



The Secret of Starfish Island

Grade 4 math · Place value, Addition, Subtraction, Rounding, Missing addends · Reading level grades 3-4

Detective: _____ **Date:** _____

The legendary Golden Compass has vanished from the Explorer Cabin! The Island Guide needs your help. One of the visitors took it. Follow the clues to find 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	NAVIGATION GEAR	SURVIVAL TOOL	WRITING HAND	CAP COLOR	FEAR
Jack	Spy Glass	Camp Lantern	Right Handed	Blue Cap	Afraid of Spiders
Ruby	Spy Glass	Camp Lantern	Right Handed	Blue Cap	Afraid of Caves
Grace	Spy Glass	Signal Whistle	Left Handed	Red Cap	Afraid of Spiders
Max	Sun Compass	Camp Lantern	Right Handed	Green Cap	Afraid of Heights
Zoe	Star Chart	Signal Whistle	Right Handed	Green Cap	Afraid of Spiders
Finn	Pocket Radar	Camp Lantern	Left Handed	Green Cap	Afraid of Caves
Emma	Bronze Map	Pocket Knife	Right Handed	Green Cap	Afraid of Spiders
Noah	Sun Compass	Pocket Knife	Left Handed	Green Cap	Afraid of Spiders
Lily	Sun Compass	Climbing Rope	Right Handed	Green Cap	Afraid of Spiders
Mia	Sun Compass	Camp Lantern	Left Handed	Blue Cap	Afraid of Heights
Ella	Spy Glass	Pocket Knife	Left Handed	Red Cap	Afraid of Spiders
Ben	Sun Compass	Signal Whistle	Right Handed	Blue Cap	Afraid of Caves
Cole	Bronze Map	Water Filter	Right Handed	Green Cap	Afraid of Spiders
Leo	Pocket Radar	Pocket Knife	Right Handed	Green Cap	Afraid of Caves
Ava	Sun Compass	Pocket Knife	Right Handed	Green Cap	Afraid of Spiders
Maya	Star Chart	Water Filter	Right Handed	Blue Cap	Afraid of Spiders
Annie	Bronze Map	Camp Lantern	Left Handed	Red Cap	Afraid of Heights
Toby	Pocket Radar	Climbing Rope	Left Handed	Blue Cap	Afraid of Heights
Owen	Star Chart	Signal Whistle	Left Handed	Green Cap	Afraid of Heights
Clara	Bronze Map	Water Filter	Right Handed	Blue Cap	Afraid of Heights
Jake	Star Chart	Camp Lantern	Right Handed	Green Cap	Afraid of Heights

CLUE 1 Place value

To unlock the secret diary of the island we must decode the page numbers using their place values. This reveals our first clue.

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

T			T											T				
3000	60	20	3000	60	400	20	40	7000	50	20	300	800	50	3000	9000	300	20	100
												T						
300	400	10	800	100	4000	5000	60	400	300	3000	4000	20						

What is the value of the 3 in 23,570? → **T**

What is the value of the 5 in 5,893? → **W**

What is the value of the 6 in 7,065? → **H**

What is the value of the 1 in 5,133? → **A**

What is the value of the 4 in 948? → **F**

What is the value of the 7 in 17,219? → **D**

What is the value of the 1 in 7,317? → **G**

What is the value of the 2 in 829? → **E**

What is the value of the 5 in 950? → **O**

What is the value of the 3 in 310? → **S**

What is the value of the 9 in 49,206? → **U**

What is the value of the 8 in 2,804? → **N**

What is the value of the 4 in 64,378? → **L**

What is the value of the 4 in 478? → **I**

Scratch space:

CLUE 2 Addition

We count the total number of footprints found near the dock. Adding up all the tracks helps us narrow down who went where.

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

T 2334	6334	4052	T 2334	6334	6502	4052	7707	7888	9558	4052	2684	T 2334	6334	4052	6502	6086
6086	6502	6560	6334	T 2334	6334	9598	9177	2684	T 2334	6655	3827	6086	6502	T 2334	4052	

