The Mystery of Amber Cove

Grade 5 math · Place value, Addition, Subtraction, Fractions of a number · Reading level grades 5-6

Detective: _____ **Date:** _____

During a midnight storm, someone snuck into the camp tent, bypassed the security grid, and stole the ancient Golden Sun Disk. Expedition Delta needs your deduction skills to track down the culprit before they escape the island!

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.

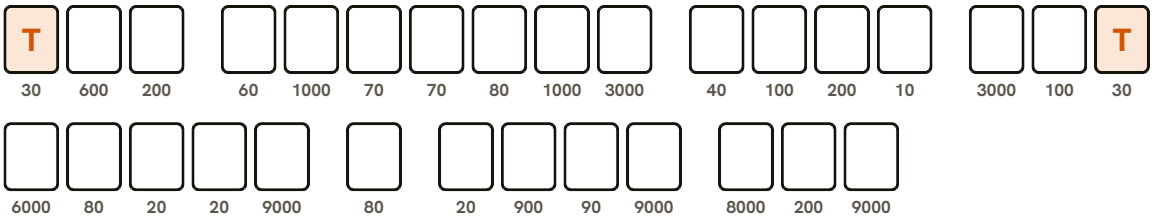
NAME	EXPLORATION GEAR	POCKET ARTIFACT	WRISTBAND COLOR	BANDANA COLOR	PHOBIA
Kevin Cross	Diving Scooter	Silver Coin	Wears Blue Wristband	Sapphire Bandana	Scared of Bats
Valerie Marsh	Grappling Hook	Silver Coin	Wears Blue Wristband	Emerald Bandana	Scared of Snakes
Marcus Vance	Torch Lantern	Compass Rose	Wears Red Wristband	Sapphire Bandana	Scared of Spiders
Alex Vance	Rope Launcher	Amber Bead	Wears Red Wristband	Sapphire Bandana	Scared of Snakes
Tara Cove	Grappling Hook	Jade Idol	Wears Red Wristband	Sapphire Bandana	Scared of Spiders
Quinn Archer	Grappling Hook	Amber Bead	Wears Blue Wristband	Sapphire Bandana	Scared of Spiders
Dana Explorer	Rope Launcher	Silver Coin	Wears Red Wristband	Sapphire Bandana	Scared of Bats
Brooke Sterling	Diving Scooter	Compass Rose	Wears Red Wristband	Sapphire Bandana	Scared of Bats
Ethan Huntley	Torch Lantern	Compass Rose	Wears Blue Wristband	Emerald Bandana	Scared of Spiders
Sam Horizon	Torch Lantern	Silver Coin	Wears Red Wristband	Sapphire Bandana	Scared of Bats
Laura Croft	Sonic Scanner	Amber Bead	Wears Red Wristband	Crimson Bandana	Scared of Bats
Julia Stone	Rope Launcher	Ruby Key	Wears Blue Wristband	Sapphire Bandana	Scared of Snakes
Rachel Reed	Torch Lantern	Jade Idol	Wears Blue Wristband	Emerald Bandana	Scared of Snakes
Piper Sands	Diving Scooter	Silver Coin	Wears Red Wristband	Sapphire Bandana	Scared of Bats
Nina West	Torch Lantern	Ruby Key	Wears Red Wristband	Sapphire Bandana	Scared of Bats
Charlie Drake	Grappling Hook	Jade Idol	Wears Blue Wristband	Sapphire Bandana	Scared of Bats
Fiona Flint	Rope Launcher	Jade Idol	Wears Red Wristband	Crimson Bandana	Scared of Spiders
Owen Wilder	Diving Scooter	Amber Bead	Wears Red Wristband	Crimson Bandana	Scared of Spiders
Ian Rivers	Diving Scooter	Jade Idol	Wears Blue Wristband	Emerald Bandana	Scared of Spiders
Wyatt Forest	Grappling Hook	Silver Coin	Wears Blue Wristband	Sapphire Bandana	Scared of Bats
Gabe Oakes	Diving Scooter	Jade Idol	Wears Red Wristband	Emerald Bandana	Scared of Snakes

make your own at mathcrackers.com

CLUE 1 Place value

> The camp security panel recorded a four-digit access code, but the numbers were scrambled by place value. Solve the digits to unlock the first clue.

