



The Golden Compass Mystery

Grade 3 math · Multiplication, Addition, Subtraction, Skip counting, Missing addends · Reading level grades 1-2

Detective: _____ Date: _____

A sneaky pirate took the golden compass from the dock master. We need to find the thief before they sail away!

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 thief pirate is _____

Possible suspects

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

NAME	PIRATE SKILL	PIRATE GEAR	SAILING HAND	PIRATE HAIR	PIRATE WEAKNESS
Bootleg Billy	map reading	parrot friend	uses left hand	yellow ponytail hair	loud bell
First Mate Fred	sword waving	wooden peg	uses left hand	yellow ponytail hair	sour lime
Plank Walk Pete	sail steering	shiny eye patch	uses right hand	red curly hair	tickle feathers
Scurvy Steve	chest locking	shiny eye patch	uses left hand	black braided hair	sour lime
Salty Sam	sail steering	shiny eye patch	uses left hand	black braided hair	sour lime
Stormy Stan	sail steering	parrot friend	uses left hand	red curly hair	sour lime
Cannonball Cole	chest locking	shiny eye patch	uses left hand	yellow ponytail hair	tickle feathers
Doubloon Dan	rope climbing	metal hook	uses right hand	yellow ponytail hair	sour lime
Jolly Jenny	sword waving	shiny eye patch	uses left hand	yellow ponytail hair	tickle feathers
Blackbeard Ben	rope climbing	shiny eye patch	uses left hand	red curly hair	loud bell
Treasure Tina	sail steering	parrot friend	uses right hand	black braided hair	loud bell
Tide Turn Tobey	map reading	parrot friend	uses right hand	yellow ponytail hair	sour lime
Cutlass Kate	chest locking	shiny eye patch	uses left hand	yellow ponytail hair	sour lime
Anchor Andy	rope climbing	shiny eye patch	uses left hand	yellow ponytail hair	sour lime
Sailor Sarah	map reading	gold tooth	uses right hand	black braided hair	tickle feathers
Captain Carla	rope climbing	gold tooth	uses left hand	yellow ponytail hair	sour lime
Goldie Grace	sword waving	metal hook	uses right hand	yellow ponytail hair	sour lime
Breezy Bella	map reading	gold tooth	uses left hand	red curly hair	tickle feathers
Captain Barnaby	sail steering	wooden peg	uses left hand	yellow ponytail hair	sour lime
Pegleg Polly	sail steering	shiny eye patch	uses left hand	red curly hair	loud bell
Red Beard Roger	sword waving	parrot friend	uses left hand	yellow ponytail hair	loud bell

CLUE 1
Multiplication facts (1-12)

We find some gold boxes. They are in neat rows on the ship. Let us multiply the rows to count the gold and get a clue.

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

T			T											T				
6	40	4	6	40	44	4	36	18	20	4	70	110	20	6	40	16	9	4
16	7	20	10	18	T			T										
					6	20	20	6	40									

$1 \times 6 = \square \rightarrow \boxed{\text{T}}$

$4 \times 11 = \square \rightarrow \boxed{\text{I}}$

$8 \times 5 = \square \rightarrow \boxed{\text{H}}$

$4 \times 1 = \square \rightarrow \boxed{\text{E}}$

$7 \times 10 = \square \rightarrow \boxed{\text{S}}$

$2 \times 10 = \square \rightarrow \boxed{\text{O}}$

$11 \times 10 = \square \rightarrow \boxed{\text{N}}$

$3 \times 6 = \square \rightarrow \boxed{\text{D}}$

$4 \times 9 = \square \rightarrow \boxed{\text{F}}$

$3 \times 3 = \square \rightarrow \boxed{\text{V}}$

$10 \times 1 = \square \rightarrow \boxed{\text{L}}$

$1 \times 7 = \square \rightarrow \boxed{\text{G}}$

$8 \times 2 = \square \rightarrow \boxed{\text{A}}$

Scratch space:

CLUE 2 Addition

The dock master counts the ship biscuits. We add the old ones and the new ones. The total gives us a hint about the thief.

