# The Case of the Missing Golden Compass

Grade 7 math · Addition, Subtraction, Multiplication, Skip counting, Division · Reading level grades 3-4

**Detective:** _____ **Date:** _____

Someone snuck into the Cloudtop Island Observatory and swiped the ancient Golden Compass! The Junior Rangers are on the case to examine clues, crack the codes, and track down 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 Shadow Bandit is** _____

## Possible suspects

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

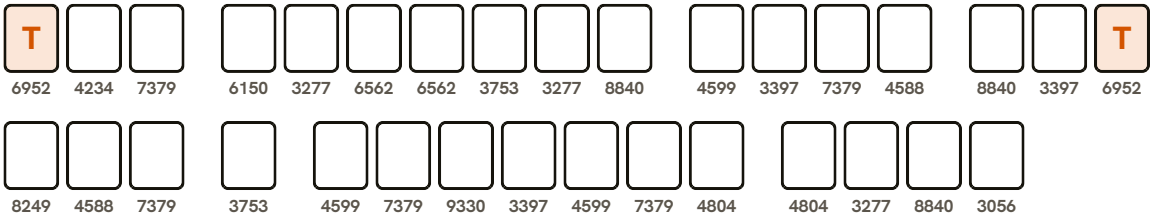
| NAME | TRAVEL GEAR | SCOUT TOOL | DOMINANT HAND | HAT COLOR | FEARED ITEM |
|---|---|---|---|---|---|
| **Riley** | Climbing Boots | Decoder Ring | Right Handed | Dark Blue Hat | Loud Whistles |
| **Sawyer** | Zip Line | Signal Flare | Left Handed | Forest Green Hat | Squeaky Toys |
| **Skyler** | Climbing Boots | Signal Flare | Right Handed | Forest Green Hat | Squeaky Toys |
| **Peyton** | Smoke Bombs | Flashlight Gloves | Left Handed | Bright Red Hat | Squeaky Toys |
| **Sam** | Climbing Boots | Spyglass | Left Handed | Bright Red Hat | Squeaky Toys |
| **Parker** | Grappling Hook | Compass Watch | Right Handed | Forest Green Hat | Squeaky Toys |
| **Logan** | Smoke Bombs | Flashlight Gloves | Left Handed | Forest Green Hat | Squeaky Toys |
| **Kai** | Zip Line | Decoder Ring | Left Handed | Bright Red Hat | Bright Lights |
| **Rowan** | Smoke Bombs | Spyglass | Left Handed | Forest Green Hat | Squeaky Toys |
| **Emerson** | Zip Line | Decoder Ring | Left Handed | Forest Green Hat | Squeaky Toys |
| **Alex** | Smoke Bombs | Signal Flare | Right Handed | Dark Blue Hat | Loud Whistles |
| **Casey** | Grappling Hook | Decoder Ring | Left Handed | Bright Red Hat | Loud Whistles |
| **Morgan** | Grappling Hook | Spyglass | Left Handed | Forest Green Hat | Bright Lights |
| **Reese** | Glider Wings | Compass Watch | Right Handed | Forest Green Hat | Squeaky Toys |
| **Dakota** | Grappling Hook | Signal Flare | Right Handed | Dark Blue Hat | Squeaky Toys |
| **Harper** | Climbing Boots | Spyglass | Left Handed | Forest Green Hat | Bright Lights |
| **Hayden** | Zip Line | Decoder Ring | Left Handed | Dark Blue Hat | Loud Whistles |
| **Jordan** | Climbing Boots | Flashlight Gloves | Left Handed | Forest Green Hat | Squeaky Toys |
| **Taylor** | Glider Wings | Signal Flare | Left Handed | Bright Red Hat | Bright Lights |
| **Avery** | Smoke Bombs | Decoder Ring | Right Handed | Forest Green Hat | Loud Whistles |
| **Kendall** | Smoke Bombs | Flashlight Gloves | Right Handed | Bright Red Hat | Squeaky Toys |

make your own at mathcrackers.com

## CLUE 1 Addition

The Junior Rangers gather all recovered trail journals to count up total clue pages.

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



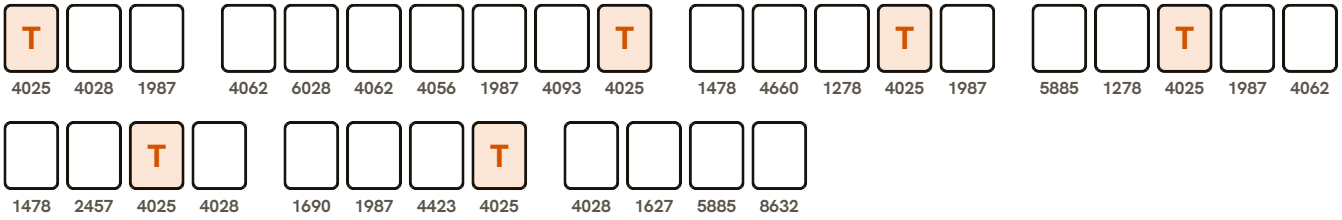

| | | |
|---|---|---|
| 3126 + 3826 = ☐ → T | 1680 + 2073 = ☐ → A | 3224 + 5025 = ☐ → U |
| 3959 + 3420 = ☐ → E | 2497 + 3653 = ☐ → V | 3455 + 5385 = ☐ → N |
| 1773 + 1504 = ☐ → I | 2839 + 1395 = ☐ → H | 2026 + 1030 = ☐ → G |
| 1555 + 3044 = ☐ → D | 1519 + 1878 = ☐ → O | 2934 + 1654 = ☐ → S |
| 1993 + 2811 = ☐ → R | 4771 + 4559 = ☐ → C | 2205 + 4357 = ☐ → L |

