



The Case of the Golden Compass

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

Detective: _____ Date: _____

The Golden Compass has been stolen from the governor's grand cabin! Only a clever cabin boy or girl can track the clues, solve the ship logs, and find the sneaky pirate who took it.

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 pirate is _____

Possible suspects

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

NAME	PRIMARY SKILL	SECONDARY SKILL	WRITING HAND	HAIR STYLE	MAIN FEAR
Cutlass Carla	cannon fire	gold digging	writes left handed	curly red hair	hates loud music
Sea Dog Sally	sword play	plank walking	writes right handed	curly red hair	hates loud music
Sharkbait Sam	map reading	gold digging	writes right handed	braided black beard	hates loud music
Calico Jack	map reading	gold digging	writes left handed	braided black beard	allergic to citrus
Grace O Malley	map reading	parrot training	writes left handed	messy gray hair	hates loud music
William Kidd	cannon fire	sail patching	writes left handed	messy gray hair	hates loud music
Quartermaster Quincy	cannon fire	gold digging	writes left handed	messy gray hair	hates loud music
Mary Read	anchor tossing	sail patching	writes left handed	braided black beard	allergic to citrus
Blackbeard	cannon fire	parrot training	writes right handed	braided black beard	allergic to citrus
Long John Silver	cannon fire	plank walking	writes left handed	messy gray hair	scared of sharks
Francis Drake	anchor tossing	sail patching	writes left handed	braided black beard	hates loud music
Anne Bonny	map reading	gold digging	writes left handed	messy gray hair	hates loud music
Doubloon Dan	sword play	sail patching	writes right handed	curly red hair	allergic to citrus
Captain Hook	anchor tossing	plank walking	writes left handed	curly red hair	allergic to citrus
Cannonball Kate	map reading	sail patching	writes left handed	curly red hair	allergic to citrus
Salty Sarah	map reading	parrot training	writes right handed	messy gray hair	hates loud music
Crow Nest Ned	sword play	plank walking	writes left handed	braided black beard	scared of sharks
Scurvy Steve	anchor tossing	parrot training	writes left handed	messy gray hair	hates loud music
Compass Cora	cannon fire	sail patching	writes right handed	braided black beard	scared of sharks
Rigging Rusty	map reading	gold digging	writes left handed	braided black beard	hates loud music
Henry Morgan	anchor tossing	gold digging	writes left handed	messy gray hair	allergic to citrus

CLUE 1 Place value

We found a torn page from the pirate's ledger. The numbers are written in hundreds, tens, and ones columns. Figure out the total value of each line to reveal the first secret!

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

T			T											T
90	9000	300	90	9000	4000	300	30	6000	5000	300	600	200	5000	90

		T							
60	2000	90	500	9000	600	2000	4000	400	600

What is the value of the 9 in 3,393? → **T**

What is the value of the 2 in 72,703? → **A**

What is the value of the 6 in 6,970? → **D**

What is the value of the 6 in 5,679? → **S**

What is the value of the 5 in 35,367? → **O**

What is the value of the 6 in 9,269? → **P**

What is the value of the 3 in 307? → **E**

What is the value of the 4 in 470? → **L**

What is the value of the 9 in 49,618? → **H**

What is the value of the 4 in 4,683? → **I**

What is the value of the 2 in 8,288? → **N**

What is the value of the 5 in 9,582? → **C**

What is the value of the 3 in 1,537? → **F**

Scratch space:

CLUE 2 Addition

The deckhands are counting the heavy iron cannonballs left on the deck. Add all the piles together to find the true total and unlock this next lead.

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

L																			
202	561	370	973	668	544	808	988	561	988	865	808	578	908	573	342	988	289	561	908

423	808	973	668	561	988	561	501	578	

$139 + 63 = \square \rightarrow \boxed{\text{L}}$

$158 + 184 = \square \rightarrow \boxed{\text{U}}$

$298 + 275 = \square \rightarrow \boxed{\text{M}}$

$255 + 413 = \square \rightarrow \boxed{\text{H}}$

$327 + 234 = \square \rightarrow \boxed{\text{E}}$

$255 + 168 = \square \rightarrow \boxed{\text{O}}$

$318 + 490 = \square \rightarrow \boxed{\text{N}}$

$438 + 427 = \square \rightarrow \boxed{\text{I}}$

$626 + 282 = \square \rightarrow \boxed{\text{S}}$

$272 + 229 = \square \rightarrow \boxed{\text{C}}$

$138 + 232 = \square \rightarrow \boxed{\text{F}}$

$221 + 357 = \square \rightarrow \boxed{\text{K}}$

$523 + 450 = \square \rightarrow \boxed{\text{T}}$

$200 + 89 = \square \rightarrow \boxed{\text{G}}$

$292 + 252 = \square \rightarrow \boxed{\text{A}}$

$591 + 397 = \square \rightarrow \boxed{\text{D}}$

Scratch space:

