The Case of the Missing Golden Compass

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

Detective: _____ **Date:** _____

Someone sneaked into the Port Horizon Museum and took the Golden Compass. The clues left behind will help you track down the rogue explorer.

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.

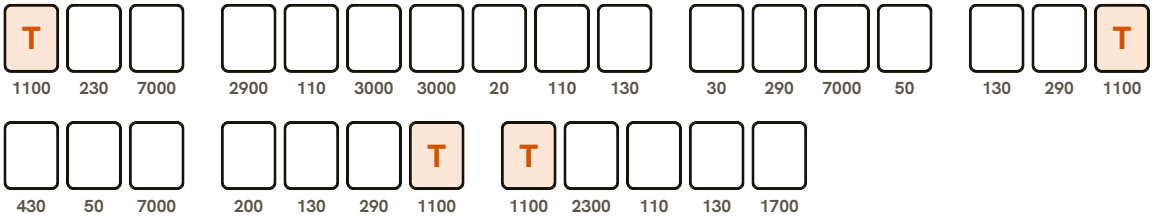
NAME	PRIMARY GADGET	SECRET SKILL	TAPPING FOOT	BANDANA COLOR	FEAR FACTOR
Wren Wilder	Pocket Radar	Lock Picking	Left Foot Tapper	Green Bandana	Afraid of Heights
Agent Ivy	Sonar Watch	Code Breaking	Left Foot Tapper	Red Bandana	Afraid of Heights
Tracker Sam	Sonar Watch	Knot Tying	Right Foot Tapper	Red Bandana	Afraid of Bats
Cadet Finn	Glider Wings	Code Breaking	Left Foot Tapper	Red Bandana	Afraid of Snakes
Otis Sterling	Sonar Watch	Track Finding	Left Foot Tapper	Blue Bandana	Afraid of Bats
Guide Max	Mag Lens	Map Reading	Left Foot Tapper	Green Bandana	Afraid of Bats
Captain Arlo	Pocket Radar	Knot Tying	Right Foot Tapper	Red Bandana	Afraid of Snakes
Dash Parker	Sonar Watch	Lock Picking	Left Foot Tapper	Red Bandana	Afraid of Heights
Sienna Frost	Grappling Hook	Code Breaking	Right Foot Tapper	Blue Bandana	Afraid of Snakes
Ranger Leo	Glider Wings	Track Finding	Right Foot Tapper	Green Bandana	Afraid of Bats
Piper Reed	Mag Lens	Code Breaking	Left Foot Tapper	Green Bandana	Afraid of Bats
Explorer Nora	Mag Lens	Code Breaking	Left Foot Tapper	Blue Bandana	Afraid of Heights
Rover Jasper	Mag Lens	Knot Tying	Right Foot Tapper	Green Bandana	Afraid of Snakes
Hunter Ruby	Glider Wings	Code Breaking	Left Foot Tapper	Blue Bandana	Afraid of Bats
Skye Bennett	Glider Wings	Track Finding	Left Foot Tapper	Green Bandana	Afraid of Bats
Felix Cruz	Pocket Radar	Code Breaking	Left Foot Tapper	Blue Bandana	Afraid of Snakes
Hazel Rivers	Glider Wings	Knot Tying	Left Foot Tapper	Green Bandana	Afraid of Bats
Cody Vance	Mag Lens	Track Finding	Left Foot Tapper	Green Bandana	Afraid of Heights
Milo Stone	Sonar Watch	Lock Picking	Left Foot Tapper	Green Bandana	Afraid of Bats
Sailor Eli	Grappling Hook	Lock Picking	Right Foot Tapper	Red Bandana	Afraid of Snakes
Pilot Kai	Glider Wings	Code Breaking	Right Foot Tapper	Green Bandana	Afraid of Bats

make your own at mathcrackers.com

CLUE 1 Rounding

> The museum radar screen rounded the intruder's altitude to the nearest hundred.

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



Round 1,099 to the nearest hundred ☐ → T

Round 2,901 to the nearest hundred ☐ → V

Round 179 to the nearest hundred ☐ → K

Round 3,287 to the nearest thousand ☐ → L

Round 1,745 to the nearest hundred ☐ → G

Round 289 to the nearest ten ☐ → O

Round 234 to the nearest ten ☐ → H

Round 53 to the nearest ten ☐ → S

Round 7,277 to the nearest thousand ☐ → E

Round 16 to the nearest ten ☐ → A

Round 426 to the nearest ten ☐ → U

Round 109 to the nearest ten ☐ → I

Round 132 to the nearest ten ☐ → N

Round 31 to the nearest ten ☐ → D

Round 2,307 to the nearest hundred ☐ → Y

Scratch space:

CLUE 2 Addition

You tally up all the footprints found near the lobby floor.