Scratch space:

## CLUE 2 Subtraction

Scout Maya compares the stolen supplies with what remains in the camp supply trunk.

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




8180 - 4155 = ☐ → T

4204 - 2514 = ☐ → L

6413 - 4426 = ☐ → E

2573 - 946 = ☐ → A

8380 - 3720 = ☐ → R

1859 - 581 = ☐ → O

3111 - 654 = ☐ → I

4229 - 201 = ☐ → H

5527 - 1465 = ☐ → S

7318 - 1290 = ☐ → U

9498 - 3613 = ☐ → N

5966 - 4488 = ☐ → W

13010 - 4378 = ☐ → D

7823 - 3767 = ☐ → P

5924 - 1501 = ☐ → F

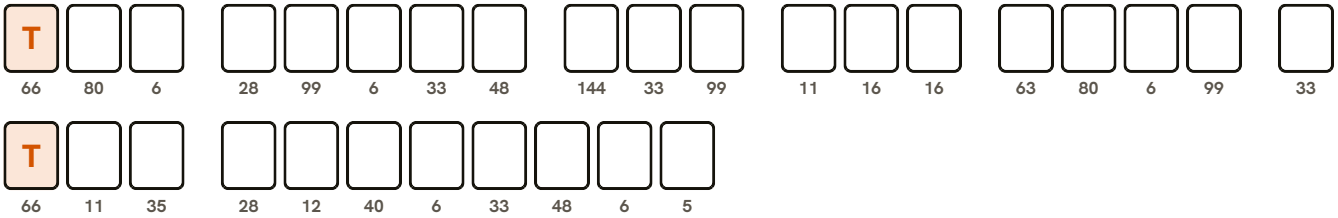
8022 - 3929 = ☐ → C

Scratch space:

## CLUE 3 Multiplication facts (1-12)

> The search team inspects several identical gear crates stacked in neat rows.

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



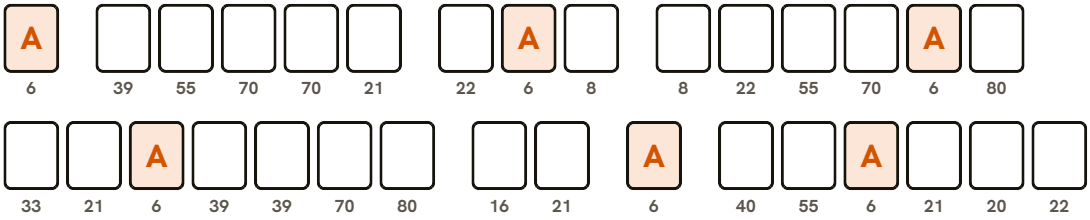

| | | |
|---|---|---|
| 11 × 6 = ☐ → T | 7 × 5 = ☐ → Y | 7 × 4 = ☐ → S |
| 11 × 9 = ☐ → N | 2 × 8 = ☐ → F | 3 × 11 = ☐ → A |
| 6 × 8 = ☐ → K | 3 × 2 = ☐ → E | 3 × 4 = ☐ → Q |
| 5 × 8 = ☐ → U | | |
| 12 × 12 = ☐ → R | 9 × 7 = ☐ → W | 5 × 1 = ☐ → D |
| 10 × 8 = ☐ → H | 1 × 11 = ☐ → O | |

Scratch space:

## CLUE 4 Skip counting

The trackers follow a series of marked trail posts spaced at equal steps.

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




Skip-count by 2s. Fill the blank: 2, 4, ___, 8, 10 ☐ → **A**

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, ___, 80, 90 ☐ → **E**

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, ___, 24, 26 ☐ → **H**

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, ___, 90, 100 ☐ → **D**

Skip-count by 10s. Fill the blank: 10, 20, 30, ___, 50, 60 ☐ → **B**

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, ___, 60, 65 ☐ → **R**

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, ___, 42, 45 ☐ → **G**

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, ___, 36, 39 ☐ → **S**

Skip-count by 2s. Fill the blank: 2, 4, 6, ___, 10, 12 ☐ → **T**

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, ___, 24, 27 ☐ → **N**

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, ___, 18, 20 ☐ → **O**

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, ___, 22, 24 ☐ → **C**

Scratch space:

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

> The camp director splits the remaining flashlights evenly among the search squads.