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

T								T								
987	648	260	485	648	260	336	804	987	648	260	392	346	591	407	280	

T								T				
987	648	260	407	205	336	260	562	987	648	346	280	804

298 + 689 = → T	120 + 272 = → M	204 + 132 = → L
408 + 183 = → P	116 + 144 = → E	551 + 253 = → D
281 + 367 = → H	249 + 236 = → Y	114 + 232 = → A
139 + 268 = → I	68 + 137 = → R	123 + 157 = → N
313 + 249 = → F		

Scratch space:

Subtraction

A hungry seagull flew by. It took some fish from our basket. Subtract the stolen fish to find how many are left for a clue.

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

$$517 - 210 = \boxed{} \rightarrow \boxed{\text{T}}$$

$$291 - 127 = \boxed{} \rightarrow \boxed{\text{E}}$$

$$889 - 264 = \boxed{} \rightarrow \boxed{\text{A}}$$

$477 - 48 = \boxed{} \rightarrow \boxed{\text{F}}$

$895 - 145 = \boxed{} \rightarrow \boxed{\text{L}}$

$875 - 383 = \boxed{} \rightarrow \boxed{\text{N}}$

$$750 - 270 = \boxed{} \rightarrow \boxed{\text{R}}$$

$1217 - 347 = \boxed{} \rightarrow \boxed{\text{H}}$

$$730 - 347 = \boxed{} \rightarrow \boxed{\text{U}}$$

$$674 - 271 = \boxed{} \rightarrow \boxed{\text{D}}$$

$$878 - 341 = \boxed{} \rightarrow \boxed{\text{O}}$$

$$855 - 109 = \boxed{} \rightarrow \boxed{}$$

$$419 - 58 = \boxed{} \rightarrow \boxed{\text{M}}$$

$$402 - 251 = \boxed{} \rightarrow \boxed{\text{S}}$$

Scratch space:

CLUE 4 Skip counting

The crew hops on the deck planks. We skip count by fives as they hop. Each big jump gets us closer to a clue about the thief.

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

A																			
22	110	25	45	45	55	12	6	55	130	110	90	22	8	45	12	22	50		
				A															
50	25	25	130	22	90	50	25	22											

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

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, __, 100, 110 → **T**

Skip-count by 2s. Fill the blank: 2, 4, 6, __, 10, 12 → **I**

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, __, 60, 70 → **S**

Skip-count by 2s. Fill the blank: 2, 4, __, 8, 10 → **P**

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, __, 30, 35 → **E**

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, __, 120, 130 → **Y**

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

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, __, 140, 150 → **N**

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, __, 50, 55 → **L**

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, __, 14, 16 → **W**

Scratch space:

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

We need ten barrels of water. We only have six. Let us find how many more we need to get the 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:

$4 + \underline{\quad} = 5$

$6 + \underline{\quad} = 10$

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

$3 + \underline{\quad} = 12$

$3 + \underline{\quad} = 14$

$9 + \underline{\quad} = 16$

$6 + \underline{\quad} = 16$

$4 + \underline{\quad} = 10$

$8 + \underline{\quad} = 13$

$10 + \underline{\quad} = 18$

$8 + \underline{\quad} = 20$

Step 2 - cross out the sentence with each answer:

1. The villain locked the wood chest, then fixed their shiny eye patch.
2. The villain steered the big wheel, then tapped their wooden peg.
3. The villain waved the fake sword, then tapped their wooden peg.
4. The villain climbed up the rope, then fixed their shiny eye patch.
5. The villain waved the fake sword, then fixed their shiny eye patch.
6. The villain waved the fake sword, then swung their metal hook.
7. The villain read the old map, then tapped their wooden peg.
8. The villain waved the fake sword, then showed off their gold tooth.
9. The villain steered the big wheel, then showed off their gold tooth.
10. The villain locked the wood chest, then tapped their wooden peg.
11. The villain climbed up the rope, then tapped their wooden peg.
12. The villain climbed up the rope, then showed off their gold tooth.

