



The Mystery of the Golden Compass

Grade 8 math · Addition, Multiplication, Rounding, Word problems, Missing addends · Reading level grades 1-2

Detective: _____ **Date:** _____

Oh no! Someone took the Golden Compass from the Treehouse. We must find the Rogue Explorer. Look for clues in the jungle branches.

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	ADVENTURE GEAR	SPECIAL TOOL	WRITING HAND	BADGE CAP COLOR	FAVORITE SNACK
Ben	brass binoculars	safety whistle	left-handed writer	orange badge cap	sweet honey crackers
Ella	climbing rope	safety whistle	left-handed writer	orange badge cap	sweet honey crackers
Toby	brass binoculars	sample jar	right-handed writer	blue badge cap	salty pretzel sticks
Noah	pocket compass	sample jar	left-handed writer	green badge cap	sweet honey crackers
Jack	brass binoculars	decoder ring	left-handed writer	orange badge cap	sweet honey crackers
Finn	jungle map	sample jar	left-handed writer	blue badge cap	sweet honey crackers
Annie	glowing flashlight	marking chalk	right-handed writer	orange badge cap	sweet honey crackers
Mia	climbing rope	sample jar	left-handed writer	orange badge cap	sweet honey crackers
Ruby	climbing rope	marking chalk	left-handed writer	green badge cap	chewy fruit snacks
Zoe	pocket compass	marking chalk	left-handed writer	orange badge cap	salty pretzel sticks
Lara	glowing flashlight	marking chalk	left-handed writer	blue badge cap	salty pretzel sticks
Diego	pocket compass	magnifying glass	left-handed writer	orange badge cap	chewy fruit snacks
Jake	climbing rope	sample jar	right-handed writer	green badge cap	sweet honey crackers
Oliver	jungle map	marking chalk	right-handed writer	blue badge cap	salty pretzel sticks
Indiana	climbing rope	safety whistle	right-handed writer	green badge cap	chewy fruit snacks
Max	climbing rope	marking chalk	left-handed writer	green badge cap	salty pretzel sticks
Marco	jungle map	sample jar	left-handed writer	orange badge cap	salty pretzel sticks
Lily	jungle map	decoder ring	right-handed writer	green badge cap	sweet honey crackers
Grace	glowing flashlight	safety whistle	left-handed writer	orange badge cap	sweet honey crackers
Dora	jungle map	sample jar	left-handed writer	orange badge cap	chewy fruit snacks
Penny	jungle map	decoder ring	right-handed writer	orange badge cap	salty pretzel sticks

CLUE 1 Addition

We must count our canteen cups. Let us add the cups on the top shelf to the cups on the bottom shelf.

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

T																	T
5129	2959	7531	6993	2139	6275	6275	8759	2139	4373	8568	7748	7531	5481	4373	7748	5129	
9517	5481	7531	8759	8568	7531	3413	7748	8568	7531	4847	4847	2139	4373	9712			

$2266 + 2863 = \square \rightarrow \text{T}$	$1318 + 821 = \square \rightarrow \text{I}$	$2774 + 5794 = \square \rightarrow \text{D}$
$4557 + 3191 = \square \rightarrow \text{O}$	$4789 + 2204 = \square \rightarrow \text{V}$	$1559 + 1400 = \square \rightarrow \text{H}$
$1913 + 2934 = \square \rightarrow \text{R}$	$1748 + 2625 = \square \rightarrow \text{N}$	$4152 + 3379 = \square \rightarrow \text{E}$
$5747 + 3770 = \square \rightarrow \text{U}$	$2584 + 2897 = \square \rightarrow \text{S}$	$1259 + 2154 = \square \rightarrow \text{C}$
$4458 + 5254 = \square \rightarrow \text{G}$	$4506 + 4253 = \square \rightarrow \text{A}$	$2518 + 3757 = \square \rightarrow \text{L}$

Scratch space:

CLUE 2
Multiplication facts (1-12)

The scouts sleep in rows of tents. Multiply the rows of tents by the scouts in each tent to find the total.

