



The Mystery of the Lost Golden Compass

Grade 5 math · Multiplication, Place value, Fractions of a number, Order of operations, Division · Reading level grades 3-4

Detective: _____ Date: _____

Someone took the legendary Golden Compass from the Camp Director's desk! Our Junior Rangers must search the trail and solve the clues before the sun sets on the campgrounds.

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 camper is _____

Possible suspects

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

NAME	SPECIAL GEAR	BACKUP TOOL	DOMINANT HAND	CAP COLOR	CAMP OBSTACLE
Ellie Compass	headlamp hat	canteen strap	left handed	blue cap	allergic to pollen
Henry Hiker	zipline pulley	trail chalk	left handed	brown cap	hates sticky mud
Wyatt Wilder	headlamp hat	survival match	left handed	blue cap	hates sticky mud
Ivy Forest	headlamp hat	whistle	right-handed	blue cap	hates sticky mud
Felix Boots	climbing boots	magnifying glass	left handed	brown cap	hates sticky mud
Peter Ranger	grappling hook	trail chalk	right-handed	red cap	hates sticky mud
Leo Ridge	zipline pulley	whistle	left handed	brown cap	hates sticky mud
Nate Canyon	grappling hook	whistle	left handed	blue cap	hates sticky mud
Katie Camp	grappling hook	canteen strap	right-handed	blue cap	hates sticky mud
Ulysses Wood	grappling hook	magnifying glass	left handed	red cap	hates sticky mud
Clara Trail	grappling hook	trail chalk	left handed	blue cap	hates sticky mud
Jack River	climbing boots	trail chalk	right-handed	brown cap	hates sticky mud
Ruby Stone	headlamp hat	magnifying glass	left handed	blue cap	hates sticky mud
Grace Peak	headlamp hat	whistle	left handed	brown cap	afraid of spiders
Tessa Tree	zipline pulley	magnifying glass	right-handed	blue cap	afraid of spiders
Quinn Adventure	decoder ring	magnifying glass	left handed	red cap	afraid of spiders
Maya Valley	grappling hook	whistle	right-handed	red cap	afraid of spiders
Benny Scout	zipline pulley	trail chalk	left handed	red cap	hates sticky mud
Olivia Pine	zipline pulley	canteen strap	left handed	blue cap	afraid of spiders
Zoe Zenith	decoder ring	whistle	left handed	brown cap	afraid of spiders
Danny Map	grappling hook	magnifying glass	left handed	blue cap	hates sticky mud

Multiplication facts (1-12)

We find crates stacked in the supply tent. If we count the rows and columns of gear, we can uncover the first clue.

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

36 35 3 60 99 9 100 3 60 20 56 3 44 9 56 36 77 44 3

36 35 3 44 77 60 108 7 108 99 70 21 99 36 11 35

$$3 \times 12 = \boxed{} \rightarrow \boxed{\text{T}}$$

$$11 \times 7 = \boxed{} \rightarrow \boxed{\text{U}}$$

$$9 \times 11 = \boxed{} \rightarrow \boxed{\mathbf{A}}$$

$1 \times 3 = \boxed{} \rightarrow \boxed{\mathbf{E}}$

$1 \times 11 = \boxed{} \rightarrow \boxed{\text{C}}$

$$7 \times 8 = \boxed{} \rightarrow \boxed{0}$$

$3 \times 7 = \square \rightarrow \boxed{\mathbf{M}}$

$$12 \times 9 = \boxed{} \rightarrow \boxed{\mathbf{v}}$$

$$6 \times 10 = \boxed{} \rightarrow \boxed{\text{R}}$$

$5 \times 4 = \square \rightarrow \mathbf{D}$

$7 \times 5 = \boxed{} \rightarrow \boxed{\text{H}}$

$$1 \times 7 = \boxed{} \rightarrow \boxed{1}$$

$10 \times 10 = \boxed{} \rightarrow \boxed{\mathbf{G}}$

$7 \times 10 = \boxed{} \rightarrow \boxed{\text{L}}$

$9 \times 1 = \boxed{} \rightarrow \boxed{\text{N}}$

$11 \times 4 = \boxed{} \rightarrow \boxed{\mathbf{S}}$

Scratch space:

CLUE 2 Place value

The camp radio box has a code screen. By looking at the value of the digit in the tens place, we unlock the next clue.