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



What is the value of the 3 in 476,030? ☐ → T

What is the value of the 2 in 683,244? ☐ → E

What is the value of the 6 in 486,021? ☐ → C

What is the value of the 1 in 51,726? ☐ → I

What is the value of the 1 in 580,172? ☐ → O

What is the value of the 6 in 217,067? ☐ → V

What is the value of the 6 in 34,634? ☐ → H

What is the value of the 9 in 73,928? ☐ → U

What is the value of the 4 in 67,247? ☐ → D

What is the value of the 8 in 43,285? ☐ → A

What is the value of the 3 in 583,178? ☐ → N

What is the value of the 8 in 68,995? ☐ → K

What is the value of the 9 in 521,696? ☐ → B

What is the value of the 2 in 41,021? ☐ → R

What is the value of the 1 in 464,810? ☐ → S

What is the value of the 9 in 39,830? ☐ → Y

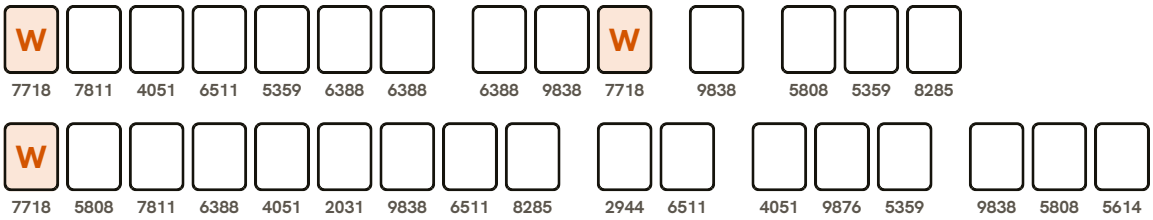
What is the value of the 7 in 843,971? ☐ → L

Scratch space:

CLUE 2 Addition

> Our team gathered all the scattered expedition supply crates along the trail. Totaling up the gear weight reveals where the suspect headed.

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



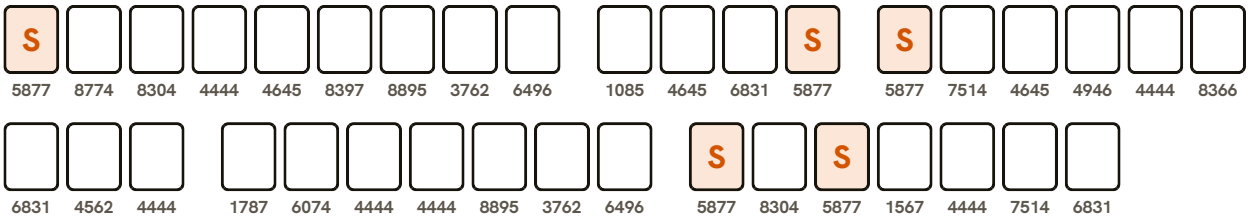
3290 + 4428 = ☐ → W	3782 + 4503 = ☐ → D	5270 + 4606 = ☐ → H
2634 + 2725 = ☐ → E	1935 + 2116 = ☐ → T	5436 + 4402 = ☐ → A
3740 + 1874 = ☐ → M	806 + 1225 = ☐ → B	5145 + 2666 = ☐ → I
2825 + 3563 = ☐ → S	1961 + 3847 = ☐ → R	1772 + 1172 = ☐ → O
3329 + 3182 = ☐ → N		

Scratch space:

CLUE 3 Subtraction

> The dive tank pressure gauge dropped significantly after the suspect fled. Calculate the missing air volume to uncover vital evidence.

