T**

Round 2,916 to the nearest hundred ☐ → **D**

Round 231 to the nearest ten ☐ → **M**

Round 166 to the nearest ten ☐ → **H**

Round 1,676 to the nearest thousand ☐ → **S**

Round 4,308 to the nearest hundred ☐ → **W**

Round 368 to the nearest ten ☐ → **E**

Round 243 to the nearest hundred ☐ → **G**

Round 293 to the nearest ten ☐ → **K**

Round 7,066 to the nearest thousand ☐ → **A**

Round 1,304 to the nearest hundred ☐ → **O**

Round 3,234 to the nearest thousand ☐ → **B**

Round 89 to the nearest ten ☐ → **U**

Round 509 to the nearest hundred ☐ → **R**

Scratch space:

CLUE 4 Word problems

Solve these field report story problems to unlock the ciphered coordinates for the next clue.

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

A strand of

P							L	H			R
35	56	16	30	88	74	85			74	85	

hair turned up at the scene.

Scout lined up 7 rows of 5 carabiner. How many carabiner in all?

Answer: ☐ → **P**

Scout lined up 7 rows of 8 canteen. How many canteen in all?

Answer: ☐ → **O**

There were 43 carabiner. 27 were used up. How many carabiner are left?

Answer: ☐ → **N**

Scout lined up 6 rows of 5 compass. How many compass in all?

Answer: ☐ → **Y**

There were 116 tarp. 31 were used up. How many tarp are left?

Answer: ☐ → **I**

Scout found 22 canteen yesterday and 52 more today. How many canteen in all?

Answer: ☐ → **A**

There were 125 tarp. 37 were used up. How many tarp are left?

Answer: ☐ → **T**

Scratch space:

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

Split the expedition emergency rations equally among the research teams to determine each team share.

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:

15 ÷ 5 = ☐	72 ÷ 12 = ☐	12 ÷ 12 = ☐	40 ÷ 8 = ☐	72 ÷ 6 = ☐
81 ÷ 9 = ☐	22 ÷ 11 = ☐	56 ÷ 8 = ☐	33 ÷ 3 = ☐	12 ÷ 3 = ☐
110 ÷ 11 = ☐				

Step 2 - cross out the sentence with each answer:

1. The villain fired a grapple hook to scale the wall, then climbed down the cliff rope.
2. The villain activated a sonar scanner to ping the vault, then picked the vault lock.
3. The villain fired a grapple hook to scale the wall, then deciphered ancient runes on the arch.
4. The villain used a laser cutter to slice the door, then climbed down the cliff rope.
5. The villain turned on a signal jammer to disable security, then sketched a map of the hidden tunnels.
6. The villain activated a sonar scanner to ping the vault, then sketched a map of the hidden tunnels.
7. The villain fired a grapple hook to scale the wall, then picked the vault lock.
8. The villain turned on a signal jammer to disable security, then climbed down the cliff rope.
9. The villain used a laser cutter to slice the door, then sketched a map of the hidden tunnels.
10. The villain turned on a signal jammer to disable security, then picked the vault lock.
11. The villain switched on a thermal visor to see in the dark, then picked the vault lock.
12. The villain fired a grapple hook to scale the wall, then sketched a map of the hidden tunnels.

TEACHER / PARENT

Answer Key

The Mystery of the Sunken Citadel

Culprit: Benjamin Cole

signal jammer · rope climbing · wearing boots · ponytail hair · smoke bombs

Trail: Start 21 → Clue 1 16 → Clue 2 12 → Clue 3 5 → Clue 4 4 → Clue 5 1

Clue 1 (Addition): "THE VILLAIN DOES NOT USE LOCK PICKING"

1620 + 1591 = 3211 (T) · 2060 + 1965 = 4025 (P) · 4028 + 3037 = 7065 (H) · 3644 + 4732 = 8376 (V) · 3087 + 2771 = 5858 (A) · 2486 + 1499 = 3985 (C) · 2830 + 3171 = 6001 (L) · 2813 + 5689 = 8502 (E) · 1501 + 1460 = 2961 (N) · 2841 + 1783 = 4624 (K) · 1084 + 1330 = 2414 (U) · 2454 + 3028 = 5482 (G) · 2954 + 1764 = 4718 (O) · 1409 + 2131 = 3540 (S) · 4242 + 3083 = 7325 (I) · 2042 + 1271 = 3313 (D)

Clue 2 (Multiplication facts (1-12)): "THE THIEF LEFT DEEP BOOT PRINTS IN MUD"

1 × 1 = 1 (T) · 8 × 10 = 80 (L) · 11 × 5 = 55 (S) · 9 × 10 = 90 (O) · 7 × 9 = 63 (H) · 7 × 8 = 56 (M) · 4 × 7 = 28 (U) · 6 × 9 = 54 (N) · 5 × 6 = 30 (B) · 6 × 3 = 18 (D) · 8 × 11 = 88 (R) · 1 × 2 = 2 (I) · 9 × 12 = 108 (P) · 2 × 4 = 8 (E) · 5 × 1 = 5 (F)

Clue 3 (Rounding): "THE GUARD THREW A SMOKE BOMB TO RETREAT"

Round 9,399 to the nearest thousand = 9000 (T) · Round 2,916 to the nearest hundred = 2900 (D) · Round 231 to the nearest ten = 230 (M) · Round 166 to the nearest ten = 170 (H) · Round 1,676 to the nearest thousand = 2000 (S) · Round 4,308 to the nearest hundred = 4300 (W) · Round 368 to the nearest ten = 370 (E) · Round 243 to the nearest hundred = 200 (G) · Round 293 to the nearest ten = 290 (K) · Round 7,066 to the nearest thousand = 7000 (A) · Round 1,304 to the nearest hundred = 1300 (O) · Round 3,234 to the nearest thousand = 3000 (B) · Round 89 to the nearest ten = 90 (U) · Round 509 to the nearest hundred = 500 (R)

Clue 4 (Word problems): "PONYTAIL HAIR"

Scout lined up 7 rows of 5 carabiner. How many carabiner in all? = 35 (P) · Scout lined up 7 rows of 8 canteen. How many canteen in all? = 56 (O) · There were 43 carabiner. 27 were used up. How many carabiner are left? = 16 (N) · Scout lined up 6 rows of 5 compass. How many compass in all? = 30 (Y) · There were 116 tarp. 31 were used up. How many tarp are left? = 85 (I) · Scout found 22 canteen yesterday and 52 more today. How many canteen in all? = 74 (A) · There were 125 tarp. 37 were used up. How many tarp are left? = 88 (T)

Clue 5 (Division facts (1-12)): surviving statement is box 8 → Benjamin Cole

15 ÷ 5 = 3 · 72 ÷ 12 = 6 · 12 ÷ 12 = 1 · 40 ÷ 8 = 5 · 72 ÷ 6 = 12 · 81 ÷ 9 = 9 · 22 ÷ 11 = 2 · 56 ÷ 8 = 7 · 33 ÷ 3 = 11 · 12 ÷ 3 = 4 · 110 ÷ 11 = 10