$1155 + 1179 = \square \rightarrow \boxed{\text{T}}$	$1531 + 1153 = \square \rightarrow \boxed{\text{D}}$	$4074 + 2012 = \square \rightarrow \boxed{\text{R}}$
$3324 + 5853 = \square \rightarrow \boxed{\text{N}}$	$4570 + 1990 = \square \rightarrow \boxed{\text{G}}$	$1649 + 2178 = \square \rightarrow \boxed{\text{W}}$
$3000 + 3502 = \square \rightarrow \boxed{\text{I}}$	$4084 + 5514 = \square \rightarrow \boxed{\text{A}}$	$4128 + 3760 = \square \rightarrow \boxed{\text{U}}$
$2910 + 3745 = \square \rightarrow \boxed{\text{O}}$	$1284 + 2768 = \square \rightarrow \boxed{\text{E}}$	$4786 + 2921 = \square \rightarrow \boxed{\text{F}}$
$4488 + 5070 = \square \rightarrow \boxed{\text{S}}$	$4319 + 2015 = \square \rightarrow \boxed{\text{H}}$	

Scratch space:

CLUE 3
Subtraction

The thief took some supplies from the camp. By subtracting the remaining gear from our list we find a clue left in the dirt.

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

T			T															
5396	4492	5373	5396	4492	8006	5373	1732	5814	6846	2634	6846	4531	6846	1370	1732	5814	2303	1190
6846	3740	2303	8410	4531	5373	8410												

$7438 - 2042 = \boxed{} \rightarrow \boxed{\text{T}}$

$2282 - 912 = \boxed{} \rightarrow \boxed{\text{Y}}$

$6507 - 1134 = \boxed{} \rightarrow \boxed{\text{E}}$

$10828 - 2418 = \boxed{} \rightarrow \boxed{\text{B}}$

$9485 - 4954 = \boxed{} \rightarrow \boxed{\text{W}}$

$6676 - 4373 = \boxed{} \rightarrow \boxed{\text{O}}$

$8846 - 4354 = \boxed{} \rightarrow \boxed{\text{H}}$

$3452 - 2262 = \boxed{} \rightarrow \boxed{\text{M}}$

$7868 - 2054 = \boxed{} \rightarrow \boxed{\text{R}}$

$9536 - 1530 = \boxed{} \rightarrow \boxed{\text{I}}$

$8247 - 1401 = \boxed{} \rightarrow \boxed{\text{A}}$

$3976 - 2244 = \boxed{} \rightarrow \boxed{\text{F}}$

$8218 - 4478 = \boxed{} \rightarrow \boxed{\text{C}}$

$5119 - 2485 = \boxed{} \rightarrow \boxed{\text{N}}$

Scratch space:

CLUE 4 Rounding

Our island radar only displays rounded distances to the nearest ten miles. We use this rounded data to track the suspect.

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

A																
70	90	200	2000	7000	430	90	2900	200	500	300	3000	290	2900	370	370	2000
						A										
1300	900	300	90	5000	170	70	430	3000	300	50	2000	4300				

Round 73 to the nearest ten → **A**

Round 2,168 to the nearest thousand → **N**

Round 908 to the nearest hundred → **L**

Round 46 to the nearest ten → **U**

Round 6,503 to the nearest thousand → **Y**

Round 2,663 to the nearest thousand → **F**

Round 429 to the nearest ten → **S**

Round 4,502 to the nearest thousand → **H**

Round 191 to the nearest hundred → **I**

Round 90 to the nearest ten → **T**

Round 2,913 to the nearest hundred → **R**

Round 289 to the nearest ten → **G**

Round 369 to the nearest ten → **E**

Round 484 to the nearest hundred → **P**

Round 347 to the nearest hundred → **O**

Round 173 to the nearest ten → **W**

Round 1,256 to the nearest hundred → **C**

Round 4,266 to the nearest hundred → **D**

Scratch space:

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

We must balance the weight on the rope bridge. Finding the missing weight lets us safely cross and find the final clue.

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:

$8 + \underline{\quad} = 20$

$14 + \underline{\quad} = 22$

$40 + \underline{\quad} = 42$

$9 + \underline{\quad} = 16$

$18 + \underline{\quad} = 28$

$30 + \underline{\quad} = 36$

$38 + \underline{\quad} = 41$

$40 + \underline{\quad} = 51$

$21 + \underline{\quad} = 22$

$27 + \underline{\quad} = 32$

$38 + \underline{\quad} = 42$

Step 2 - cross out the sentence with each answer:

1. The villain creeps past the sleeping parrots, then ducks under the giant ferns.
2. The villain sneaks through the thick jungle, then ducks under the giant ferns.
3. The villain crosses the shaky rope bridge, then escapes into the hidden cave.
4. The villain sneaks through the thick jungle, then runs down the sandy beach.
5. The villain paddles across the quiet lagoon, then ducks under the giant ferns.
6. The villain climbs up the ancient stone steps, then ducks under the giant ferns.
7. The villain creeps past the sleeping parrots, then slips into the old shipwreck.
8. The villain climbs up the ancient stone steps, then hides behind the banana trees.
9. The villain climbs up the ancient stone steps, then escapes into the hidden cave.
10. The villain creeps past the sleeping parrots, then escapes into the hidden cave.
11. The villain creeps past the sleeping parrots, then hides behind the banana trees.
12. The villain sneaks through the thick jungle, then hides behind the banana trees.