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



6819 - 942 = ☐ → S

10174 - 1279 = ☐ → I

6524 - 4957 = ☐ → P

5242 - 597 = ☐ → A

7514 - 2568 = ☐ → R

8291 - 2217 = ☐ → L

8655 - 351 = ☐ → U

2799 - 1012 = ☐ → F

8396 - 882 = ☐ → C

5517 - 1755 = ☐ → N

8834 - 2338 = ☐ → G

4891 - 3806 = ☐ → B

11077 - 2711 = ☐ → D

10284 - 1887 = ☐ → K

5067 - 505 = ☐ → H

6827 - 2383 = ☐ → E

9545 - 2714 = ☐ → T

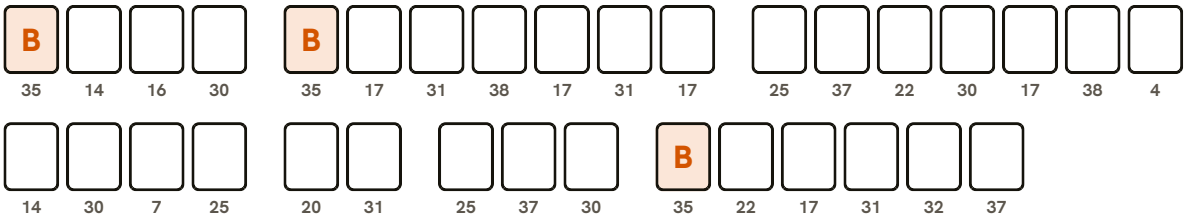
9301 - 527 = ☐ → Q

Scratch space:

CLUE 4 Fractions of a number

> Only a portion of the ancient stone tiles in the main hall contained hidden switches. Figure out the fraction of active tiles to decipher the note.

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



2/4 of 70 = ☐ → B

4/8 of 34 = ☐ → A

7/8 of 8 = ☐ → F

5/6 of 24 = ☐ → O

2/5 of 35 = ☐ → L

2/3 of 45 = ☐ → E

3/6 of 8 = ☐ → S

1/5 of 155 = ☐ → N

5/10 of 74 = ☐ → H

2/4 of 50 = ☐ → T

1/5 of 160 = ☐ → C

2/4 of 32 = ☐ → U

2/10 of 110 = ☐ → R

4/6 of 57 = ☐ → D

Scratch space:

CLUE 5 Fractions of a number - the last clue

> A fraction of the expedition maps were marked with red ink by the intruder. Work out the exact number of marked maps to reveal the final witness report.

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:

1/5 of 5 = ☐	1/6 of 30 = ☐	2/4 of 14 = ☐	1/4 of 32 = ☐
1/8 of 16 = ☐	1/6 of 18 = ☐	1/3 of 33 = ☐	1/10 of 120 = ☐
3/6 of 18 = ☐	2/4 of 8 = ☐	2/6 of 18 = ☐	

Step 2 - cross out the sentence with each answer:

1. The villain escaped underwater on a diving scooter, then dropped a shiny silver coin near the altar.
2. The villain mapped the hidden door using a sonic scanner, then snagged an amber bead on a vine.
3. The villain swung across the chasm with a grappling hook, then accidentally left behind a jade idol.
4. The villain lit up the dark cavern with a torch lantern, then accidentally left behind a jade idol.
5. The villain lit up the dark cavern with a torch lantern, then dropped a shiny silver coin near the altar.
6. The villain swung across the chasm with a grappling hook, then left a scratch with a ruby key.
7. The villain scaled the ancient stone cliff with a rope launcher, then dropped a shiny silver coin near the altar.
8. The villain lit up the dark cavern with a torch lantern, then dropped a compass rose in the mud.
9. The villain scaled the ancient stone cliff with a rope launcher, then snagged an amber bead on a vine.
10. The villain escaped underwater on a diving scooter, then dropped a compass rose in the mud.
11. The villain swung across the chasm with a grappling hook, then snagged an amber bead on a vine.
12. The villain escaped underwater on a diving scooter, then left a scratch with a ruby key.