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:**

48 ÷ 6 = ☐ | 77 ÷ 7 = ☐ | 44 ÷ 11 = ☐ | 20 ÷ 2 = ☐ | 24 ÷ 4 = ☐

108 ÷ 12 = ☐ | 72 ÷ 6 = ☐ | 5 ÷ 5 = ☐ | 9 ÷ 3 = ☐ | 6 ÷ 3 = ☐

14 ÷ 2 = ☐

**Step 2 - cross out the sentence with each answer:**

1. The villain swung in on a grappling hook, then scouted ahead with a spyglass.
2. The villain scaled the wall in climbing boots, then fired off a signal flare.
3. The villain glided across on glider wings, then unlocked the chest with a decoder ring.
4. The villain dropped smoke bombs to hide, then lit the path with flashlight gloves.
5. The villain zipped away on a zip line, then fired off a signal flare.
6. The villain dropped smoke bombs to hide, then fired off a signal flare.
7. The villain dropped smoke bombs to hide, then checked the time on a compass watch.
8. The villain dropped smoke bombs to hide, then scouted ahead with a spyglass.
9. The villain swung in on a grappling hook, then unlocked the chest with a decoder ring.
10. The villain scaled the wall in climbing boots, then checked the time on a compass watch.
11. The villain scaled the wall in climbing boots, then lit the path with flashlight gloves.
12. The villain glided across on glider wings, then fired off a signal flare.

TEACHER / PARENT

# Answer Key

The Case of the Missing Golden Compass

## Culprit: Sawyer

Zip Line · Signal Flare · Left Handed · Forest Green Hat · Squeaky Toys

Trail: Start 21 → Clue 1 15 → Clue 2 9 → Clue 3 6 → Clue 4 4 → Clue 5 1

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

3126 + 3826 = 6952 (T) · 1680 + 2073 = 3753 (A) · 3224 + 5025 = 8249 (U) · 3959 + 3420 = 7379 (E) · 2497 + 3653 = 6150 (V) · 3455 + 5385 = 8840 (N) · 1773 + 1504 = 3277 (I) · 2839 + 1395 = 4234 (H) · 2026 + 1030 = 3056 (G) · 1555 + 3044 = 4599 (D) · 1519 + 1878 = 3397 (O) · 2934 + 1654 = 4588 (S) · 1993 + 2811 = 4804 (R) · 4771 + 4559 = 9330 (C) · 2205 + 4357 = 6562 (L)

### Clue 2 (Subtraction): "THE SUSPECT WROTE NOTES WITH LEFT HAND"

8180 - 4155 = 4025 (T) · 4204 - 2514 = 1690 (L) · 6413 - 4426 = 1987 (E) · 2573 - 946 = 1627 (A) · 8380 - 3720 = 4660 (R) · 1859 - 581 = 1278 (O) · 3111 - 654 = 2457 (I) · 4229 - 201 = 4028 (H) · 5527 - 1465 = 4062 (S) · 7318 - 1290 = 6028 (U) · 9498 - 3613 = 5885 (N) · 5966 - 4488 = 1478 (W) · 13010 - 4378 = 8632 (D) · 7823 - 3767 = 4056 (P) · 5924 - 1501 = 4423 (F) · 8022 - 3929 = 4093 (C)

### Clue 3 (Multiplication facts (1-12)): "THE SNEAK RAN OFF WHEN A TOY SQUEAKED"

11 × 6 = 66 (T) · 7 × 5 = 35 (Y) · 7 × 4 = 28 (S) · 11 × 9 = 99 (N) · 2 × 8 = 16 (F) · 3 × 11 = 33 (A) · 6 × 8 = 48 (K) · 3 × 2 = 6 (E) · 3 × 4 = 12 (Q) · 5 × 8 = 40 (U) · 12 × 12 = 144 (R) · 9 × 7 = 63 (W) · 5 × 1 = 5 (D) · 10 × 8 = 80 (H) · 1 × 11 = 11 (O)

### Clue 4 (Skip counting): "A GREEN HAT THREAD SNAGGED ON A BRANCH"

Skip-count by 2s. Fill the blank: 2, 4, ___, 8, 10 = 6 (A) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, ___, 80, 90 = 70 (E) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, ___, 24, 26 = 22 (H) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, ___, 90, 100 = 80 (D) · Skip-count by 10s. Fill the blank: 10, 20, 30, ___, 50, 60 = 40 (B) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, ___, 60, 65 = 55 (R) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, ___, 42, 45 = 39 (G) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, ___, 36, 39 = 33 (S) · Skip-count by 2s. Fill the blank: 2, 4, 6, ___, 10, 12 = 8 (T) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, ___, 24, 27 = 21 (N) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, ___, 18, 20 = 16 (O) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, ___, 22, 24 = 20 (C)

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

48 ÷ 6 = 8 · 77 ÷ 7 = 11 · 44 ÷ 11 = 4 · 20 ÷ 2 = 10 · 24 ÷ 4 = 6 · 108 ÷ 12 = 9 · 72 ÷ 6 = 12 · 5 ÷ 5 = 1 · 9 ÷ 3 = 3 · 6 ÷ 3 = 2 · 14 ÷ 2 = 7