Answer Key

The Secret of Starfish Island

Culprit: Lily

Sun Compass · Climbing Rope · Right Handed · Green Cap · Afraid of Spiders

Trail: Start 21 → Clue 1 17 → Clue 2 11 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Place value): "THE THIEF DOES NOT USE A SIGNAL WHISTLE"

What is the value of the 3 in 23,570? = 3000 (T) · What is the value of the 5 in 5,893? = 5000 (W) · What is the value of the 6 in 7,065? = 60 (H) · What is the value of the 1 in 5,133? = 100 (A) · What is the value of the 4 in 948? = 40 (F) · What is the value of the 7 in 17,219? = 7000 (D) · What is the value of the 1 in 7,317? = 10 (G) · What is the value of the 2 in 829? = 20 (E) · What is the value of the 5 in 950? = 50 (O) · What is the value of the 3 in 310? = 300 (S) · What is the value of the 9 in 49,206? = 9000 (U) · What is the value of the 8 in 2,804? = 800 (N) · What is the value of the 4 in 64,378? = 4000 (L) · What is the value of the 4 in 478? = 400 (I)

Clue 2 (Addition): "THE THIEF USED THEIR RIGHT HAND TO WRITE"

1155 + 1179 = 2334 (T) · 1531 + 1153 = 2684 (D) · 4074 + 2012 = 6086 (R) · 3324 + 5853 = 9177 (N) · 4570 + 1990 = 6560 (G) · 1649 + 2178 = 3827 (W) · 3000 + 3502 = 6502 (I) · 4084 + 5514 = 9598 (A) · 4128 + 3760 = 7888 (U) · 2910 + 3745 = 6655 (O) · 1284 + 2768 = 4052 (E) · 4786 + 2921 = 7707 (F) · 4488 + 5070 = 9558 (S) · 4319 + 2015 = 6334 (H)

Clue 3 (Subtraction): "THE THIEF RAN AWAY FROM A COBWEB"

7438 - 2042 = 5396 (T) · 2282 - 912 = 1370 (Y) · 6507 - 1134 = 5373 (E) · 10828 - 2418 = 8410 (B) · 9485 - 4954 = 4531 (W) · 6676 - 4373 = 2303 (O) · 8846 - 4354 = 4492 (H) · 3452 - 2262 = 1190 (M) · 7868 - 2054 = 5814 (R) · 9536 - 1530 = 8006 (I) · 8247 - 1401 = 6846 (A) · 3976 - 2244 = 1732 (F) · 8218 - 4478 = 3740 (C) · 5119 - 2485 = 2634 (N)

Clue 4 (Rounding): "A TINY STRIP OF GREEN CLOTH WAS FOUND"

Round 73 to the nearest ten = 70 (A) · Round 2,168 to the nearest thousand = 2000 (N) · Round 908 to the nearest hundred = 900 (L) · Round 46 to the nearest ten = 50 (U) · Round 6,503 to the nearest thousand = 7000 (Y) · Round 2,663 to the nearest thousand = 3000 (F) · Round 429 to the nearest ten = 430 (S) · Round 4,502 to the nearest thousand = 5000 (H) · Round 191 to the nearest hundred = 200 (I) · Round 90 to the nearest ten = 90 (T) · Round 2,913 to the nearest hundred = 2900 (R) · Round 289 to the nearest ten = 290 (G) · Round 369 to the nearest ten = 370 (E) · Round 484 to the nearest hundred = 500 (P) · Round 347 to the nearest hundred = 300 (O) · Round 173 to the nearest ten = 170 (W) · Round 1,256 to the nearest hundred = 1300 (C) · Round 4,266 to the nearest hundred = 4300 (D)

Clue 5 (Missing addends): surviving statement is box 9 → Lily

8 + ___ = 20 = 12 · 14 + ___ = 22 = 8 · 40 + ___ = 42 = 2 · 9 + ___ = 16 = 7 · 18 + ___ = 28 = 10 · 30 + ___ = 36 = 6 · 38 + ___ = 41 = 3 · 40 + ___ = 51 = 11 · 21 + ___ = 22 = 1 · 27 + ___ = 32 = 5 · 38 + ___ = 42 = 4