TEACHER / PARENT

Answer Key

The Mystery of Amber Cove

Culprit: Brooke Sterling

Diving Scooter · Compass Rose · Wears Red Wristband · Sapphire Bandana · Scared of Bats

Trail: Start 21 → Clue 1 19 → Clue 2 11 → Clue 3 5 → Clue 4 4 → Clue 5 1

Clue 1 (Place value): "THE VILLAIN DOES NOT CARRY A RUBY KEY"

What is the value of the 3 in 476,030? = 30 (T) · What is the value of the 2 in 683,244? = 200 (E) · What is the value of the 6 in 486,021? = 6000 (C) · What is the value of the 1 in 51,726? = 1000 (I) · What is the value of the 1 in 580,172? = 100 (O) · What is the value of the 6 in 217,067? = 60 (V) · What is the value of the 6 in 34,634? = 600 (H) · What is the value of the 9 in 73,928? = 900 (U) · What is the value of the 4 in 67,247? = 40 (D) · What is the value of the 8 in 43,285? = 80 (A) · What is the value of the 3 in 583,178? = 3000 (N) · What is the value of the 8 in 68,995? = 8000 (K) · What is the value of the 9 in 521,696? = 90 (B) · What is the value of the 2 in 41,021? = 20 (R) · What is the value of the 1 in 464,810? = 10 (S) · What is the value of the 9 in 39,830? = 9000 (Y) · What is the value of the 7 in 843,971? = 70 (L)

Clue 2 (Addition): "WITNESS SAW A RED WRISTBAND ON THE ARM"

3290 + 4428 = 7718 (W) · 3782 + 4503 = 8285 (D) · 5270 + 4606 = 9876 (H) · 2634 + 2725 = 5359 (E) · 1935 + 2116 = 4051 (T) · 5436 + 4402 = 9838 (A) · 3740 + 1874 = 5614 (M) · 806 + 1225 = 2031 (B) · 5145 + 2666 = 7811 (I) · 2825 + 3563 = 6388 (S) · 1961 + 3847 = 5808 (R) · 1772 + 1172 = 2944 (O) · 3329 + 3182 = 6511 (N)

Clue 3 (Subtraction): "SQUEAKING BATS SCARED THE FLEEING SUSPECT"

6819 - 942 = 5877 (S) · 10174 - 1279 = 8895 (I) · 6524 - 4957 = 1567 (P) · 5242 - 597 = 4645 (A) · 7514 - 2568 = 4946 (R) · 8291 - 2217 = 6074 (L) · 8655 - 351 = 8304 (U) · 2799 - 1012 = 1787 (F) · 8396 - 882 = 7514 (C) · 5517 - 1755 = 3762 (N) · 8834 - 2338 = 6496 (G) · 4891 - 3806 = 1085 (B) · 11077 - 2711 = 8366 (D) · 10284 - 1887 = 8397 (K) · 5067 - 505 = 4562 (H) · 6827 - 2383 = 4444 (E) · 9545 - 2714 = 6831 (T) · 9301 - 527 = 8774 (Q)

Clue 4 (Fractions of a number): "BLUE BANDANA THREADS LEFT ON THE BRANCH"

2/4 of 70 = 35 (B) · 4/8 of 34 = 17 (A) · 7/8 of 8 = 7 (F) · 5/6 of 24 = 20 (O) · 2/5 of 35 = 14 (L) · 2/3 of 45 = 30 (E) · 3/6 of 8 = 4 (S) · 1/5 of 155 = 31 (N) · 5/10 of 74 = 37 (H) · 2/4 of 50 = 25 (T) · 1/5 of 160 = 32 (C) · 2/4 of 32 = 16 (U) · 2/10 of 110 = 22 (R) · 4/6 of 57 = 38 (D)

Clue 5 (Fractions of a number): surviving statement is box 10 → Brooke Sterling

1/5 of 5 = 1 · 1/6 of 30 = 5 · 2/4 of 14 = 7 · 1/4 of 32 = 8 · 1/8 of 16 = 2 · 1/6 of 18 = 3 · 1/3 of 33 = 11 · 1/10 of 120 = 12 · 3/6 of 18 = 9 · 2/4 of 8 = 4 · 2/6 of 18 = 6