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

T						T								T				
500	7000	30	40	30	800	500	7000	600	1000	400	3000	60	300	1000	500	9000	600	10
							T											
800	700	5000	1000	400	700	1000	500	7000	30	20	40	300	800	800				

What is the value of the 5 in 974,536? → **T**

What is the value of the 2 in 917,020? → **C**

What is the value of the 6 in 480,563? → **R**

What is the value of the 7 in 147,432? → **H**

What is the value of the 4 in 307,645? → **L**

What is the value of the 3 in 23,020? → **P**

What is the value of the 4 in 650,413? → **D**

What is the value of the 8 in 321,841? → **F**

What is the value of the 9 in 39,605? → **W**

What is the value of the 1 in 86,910? → **S**

What is the value of the 5 in 365,174? → **U**

What is the value of the 1 in 991,033? → **N**

What is the value of the 7 in 95,761? → **O**

What is the value of the 3 in 71,318? → **I**

What is the value of the 3 in 668,937? → **E**

What is the value of the 6 in 524,625? → **A**

Scratch space:

Fractions of a number

The team finds a box of field notebooks. Only a fraction of them have the special silver seal, revealing our third clue.

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

A number line from 0 to 100 with boxes for numbers. The number 28 is highlighted in orange in two different boxes.

Box Number	Value
1	28
2	13
3	10
4	15
5	40
6	3
7	5
8	23
9	10
10	12
11	27
12	32
13	10
14	7
15	28
16	13
17	10
18	
19	5
20	3
21	12
22	28
23	27
24	39
25	10
26	10
27	23
28	12
29	7
30	15

$$2/10 \text{ of } 140 = \boxed{} \rightarrow \boxed{\text{T}}$$

$$1/6 \text{ of } 192 = \boxed{} \rightarrow \boxed{\mathbf{V}}$$

$$\frac{1}{6} \text{ of } 42 = \boxed{} \rightarrow \boxed{\text{R}}$$

$4/8$ of 10 = $\rightarrow$ **M**

$$2/8 \text{ of } 156 = \boxed{} \rightarrow \boxed{\text{K}}$$

$$2/6 \text{ of } 69 = \boxed{} \rightarrow \boxed{\text{P}}$$

$$2/10 \text{ of } 65 = \boxed{} \rightarrow \boxed{\text{H}}$$

$$2/5 \text{ of } 25 = \boxed{} \rightarrow \boxed{\text{E}}$$

$3/6$ of $54 = \boxed{} \rightarrow \boxed{0}$

$3/5$ of 25 = $\rightarrow$ **Y**

$\frac{1}{5}$ of 200 = $\rightarrow$ **J**

6/10 of 5 = $\rightarrow$ **U**

$$1/10 \text{ of } 120 = \boxed{} \rightarrow \boxed{\text{D}}$$

Scratch space:

CLUE 4

Order of operations

We need to solve the ancient stone dial in order. Doing the math rules in the right order unlocks the fourth clue.

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

S																		S
8	79	72	68	17	43	75	68	16	58	17	73	80	77	52	58	8		

										S		
27	79	73	36	79	36	27	71	68	17	75	8	71

$7 \times 4 - 20 = \square \rightarrow \text{S}$

$8 \times 10 - 9 = \square \rightarrow \text{H}$

$7 \times 9 - 27 = \square \rightarrow \text{N}$

$10 \times 7 - 2 = \square \rightarrow \text{E}$

$8 \times 4 - 15 = \square \rightarrow \text{B}$

$40 + 8 \times 5 = \square \rightarrow \text{I}$

$47 + 6 \times 5 = \square \rightarrow \text{C}$

$54 + 3 \times 7 = \square \rightarrow \text{U}$

$48 + 4 \times 6 = \square \rightarrow \text{M}$

$7 \times 8 - 29 = \square \rightarrow \text{T}$

$22 + 7 \times 3 = \square \rightarrow \text{L}$

$6 \times 10 - 2 = \square \rightarrow \text{A}$

$9 \times 8 - 20 = \square \rightarrow \text{W}$

$10 \times 9 - 17 = \square \rightarrow \text{R}$

$9 \times 12 - 29 = \square \rightarrow \text{O}$

$3 \times 8 - 8 = \square \rightarrow \text{F}$

Scratch space:

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

The rescue team splits up the golden tokens equally among all the search groups, giving us our 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:

$24 \div 4 = \boxed{}$

$40 \div 4 = \boxed{}$

$33 \div 11 = \boxed{}$

$48 \div 6 = \boxed{}$

$28 \div 7 = \boxed{}$

$66 \div 6 = \boxed{}$

$42 \div 6 = \boxed{}$

$5 \div 1 = \boxed{}$

$63 \div 7 = \boxed{}$

$9 \div 9 = \boxed{}$

$2 \div 1 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain swings across the canyon, then sparks a campfire spark.
2. The villain scales the stone wall, then marks the path ahead.
3. The villain swings across the canyon, then blows a loud warning.
4. The villain slides down the rope, then marks the path ahead.
5. The villain lights up the dark tunnel, then blows a loud warning.
6. The villain swings across the canyon, then marks the path ahead.
7. The villain slides down the rope, then sparks a campfire spark.
8. The villain slides down the rope, then tightens the water flask.
9. The villain lights up the dark tunnel, then marks the path ahead.
10. The villain swings across the canyon, then examines the tiny dust.
11. The villain scales the stone wall, then examines the tiny dust.
12. The villain lights up the dark tunnel, then examines the tiny dust.