CLUE 3 Subtraction

The ship's cook says some sea biscuits are missing from the barrel. Take away the eaten biscuits from the starting batch to see what remains!

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

T												T																
251	479	692	821	300	732	410	692	726	692	712	251	479	692	776	726	692	374	726	427									

	T	T						
374	251	251	479	692	181	776	792	

$$298 - 47 = \boxed{} \rightarrow \boxed{\text{T}}$$

$$1028 - 296 = \boxed{} \rightarrow \boxed{\text{O}}$$

$$847 - 121 = \boxed{} \rightarrow \boxed{\text{R}}$$

$$717 - 5 = \boxed{} \rightarrow \boxed{\text{D}}$$

$$834 - 13 = \boxed{} \rightarrow \boxed{\text{Y}}$$

$$774 - 400 = \boxed{} \rightarrow \boxed{\text{A}}$$

$$400 - 219 = \boxed{} \rightarrow \boxed{\text{J}}$$

$$433 - 133 = \boxed{} \rightarrow \boxed{\text{C}}$$

$$1088 - 312 = \boxed{} \rightarrow \boxed{\text{I}}$$

$$977 - 285 = \boxed{} \rightarrow \boxed{\text{E}}$$

$$641 - 231 = \boxed{} \rightarrow \boxed{\text{V}}$$

$$755 - 276 = \boxed{} \rightarrow \boxed{\text{H}}$$

$$819 - 27 = \boxed{} \rightarrow \boxed{\text{G}}$$

$$463 - 36 = \boxed{} \rightarrow \boxed{\text{S}}$$

Scratch space:

CLUE 4 Rounding

The captain's brass spyglass dial only works in rounded numbers. Round the distance of the spotted sail to the nearest ten to focus the lens and read the message.

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

G																
500	90	50	800	600	50	30	90	3000	50	2000	400	8000	9000	40	5000	900
						G	G									
40	600	8000	90	30	500	500	30	900	500							

Round 484 to the nearest hundred → **G**

Round 7,515 to the nearest thousand → **E**

Round 3,333 to the nearest thousand → **W**

Round 8,636 to the nearest thousand → **F**

Round 399 to the nearest hundred → **L**

Round 40 to the nearest ten → **T**

Round 2,215 to the nearest thousand → **S**

Round 4,948 to the nearest thousand → **O**

Round 26 to the nearest ten → **I**

Round 46 to the nearest ten → **A**

Round 875 to the nearest hundred → **N**

Round 92 to the nearest ten → **R**

Round 833 to the nearest hundred → **Y**

Round 630 to the nearest hundred → **H**

Scratch space:

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

We have a crate that needs to hold a specific number of gold doubloons, but it is not full. Calculate how many more doubloons we must add to reach the total.

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:

$10 + \underline{\quad} = 12$

$8 + \underline{\quad} = 18$

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

$1 + \underline{\quad} = 2$

$7 + \underline{\quad} = 14$

$2 + \underline{\quad} = 13$

$2 + \underline{\quad} = 7$

$10 + \underline{\quad} = 22$

$5 + \underline{\quad} = 11$

$5 + \underline{\quad} = 14$

$5 + \underline{\quad} = 8$

Step 2 - cross out the sentence with each answer:

1. The villain steers the massive ship, then sends a parrot helper.
2. The villain steals the secret map, then digs up a buried chest.
3. The villain draws a shiny sword, then digs up a buried chest.
4. The villain steals the secret map, then sends a parrot helper.
5. The villain fires the loud cannon, then forces a captive to walk the plank.
6. The villain steers the massive ship, then swings away on a rope.
7. The villain fires the loud cannon, then sends a parrot helper.
8. The villain fires the loud cannon, then digs up a buried chest.
9. The villain draws a shiny sword, then sews a hole in the sail.
10. The villain drops the heavy anchor, then sends a parrot helper.
11. The villain steers the massive ship, then forces a captive to walk the plank.
12. The villain draws a shiny sword, then swings away on a rope.