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

T																
32	27	9	72	42	55	9	30	4	45	30	28	60	32	32	9	18

		T		T						T						
30	60	32	27	32	27	9	42	9	40	32	27	4	18	54		

$8 \times 4 = \square \rightarrow$ T	$5 \times 6 = \square \rightarrow$ W	$11 \times 5 = \square \rightarrow$ U	$3 \times 3 = \square \rightarrow$ E
$6 \times 10 = \square \rightarrow$ I	$9 \times 3 = \square \rightarrow$ H	$9 \times 6 = \square \rightarrow$ D	$4 \times 7 = \square \rightarrow$ R
$8 \times 9 = \square \rightarrow$ C	$4 \times 10 = \square \rightarrow$ F	$7 \times 6 = \square \rightarrow$ L	$9 \times 5 = \square \rightarrow$ S
$1 \times 4 = \square \rightarrow$ A	$3 \times 6 = \square \rightarrow$ N		

Scratch space:

CLUE 3 Rounding

The weather dial shows the wind speed. The dial is tricky and only displays the speed rounded to the nearest ten.

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

T														
30	2900	50	900	50	700	5000	2900	110	900	2900	4300	1100	50	90

300	170	110	300	5000	50	170	300	170	70	7000	3700	700

Round 31 to the nearest ten → **T**

Round 93 to the nearest ten → **Y**

Round 6,884 to the nearest thousand → **M**

Round 1,145 to the nearest hundred → **N**

Round 907 to the nearest hundred → **D**

Round 73 to the nearest ten → **U**

Round 4,253 to the nearest hundred → **O**

Round 52 to the nearest ten → **E**

Round 268 to the nearest hundred → **C**

Round 4,938 to the nearest thousand → **K**

Round 3,694 to the nearest hundred → **B**

Round 2,908 to the nearest hundred → **H**

Round 705 to the nearest hundred → **S**

Round 169 to the nearest ten → **R**

Round 107 to the nearest ten → **A**

Scratch space:

CLUE 4

Word problems

Our young guide has a riddle about trail markers. Solve the puzzle of the blue and red flags to unlock the box.

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

A strand of O D C P hair turned up at the scene.

The Lead Ranger found 8 climbing ropes yesterday and 68 more today. How many climbing ropes in all?

Answer: → O

The Lead Ranger found 4 trail maps yesterday and 58 more today. How many trail maps in all?

Answer: → R

There were 70 trail maps. 36 were used up. How many trail maps are left?

Answer: → B

The Lead Ranger lined up 11 rows of 6 climbing ropes. How many climbing ropes in all?

Answer: → E

The Lead Ranger found 56 canteens yesterday and 4 more today. How many canteens in all?

Answer: → A

The Lead Ranger found 12 binoculars yesterday and 2 more today. How many binoculars in all?

Answer: → G

The Lead Ranger lined up 9 rows of 9 trail maps. How many trail maps in all?

Answer: → N

Scratch space:

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

We have ten walkie talkies but some are missing from the rack. Find how many are lost to open the secret drawer.

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:

$20 + \underline{\quad} = 29$

$34 + \underline{\quad} = 46$

$14 + \underline{\quad} = 15$

$24 + \underline{\quad} = 32$

$3 + \underline{\quad} = 6$

$17 + \underline{\quad} = 24$

$13 + \underline{\quad} = 18$

$8 + \underline{\quad} = 10$

$6 + \underline{\quad} = 17$

$25 + \underline{\quad} = 35$

$8 + \underline{\quad} = 12$

Step 2 - cross out the sentence with each answer:

1. The villain turned on the glowing flashlight, then blew a loud blast on a safety whistle.
2. The villain checked the shiny pocket compass, then used a magnifying glass to read the lock.
3. The villain looked through the brass binoculars, then decoded the secret note with a decoder ring.
4. The villain turned on the glowing flashlight, then put a leaf in a small sample jar.
5. The villain unfolded the paper jungle map, then decoded the secret note with a decoder ring.
6. The villain looked through the brass binoculars, then blew a loud blast on a safety whistle.
7. The villain looked through the brass binoculars, then put a leaf in a small sample jar.
8. The villain checked the shiny pocket compass, then marked the escape path with yellow marking chalk.
9. The villain climbed up the thick rope, then blew a loud blast on a safety whistle.
10. The villain turned on the glowing flashlight, then marked the escape path with yellow marking chalk.
11. The villain climbed up the thick rope, then marked the escape path with yellow marking chalk.
12. The villain climbed up the thick rope, then put a leaf in a small sample jar.