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



3379 + 5275 = ☐ → W

5564 + 3107 = ☐ → I

2970 + 3486 = ☐ → A

4077 + 2312 = ☐ → G

2166 + 3792 = ☐ → N

1931 + 2002 = ☐ → E

1674 + 2300 = ☐ → P

914 + 1500 = ☐ → S

1344 + 2151 = ☐ → L

3397 + 1623 = ☐ → T

2526 + 4617 = ☐ → O

2031 + 2889 = ☐ → D

2617 + 1693 = ☐ → F

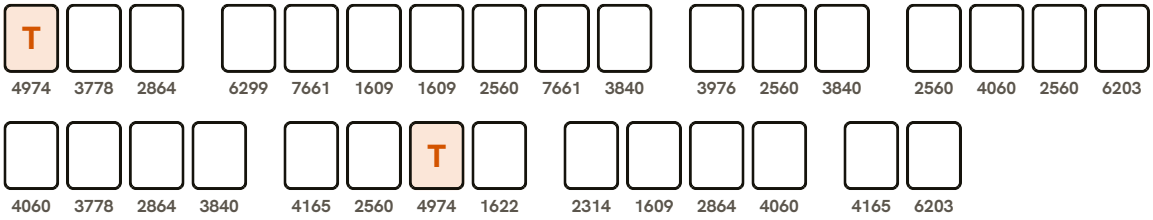
2044 + 1143 = ☐ → H

Scratch space:

CLUE 3 Subtraction

You calculate how many gold coins are left after the theft.

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



8238 - 3264 = ☐ → T

5614 - 4005 = ☐ → L

5893 - 2053 = ☐ → N

6636 - 3772 = ☐ → E

5931 - 4309 = ☐ → S

8172 - 4196 = ☐ → R

5720 - 1555 = ☐ → B

6829 - 4269 = ☐ → A

8363 - 2160 = ☐ → Y

4376 - 2062 = ☐ → F

10284 - 3985 = ☐ → V

9931 - 2270 = ☐ → I

7906 - 4128 = ☐ → H

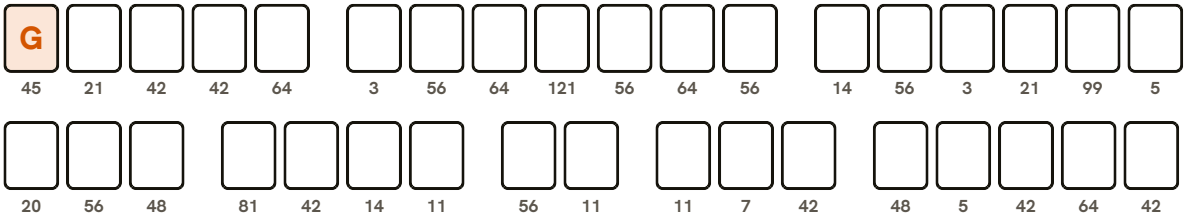
6545 - 2485 = ☐ → W

Scratch space:

CLUE 4 Multiplication facts (1-12)

> You check the rows of supply crates stored in the basement.

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



9 × 5 = ☐ → **G**

11 × 11 = ☐ → **D**

7 × 1 = ☐ → **H**

9 × 9 = ☐ → **L**

3 × 1 = ☐ → **B**

7 × 3 = ☐ → **R**

9 × 11 = ☐ → **I**

12 × 4 = ☐ → **S**

11 × 1 = ☐ → **T**

5 × 1 = ☐ → **C**

2 × 7 = ☐ → **F**

7 × 6 = ☐ → **E**

8 × 8 = ☐ → **N**

8 × 7 = ☐ → **A**

5 × 4 = ☐ → **W**

Scratch space:

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

> You share the remaining clue cards equally among the team.