Answer Key

The Case of the Golden Compass

Culprit: Quartermaster Quincy

cannon fire · gold digging · writes left handed · messy gray hair · hates loud music

Trail: Start 21 → Clue 1 15 → Clue 2 11 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Place value): "THE THIEF DOES NOT PATCH SAILS"

What is the value of the 9 in 3,393? = 90 (T) · What is the value of the 2 in 72,703? = 2000 (A) · What is the value of the 6 in 6,970? = 6000 (D) · What is the value of the 6 in 5,679? = 600 (S) · What is the value of the 5 in 35,367? = 5000 (O) · What is the value of the 6 in 9,269? = 60 (P) · What is the value of the 3 in 307? = 300 (E) · What is the value of the 4 in 470? = 400 (L) · What is the value of the 9 in 49,618? = 9000 (H) · What is the value of the 4 in 4,683? = 4000 (I) · What is the value of the 2 in 8,288? = 200 (N) · What is the value of the 5 in 9,582? = 500 (C) · What is the value of the 3 in 1,537? = 30 (F)

Clue 2 (Addition): "LEFT HANDED INK SMUDGES ON THE DECK"

$139 + 63 = 202$ (L) · $158 + 184 = 342$ (U) · $298 + 275 = 573$ (M) · $255 + 413 = 668$ (H) · $327 + 234 = 561$ (E) · $255 + 168 = 423$ (O) · $318 + 490 = 808$ (N) · $438 + 427 = 865$ (I) · $626 + 282 = 908$ (S) · $272 + 229 = 501$ (C) · $138 + 232 = 370$ (F) · $221 + 357 = 578$ (K) · $523 + 450 = 973$ (T) · $200 + 89 = 289$ (G) · $292 + 252 = 544$ (A) · $591 + 397 = 988$ (D)

Clue 3 (Subtraction): "THEY COVERED THEIR EARS AT THE JIG"

$298 - 47 = 251$ (T) · $1028 - 296 = 732$ (O) · $847 - 121 = 726$ (R) · $717 - 5 = 712$ (D) · $834 - 13 = 821$ (Y) · $774 - 400 = 374$ (A) · $400 - 219 = 181$ (J) · $433 - 133 = 300$ (C) · $1088 - 312 = 776$ (I) · $977 - 285 = 692$ (E) · $641 - 231 = 410$ (V) · $755 - 276 = 479$ (H) · $819 - 27 = 792$ (G) · $463 - 36 = 427$ (S)

Clue 4 (Rounding): "GRAY HAIR WAS LEFT ON THE RIGGING"

Round 484 to the nearest hundred = 500 (G) · Round 7,515 to the nearest thousand = 8000 (E) · Round 3,333 to the nearest thousand = 3000 (W) · Round 8,636 to the nearest thousand = 9000 (F) · Round 399 to the nearest hundred = 400 (L) · Round 40 to the nearest ten = 40 (T) · Round 2,215 to the nearest thousand = 2000 (S) · Round 4,948 to the nearest thousand = 5000 (O) · Round 26 to the nearest ten = 30 (I) · Round 46 to the nearest ten = 50 (A) · Round 875 to the nearest hundred = 900 (N) · Round 92 to the nearest ten = 90 (R) · Round 833 to the nearest hundred = 800 (Y) · Round 630 to the nearest hundred = 600 (H)

Clue 5 (Missing addends): surviving statement is box 8 → Quartermaster Quincy

$10 + \underline{\quad} = 12 = 2$ · $8 + \underline{\quad} = 18 = 10$ · $8 + \underline{\quad} = 12 = 4$ · $1 + \underline{\quad} = 2 = 1$ · $7 + \underline{\quad} = 14 = 7$ · $2 + \underline{\quad} = 13 = 11$ · $2 + \underline{\quad} = 7 = 5$ · $10 + \underline{\quad} = 22 = 12$ · $5 + \underline{\quad} = 11 = 6$ · $5 + \underline{\quad} = 14 = 9$ · $5 + \underline{\quad} = 8 = 3$