Answer Key

The Mystery of the Golden Compass

Culprit: Ben

brass binoculars · safety whistle · left-handed writer · orange badge cap · sweet honey crackers

Trail: Start 21 → Clue 1 18 → Clue 2 13 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Addition): "THE VILLAIN DOES NOT USE A DECODER RING"

$2266 + 2863 = 5129$ (T) · $1318 + 821 = 2139$ (I) · $2774 + 5794 = 8568$ (D) · $4557 + 3191 = 7748$ (O) · $4789 + 2204 = 6993$ (V) · $1559 + 1400 = 2959$ (H) · $1913 + 2934 = 4847$ (R) · $1748 + 2625 = 4373$ (N) · $4152 + 3379 = 7531$ (E) · $5747 + 3770 = 9517$ (U) · $2584 + 2897 = 5481$ (S) · $1259 + 2154 = 3413$ (C) · $4458 + 5254 = 9712$ (G) · $4506 + 4253 = 8759$ (A) · $2518 + 3757 = 6275$ (L)

Clue 2 (Multiplication facts (1-12)): "THE CLUE WAS WRITTEN WITH THE LEFT HAND"

$8 \times 4 = 32$ (T) · $5 \times 6 = 30$ (W) · $11 \times 5 = 55$ (U) · $3 \times 3 = 9$ (E) · $6 \times 10 = 60$ (I) · $9 \times 3 = 27$ (H) · $9 \times 6 = 54$ (D) · $4 \times 7 = 28$ (R) · $8 \times 9 = 72$ (C) · $4 \times 10 = 40$ (F) · $7 \times 6 = 42$ (L) · $9 \times 5 = 45$ (S) · $1 \times 4 = 4$ (A) · $3 \times 6 = 18$ (N)

Clue 3 (Rounding): "THE DESK HAD HONEY CRACKER CRUMBS"

Round 31 to the nearest ten = 30 (T) · Round 93 to the nearest ten = 90 (Y) · Round 6,884 to the nearest thousand = 7000 (M) · Round 1,145 to the nearest hundred = 1100 (N) · Round 907 to the nearest hundred = 900 (D) · Round 73 to the nearest ten = 70 (U) · Round 4,253 to the nearest hundred = 4300 (O) · Round 52 to the nearest ten = 50 (E) · Round 268 to the nearest hundred = 300 (C) · Round 4,938 to the nearest thousand = 5000 (K) · Round 3,694 to the nearest hundred = 3700 (B) · Round 2,908 to the nearest hundred = 2900 (H) · Round 705 to the nearest hundred = 700 (S) · Round 169 to the nearest ten = 170 (R) · Round 107 to the nearest ten = 110 (A)

Clue 4 (Word problems): "ORANGE BADGE CAP"

The Lead Ranger found 8 climbing ropes yesterday and 68 more today. How many climbing ropes in all? = 76 (O) · The Lead Ranger found 4 trail maps yesterday and 58 more today. How many trail maps in all? = 62 (R) · There were 70 trail maps. 36 were used up. How many trail maps are left? = 34 (B) · The Lead Ranger lined up 11 rows of 6 climbing ropes. How many climbing ropes in all? = 66 (E) · The Lead Ranger found 56 canteens yesterday and 4 more today. How many canteens in all? = 60 (A) · The Lead Ranger found 12 binoculars yesterday and 2 more today. How many binoculars in all? = 14 (G) · The Lead Ranger lined up 9 rows of 9 trail maps. How many trail maps in all? = 81 (N)

Clue 5 (Missing addends): surviving statement is box 6 → Ben

$20 + \underline{\quad} = 29 = 9$ · $34 + \underline{\quad} = 46 = 12$ · $14 + \underline{\quad} = 15 = 1$ · $24 + \underline{\quad} = 32 = 8$ · $3 + \underline{\quad} = 6 = 3$ · $17 + \underline{\quad} = 24 = 7$ · $13 + \underline{\quad} = 18 = 5$ · $8 + \underline{\quad} = 10 = 2$ · $6 + \underline{\quad} = 17 = 11$ · $25 + \underline{\quad} = 35 = 10$ · $8 + \underline{\quad} = 12 = 4$