Answer Key

The Mystery of the Lost Golden Compass

Culprit: Ruby Stone

headlamp hat · magnifying glass · left handed · blue cap · hates sticky mud

Trail: Start 21 → Clue 1 20 → Clue 2 14 → Clue 3 9 → Clue 4 4 → Clue 5 1

Clue 1 (Multiplication facts (1-12)): "THE RANGER DOES NOT USE THE SURVIVAL MATCH"

$3 \times 12 = 36$ (T) · $11 \times 7 = 77$ (U) · $9 \times 11 = 99$ (A) · $1 \times 3 = 3$ (E) · $1 \times 11 = 11$ (C) · $7 \times 8 = 56$ (O) · $3 \times 7 = 21$ (M) · $12 \times 9 = 108$ (V) · $6 \times 10 = 60$ (R) · $5 \times 4 = 20$ (D) · $7 \times 5 = 35$ (H) · $1 \times 7 = 7$ (I) · $10 \times 10 = 100$ (G) · $7 \times 10 = 70$ (L) · $9 \times 1 = 9$ (N) · $11 \times 4 = 44$ (S)

Clue 2 (Place value): "THE LEFT HAND PRINT WAS FOUND ON THE CLIFF"

What is the value of the 5 in 974,536? = 500 (T) · What is the value of the 2 in 917,020? = 20 (C) · What is the value of the 6 in 480,563? = 60 (R) · What is the value of the 7 in 147,432? = 7000 (H) · What is the value of the 4 in 307,645? = 40 (L) · What is the value of the 3 in 23,020? = 3000 (P) · What is the value of the 4 in 650,413? = 400 (D) · What is the value of the 8 in 321,841? = 800 (F) · What is the value of the 9 in 39,605? = 9000 (W) · What is the value of the 1 in 86,910? = 10 (S) · What is the value of the 5 in 365,174? = 5000 (U) · What is the value of the 1 in 991,033? = 1000 (N) · What is the value of the 7 in 95,761? = 700 (O) · What is the value of the 3 in 71,318? = 300 (I) · What is the value of the 3 in 668,937? = 30 (E) · What is the value of the 6 in 524,625? = 600 (A)

Clue 3 (Fractions of a number): "THEY JUMPED OVER THE MUD TO KEEP DRY"

$2/10$ of 140 = 28 (T) · $1/6$ of 192 = 32 (V) · $1/6$ of 42 = 7 (R) · $4/8$ of 10 = 5 (M) · $2/8$ of 156 = 39 (K) · $2/6$ of 69 = 23 (P) · $2/10$ of 65 = 13 (H) · $2/5$ of 25 = 10 (E) · $3/6$ of 54 = 27 (O) · $3/5$ of 25 = 15 (Y) · $1/5$ of 200 = 40 (J) · $6/10$ of 5 = 3 (U) · $1/10$ of 120 = 12 (D)

Clue 4 (Order of operations): "SOME BLUE FABRIC WAS TORN ON THE BUSH"

$7 \times 4 - 20 = 8$ (S) · $8 \times 10 - 9 = 71$ (H) · $7 \times 9 - 27 = 36$ (N) · $10 \times 7 - 2 = 68$ (E) · $8 \times 4 - 15 = 17$ (B) · $40 + 8 \times 5 = 80$ (I) · $47 + 6 \times 5 = 77$ (C) · $54 + 3 \times 7 = 75$ (U) · $48 + 4 \times 6 = 72$ (M) · $7 \times 8 - 29 = 27$ (T) · $22 + 7 \times 3 = 43$ (L) · $6 \times 10 - 2 = 58$ (A) · $9 \times 8 - 20 = 52$ (W) · $10 \times 9 - 17 = 73$ (R) · $9 \times 12 - 29 = 79$ (O) · $3 \times 8 - 8 = 16$ (F)

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

$24 \div 4 = 6$ · $40 \div 4 = 10$ · $33 \div 11 = 3$ · $48 \div 6 = 8$ · $28 \div 7 = 4$ · $66 \div 6 = 11$ · $42 \div 6 = 7$ · $5 \div 1 = 5$ · $63 \div 7 = 9$ · $9 \div 9 = 1$ · $2 \div 1 = 2$