



The Case of the Lost Golden Compass

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

Detective: _____ Date: _____

The Golden Compass has vanished from the Explorer Club! A sneaky bandit swiped it right before the big map reveal. Follow the trails and solve the math puzzles to catch the culprit!

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 sneaky bandit is _____

Possible suspects

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

NAME	EXPLORER GEAR	ESCAPE TOOL	FOOTPRINT TYPE	STRAND OF HAIR	CAMP DEFENSE
Leo	super flashlight	sticky boots	wears muddy boots	straight black hair	loud noise
Jack	super flashlight	grappling line	wears clean sneakers	straight black hair	bright light
Finn	super flashlight	smoke bomb	wears muddy boots	straight black hair	sticky honey
Sam	sonar map	net trap	wears muddy boots	spiky red hair	loud noise
Chloe	jungle machete	decoder ring	wears muddy boots	straight black hair	sticky honey
Grace	speedy glider	net trap	wears muddy boots	straight black hair	sticky honey
Owen	speedy glider	grappling line	wears muddy boots	curly brown hair	sticky honey
Emma	super flashlight	smoke bomb	wears clean sneakers	straight black hair	bright light
Ruby	super flashlight	decoder ring	wears clean sneakers	straight black hair	bright light
Ava	climbing hook	sticky boots	wears muddy boots	curly brown hair	loud noise
Toby	climbing hook	grappling line	wears clean sneakers	straight black hair	sticky honey
Lara	climbing hook	net trap	wears clean sneakers	curly brown hair	sticky honey
Zack	speedy glider	net trap	wears muddy boots	spiky red hair	loud noise
Zoe	super flashlight	decoder ring	wears clean sneakers	spiky red hair	loud noise
Noah	jungle machete	smoke bomb	wears muddy boots	straight black hair	sticky honey
Ella	sonar map	smoke bomb	wears muddy boots	straight black hair	sticky honey
Maya	climbing hook	sticky boots	wears muddy boots	curly brown hair	bright light
Mia	jungle machete	grappling line	wears muddy boots	curly brown hair	loud noise
Lily	climbing hook	decoder ring	wears muddy boots	straight black hair	loud noise
Sophia	jungle machete	smoke bomb	wears clean sneakers	spiky red hair	loud noise
Indiana	climbing hook	grappling line	wears clean sneakers	spiky red hair	loud noise

CLUE 1 Place value

We found a locked chest on the beach. The security code uses the value of the hundreds digit from our coin count.

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

50 6000 200 100 20 900 9000 300 50 9000 400 200 70 900 400 50 3000 70 200

20 9000 200 5000 400 9000 200 10 10 300 900 40

What is the value of the 5 in 254? → **T**

What is the value of the 6 in 6,800? → **H**

What is the value of the 4 in 241? → **G**

What is the value of the 1 in 8,710? → **R**

What is the value of the 9 in 4,923? → **N**

What is the value of the 2 in 6,217? → **E**

What is the value of the 3 in 5,397? →

What is the value of the 5 in 15,419? → **C**

What is the value of the 9 in 9,128? → **D**

What is the value of the 3 in 53,544? → **U**

What is the value of the 1 in 149? → **B**

What is the value of the 2 in 4,124? → **A**

What is the value of the 4 in 461? →

What is the value of the 7 in 173? → **S**

Scratch space:

CLUE 2 Rounding

The scout radar screen shows the bandit's trail, but it only displays numbers rounded to the nearest ten.

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

T						T					T							
430	7000	20	2900	700	700	430	30	3000	50	170	430	2000	2000	7000	700	4300		

								T	
900	90	290	290	200	5000	700	700	430	2000

Round 428 to the nearest ten → **T**

Round 223 to the nearest hundred → **Y**

Round 24 to the nearest ten → **E**

Round 168 to the nearest ten → **N**

Round 2,078 to the nearest thousand → **S**

Round 5,294 to the nearest thousand → **B**

Round 7,178 to the nearest thousand → **H**

Round 867 to the nearest hundred → **M**

Round 737 to the nearest hundred → **O**

Round 286 to the nearest ten → **D**

Round 2,849 to the nearest thousand → **R**

Round 4,270 to the nearest hundred → **W**

Round 50 to the nearest ten → **I**

Round 2,948 to the nearest hundred → **F**

Round 31 to the nearest ten → **P**

Round 86 to the nearest ten → **U**

Scratch space:

CLUE 3 Addition

To cross the rope bridge safely, we must add up the weights of all our supply packs.