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:

7 ÷ 7 = ☐	8 ÷ 2 = ☐	55 ÷ 11 = ☐	36 ÷ 12 = ☐	84 ÷ 7 = ☐
42 ÷ 6 = ☐	88 ÷ 11 = ☐	60 ÷ 6 = ☐	2 ÷ 1 = ☐	33 ÷ 3 = ☐
30 ÷ 5 = ☐				

Step 2 - cross out the sentence with each answer:

1. The villain vaulted the counter, then followed the footprint.
2. The villain zapped the display case, then followed the footprint.
3. The villain vaulted the counter, then decoded the cipher.
4. The villain disarmed the alarm, then picked the lock.
5. The villain scanned the lock, then decoded the cipher.
6. The villain scouted the hallway, then decoded the cipher.
7. The villain disarmed the alarm, then tied up the gate.
8. The villain disarmed the alarm, then followed the footprint.
9. The villain scanned the lock, then read the secret map.
10. The villain zapped the display case, then picked the lock.
11. The villain vaulted the counter, then tied up the gate.
12. The villain scouted the hallway, then picked the lock.

TEACHER / PARENT

Answer Key

The Case of the Missing Golden Compass

Culprit: Guide Max

Mag Lens · Map Reading · Left Foot Tapper · Green Bandana · Afraid of Bats

Trail: Start 21 → Clue 1 17 → Clue 2 13 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Rounding): "THE VILLAIN DOES NOT USE KNOT TYING"

Round 1,099 to the nearest hundred = 1100 (T) · Round 2,901 to the nearest hundred = 2900 (V) · Round 179 to the nearest hundred = 200 (K) · Round 3,287 to the nearest thousand = 3000 (L) · Round 1,745 to the nearest hundred = 1700 (G) · Round 289 to the nearest ten = 290 (O) · Round 234 to the nearest ten = 230 (H) · Round 53 to the nearest ten = 50 (S) · Round 7,277 to the nearest thousand = 7000 (E) · Round 16 to the nearest ten = 20 (A) · Round 426 to the nearest ten = 430 (U) · Round 109 to the nearest ten = 110 (I) · Round 132 to the nearest ten = 130 (N) · Round 31 to the nearest ten = 30 (D) · Round 2,307 to the nearest hundred = 2300 (Y)

Clue 2 (Addition): "WITNESS SAW FOOT TAPPING ON THE LEFT SIDE"

3379 + 5275 = 8654 (W) · 5564 + 3107 = 8671 (I) · 2970 + 3486 = 6456 (A) · 4077 + 2312 = 6389 (G) · 2166 + 3792 = 5958 (N) · 1931 + 2002 = 3933 (E) · 1674 + 2300 = 3974 (P) · 914 + 1500 = 2414 (S) · 1344 + 2151 = 3495 (L) · 3397 + 1623 = 5020 (T) · 2526 + 4617 = 7143 (O) · 2031 + 2889 = 4920 (D) · 2617 + 1693 = 4310 (F) · 2044 + 1143 = 3187 (H)

Clue 3 (Subtraction): "THE VILLAIN RAN AWAY WHEN BATS FLEW BY"

8238 - 3264 = 4974 (T) · 5614 - 4005 = 1609 (L) · 5893 - 2053 = 3840 (N) · 6636 - 3772 = 2864 (E) · 5931 - 4309 = 1622 (S) · 8172 - 4196 = 3976 (R) · 5720 - 1555 = 4165 (B) · 6829 - 4269 = 2560 (A) · 8363 - 2160 = 6203 (Y) · 4376 - 2062 = 2314 (F) · 10284 - 3985 = 6299 (V) · 9931 - 2270 = 7661 (I) · 7906 - 4128 = 3778 (H) · 6545 - 2485 = 4060 (W)

Clue 4 (Multiplication facts (1-12)): "GREEN BANDANA FABRIC WAS LEFT AT THE SCENE"

9 × 5 = 45 (G) · 11 × 11 = 121 (D) · 7 × 1 = 7 (H) · 9 × 9 = 81 (L) · 3 × 1 = 3 (B) · 7 × 3 = 21 (R) · 9 × 11 = 99 (I) · 12 × 4 = 48 (S) · 11 × 1 = 11 (T) · 5 × 1 = 5 (C) · 2 × 7 = 14 (F) · 7 × 6 = 42 (E) · 8 × 8 = 64 (N) · 8 × 7 = 56 (A) · 5 × 4 = 20 (W)

Clue 5 (Division facts (1-12)): surviving statement is box 9 → Guide Max

7 ÷ 7 = 1 · 8 ÷ 2 = 4 · 55 ÷ 11 = 5 · 36 ÷ 12 = 3 · 84 ÷ 7 = 12 · 42 ÷ 6 = 7 · 88 ÷ 11 = 8 · 60 ÷ 6 = 10 · 2 ÷ 1 = 2 · 33 ÷ 3 = 11 · 30 ÷ 5 = 6