Answer Key

The Golden Compass Mystery

Culprit: Captain Barnaby

sail steering · wooden peg · uses left hand · yellow ponytail hair · sour lime

Trail: Start 21 → Clue 1 18 → Clue 2 13 → Clue 3 7 → Clue 4 4 → Clue 5 1

Clue 1 (Multiplication facts (1-12)): "THE THIEF DOES NOT HAVE A GOLD TOOTH"

$1 \times 6 = 6$ (T) · $4 \times 11 = 44$ (I) · $8 \times 5 = 40$ (H) · $4 \times 1 = 4$ (E) · $7 \times 10 = 70$ (S) · $2 \times 10 = 20$ (O) · $11 \times 10 = 110$ (N) · $3 \times 6 = 18$ (D) · $4 \times 9 = 36$ (F) · $3 \times 3 = 9$ (V) · $10 \times 1 = 10$ (L) · $1 \times 7 = 7$ (G) · $8 \times 2 = 16$ (A)

Clue 2 (Addition): "THEY HELD THE MAP IN THEIR LEFT HAND"

$298 + 689 = 987$ (T) · $120 + 272 = 392$ (M) · $204 + 132 = 336$ (L) · $408 + 183 = 591$ (P) · $116 + 144 = 260$ (E) · $551 + 253 = 804$ (D) · $281 + 367 = 648$ (H) · $249 + 236 = 485$ (Y) · $114 + 232 = 346$ (A) · $139 + 268 = 407$ (I) · $68 + 137 = 205$ (R) · $123 + 157 = 280$ (N) · $313 + 249 = 562$ (F)

Clue 3 (Subtraction): "THE SOUR LIME MADE THE THIEF RUN"

$517 - 210 = 307$ (T) · $291 - 127 = 164$ (E) · $889 - 264 = 625$ (A) · $477 - 48 = 429$ (F) · $895 - 145 = 750$ (L) · $875 - 383 = 492$ (N) · $750 - 270 = 480$ (R) · $1217 - 347 = 870$ (H) · $730 - 347 = 383$ (U) · $674 - 271 = 403$ (D) · $878 - 341 = 537$ (O) · $855 - 109 = 746$ (I) · $419 - 58 = 361$ (M) · $402 - 251 = 151$ (S)

Clue 4 (Skip counting): "A YELLOW PONYTAIL WAS SEEN AT SEA"

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, __, 24, 26 = 22 (A) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, __, 100, 110 = 90 (T) · Skip-count by 2s. Fill the blank: 2, 4, 6, __, 10, 12 = 8 (I) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, __, 60, 70 = 50 (S) · Skip-count by 2s. Fill the blank: 2, 4, __, 8, 10 = 6 (P) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, __, 30, 35 = 25 (E) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, __, 120, 130 = 110 (Y) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, __, 60, 65 = 55 (O) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, __, 140, 150 = 130 (N) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, __, 50, 55 = 45 (L) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, __, 14, 16 = 12 (W)

Clue 5 (Missing addends): surviving statement is box 2 → Captain Barnaby

$4 + \underline{\quad} = 5 = 1$ · $6 + \underline{\quad} = 10 = 4$ · $5 + \underline{\quad} = 8 = 3$ · $3 + \underline{\quad} = 12 = 9$ · $3 + \underline{\quad} = 14 = 11$ · $9 + \underline{\quad} = 16 = 7$ · $6 + \underline{\quad} = 16 = 10$ · $4 + \underline{\quad} = 10 = 6$ · $8 + \underline{\quad} = 13 = 5$ · $10 + \underline{\quad} = 18 = 8$ · $8 + \underline{\quad} = 20 = 12$