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

T																			
4879	6974	5049	9672	3843	3567	4797	4292	4879	3821	2370	4292	7272	7272	5049	4797	9222	3567		

	T																		
3821	4879	4292	4880	6794	3963	6974	9222	3567	5049	3963									

$2739 + 2140 = \square \rightarrow$ T	$2839 + 1453 = \square \rightarrow$ I	$2873 + 1924 = \square \rightarrow$ D
$2131 + 1832 = \square \rightarrow$ Y	$724 + 1646 = \square \rightarrow$ L	$3492 + 1557 = \square \rightarrow$ E
$2127 + 1716 = \square \rightarrow$ A	$2805 + 6417 = \square \rightarrow$ O	$1983 + 2897 = \square \rightarrow$ C
$2218 + 1603 = \square \rightarrow$ S	$3368 + 3904 = \square \rightarrow$ P	$4259 + 2715 = \square \rightarrow$ H
$4877 + 4795 = \square \rightarrow$ B	$2117 + 1450 = \square \rightarrow$ N	$4121 + 2673 = \square \rightarrow$ K

Scratch space:

CLUE 4

Subtraction

The bandit dropped a heavy bag of stolen gems. We must subtract the ones we recovered to see how many are left.

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

W															
7240	5486	7152	2992	7987	5117	4084	1828	4681	6284	4522	1828	4901	2814	2673	6284

1954	4944	1828	5658	4234	2673	1828	4901	4522

$9110 - 1870 = \square \rightarrow \boxed{\text{W}}$

$5641 - 740 = \square \rightarrow \boxed{\text{I}}$

$6662 - 2428 = \square \rightarrow \boxed{\text{K}}$

$8287 - 2629 = \square \rightarrow \boxed{\text{C}}$

$2940 - 126 = \square \rightarrow \boxed{\text{G}}$

$2944 - 1116 = \square \rightarrow \boxed{\text{A}}$

$9434 - 4912 = \square \rightarrow \boxed{\text{R}}$

$8119 - 2633 = \square \rightarrow \boxed{\text{E}}$

$4406 - 2452 = \square \rightarrow \boxed{\text{B}}$

$6222 - 3549 = \square \rightarrow \boxed{\text{H}}$

$11940 - 3953 = \square \rightarrow \boxed{\text{U}}$

$8974 - 2690 = \square \rightarrow \boxed{\text{T}}$

$4311 - 1319 = \square \rightarrow \boxed{\text{O}}$

$9203 - 4086 = \square \rightarrow \boxed{\text{N}}$

$7711 - 2767 = \square \rightarrow \boxed{\text{L}}$

$10610 - 3458 = \square \rightarrow \boxed{\text{F}}$

$8165 - 4081 = \square \rightarrow \boxed{\text{D}}$

$9086 - 4405 = \square \rightarrow \boxed{\text{S}}$

Scratch space:

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

We need to share our emergency jungle bananas equally among our rescue teams before we go any further.

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:

$30 \div 10 = \square$

$108 \div 12 = \square$

$5 \div 1 = \square$

$108 \div 9 = \square$

$8 \div 1 = \square$

$16 \div 4 = \square$

$77 \div 7 = \square$

$2 \div 1 = \square$

$84 \div 12 = \square$

$72 \div 12 = \square$

$120 \div 12 = \square$

Step 2 - cross out the sentence with each answer:

1. The villain lit up the dark cave with a super flashlight, then escaped behind a thick cloud from a smoke bomb.
2. The villain lit up the dark cave with a super flashlight, then zipped up the high stone wall using a grappling line.
3. The villain zoomed off the cliff on a speedy glider, then blocked the trail behind them with a net trap.
4. The villain swung across the canyon with a climbing hook, then blocked the trail behind them with a net trap.
5. The villain chopped through the thick vines with a jungle machete, then escaped behind a thick cloud from a smoke bomb.
6. The villain zoomed off the cliff on a speedy glider, then zipped up the high stone wall using a grappling line.
7. The villain zoomed off the cliff on a speedy glider, then unlocked the ancient chest with a decoder ring.
8. The villain chopped through the thick vines with a jungle machete, then zipped up the high stone wall using a grappling line.
9. The villain tracked the secret path with a sonar map, then escaped behind a thick cloud from a smoke bomb.
10. The villain chopped through the thick vines with a jungle machete, then unlocked the ancient chest with a decoder ring.
11. The villain chopped through the thick vines with a jungle machete, then scrambled up the wet cave wall using sticky boots.
12. The villain swung across the canyon with a climbing hook, then unlocked the ancient chest with a decoder ring.

Answer Key

The Case of the Lost Golden Compass

Culprit: Finn

super flashlight · smoke bomb · wears muddy boots · straight black hair · sticky honey

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

Clue 1 (Place value): "THE BANDIT DOES NOT USE A DECODER RING"

What is the value of the 5 in 254? = 50 (T) · What is the value of the 6 in 6,800? = 6000 (H) · What is the value of the 4 in 241? = 40 (G) · What is the value of the 1 in 8,710? = 10 (R) · What is the value of the 9 in 4,923? = 900 (N) · What is the value of the 2 in 6,217? = 200 (E) · What is the value of the 3 in 5,397? = 300 (I) · What is the value of the 5 in 15,419? = 5000 (C) · What is the value of the 9 in 9,128? = 9000 (D) · What is the value of the 3 in 53,544? = 3000 (U) · What is the value of the 1 in 149? = 100 (B) · What is the value of the 2 in 4,124? = 20 (A) · What is the value of the 4 in 461? = 400 (O) · What is the value of the 7 in 173? = 70 (S)

Clue 2 (Rounding): "THE FOOTPRINTS SHOW MUDDY BOOTS"

Round 428 to the nearest ten = 430 (T) · Round 223 to the nearest hundred = 200 (Y) · Round 24 to the nearest ten = 20 (E) · Round 168 to the nearest ten = 170 (N) · Round 2,078 to the nearest thousand = 2000 (S) · Round 5,294 to the nearest thousand = 5000 (B) · Round 7,178 to the nearest thousand = 7000 (H) · Round 867 to the nearest hundred = 900 (M) · Round 737 to the nearest hundred = 700 (O) · Round 286 to the nearest ten = 290 (D) · Round 2,849 to the nearest thousand = 3000 (R) · Round 4,270 to the nearest hundred = 4300 (W) · Round 50 to the nearest ten = 50 (I) · Round 2,948 to the nearest hundred = 2900 (F) · Round 31 to the nearest ten = 30 (P) · Round 86 to the nearest ten = 90 (U)

Clue 3 (Addition): "THE BANDIT SLIPPED ON STICKY HONEY"

$2739 + 2140 = 4879$ (T) · $2839 + 1453 = 4292$ (I) · $2873 + 1924 = 4797$ (D) · $2131 + 1832 = 3963$ (Y) · $724 + 1646 = 2370$ (L) · $3492 + 1557 = 5049$ (E) · $2127 + 1716 = 3843$ (A) · $2805 + 6417 = 9222$ (O) · $1983 + 2897 = 4880$ (C) · $2218 + 1603 = 3821$ (S) · $3368 + 3904 = 7272$ (P) · $4259 + 2715 = 6974$ (H) · $4877 + 4795 = 9672$ (B) · $2117 + 1450 = 3567$ (N) · $4121 + 2673 = 6794$ (K)

Clue 4 (Subtraction): "WE FOUND A STRAIGHT BLACK HAIR"

$9110 - 1870 = 7240$ (W) · $5641 - 740 = 4901$ (I) · $6662 - 2428 = 4234$ (K) · $8287 - 2629 = 5658$ (C) · $2940 - 126 = 2814$ (G) · $2944 - 1116 = 1828$ (A) · $9434 - 4912 = 4522$ (R) · $8119 - 2633 = 5486$ (E) · $4406 - 2452 = 1954$ (B) · $6222 - 3549 = 2673$ (H) · $11940 - 3953 = 7987$ (U) · $8974 - 2690 = 6284$ (T) · $4311 - 1319 = 2992$ (O) · $9203 - 4086 = 5117$ (N) · $7711 - 2767 = 4944$ (L) · $10610 - 3458 = 7152$ (F) · $8165 - 4081 = 4084$ (D) · $9086 - 4405 = 4681$ (S)

Clue 5 (Division facts (1-12)): surviving statement is box 1 → Finn

$30 \div 10 = 3$ · $108 \div 12 = 9$ · $5 \div 1 = 5$ · $108 \div 9 = 12$ · $8 \div 1 = 8$ · $16 \div 4 = 4$ · $77 \div 7 = 11$ · $2 \div 1 = 2$ · $84 \div 12 = 7$ · $72 \div 12 = 6$ · $120 \div 12 = 10$