



The Mystery of the Missing Compass Rose

Grade 5 math · Rounding, Skip counting, Word problems, Bar models, Missing addends · Reading level grades 5-6

Detective: _____ Date: _____

Someone snuck into the Grand Navigator's cabin at Scurvy Dog Cove and stole the enchanted Golden Compass Rose! Without it, the fleet cannot navigate through the treacherous Mist Rocks. Solve the ciphers to catch the rogue pirate 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 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 WEAPON	PIRATE GEAR	DOMINANT HAND	BANDANA COLOR	FEARED SOUND
Sea Turtle Sam	Throwing Daggers	Smoke Bomb	Left Handed	Emerald Bandana	Loud Cannons
Marauder Mia	Heavy Boarding Axe	Grappling Hook	Left Handed	Emerald Bandana	Parrot Squawks
Stormy Sebastian	Dual Cutlasses	Spyglass Scope	Left Handed	Emerald Bandana	Parrot Squawks
Redbeard Rex	Hook Hand	Grappling Hook	Right Handed	Obsidian Bandana	Loud Cannons
Blackbeard Barnaby	Dual Cutlasses	Spyglass Scope	Right Handed	Emerald Bandana	Parrot Squawks
Driftwood Dirk	Hook Hand	Signal Flare	Left Handed	Emerald Bandana	Loud Cannons
Reef Runner Ray	Hook Hand	Rope Ladder	Left Handed	Crimson Bandana	Parrot Squawks
Barnacle Bob	Flintlock Pistol	Rope Ladder	Left Handed	Obsidian Bandana	Parrot Squawks
Bilge Rat Ben	Heavy Boarding Axe	Signal Flare	Left Handed	Emerald Bandana	Loud Cannons
Quartermaster Queen	Hook Hand	Spyglass Scope	Left Handed	Emerald Bandana	Parrot Squawks
Pegleg Pete	Heavy Boarding Axe	Spyglass Scope	Left Handed	Emerald Bandana	Bright Flares
Wave Rider Wendy	Throwing Daggers	Grappling Hook	Left Handed	Emerald Bandana	Bright Flares
Navigator Nate	Flintlock Pistol	Smoke Bomb	Left Handed	Emerald Bandana	Parrot Squawks
Tides Turner Tess	Flintlock Pistol	Spyglass Scope	Left Handed	Obsidian Bandana	Loud Cannons
Crow Nest Chloe	Dual Cutlasses	Grappling Hook	Left Handed	Emerald Bandana	Parrot Squawks
Iron Hook Isla	Hook Hand	Smoke Bomb	Right Handed	Obsidian Bandana	Loud Cannons
Salty Silas	Hook Hand	Smoke Bomb	Right Handed	Emerald Bandana	Bright Flares
Anchor Anne	Flintlock Pistol	Rope Ladder	Left Handed	Obsidian Bandana	Loud Cannons
Scupper Sean	Heavy Boarding Axe	Rope Ladder	Left Handed	Crimson Bandana	Parrot Squawks
Gunner Grace	Flintlock Pistol	Grappling Hook	Left Handed	Crimson Bandana	Parrot Squawks
Calico Clara	Flintlock Pistol	Smoke Bomb	Left Handed	Obsidian Bandana	Parrot Squawks

CLUE 1

The brass spyglass gauge only reads rounded sea miles so you must approximate the ship distance to reveal the cipher letter.

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

2000 1100 7000 90 200 5000 5000 900 200 3000 30 130 7000 300 3000 130 2000

20 300 7000 900 300 170 130 110 7000 370 130 170 370

Round 2,275 to the nearest thousand $\rightarrow$ **T**

Round 366 to the nearest ten $\rightarrow$ **B**

Round 902 to the nearest hundred $\rightarrow$ **A**

Round 28 to the nearest ten → **D**

Round 4,583 to the nearest thousand → **L**

Round 6,874 to the nearest thousand → **E**

Round 226 to the nearest hundred $\rightarrow$

Round 131 to the nearest ten $\rightarrow$

Round 1,102 to the nearest hundred $\rightarrow$ **H**

Round 106 to the nearest ten $\rightarrow$ **K**

Round 261 to the nearest hundred $\rightarrow$ **S**

Round 171 to the nearest ten $\rightarrow$ **M**

Round 3,107 to the nearest thousand → **N**

Round 92 to the nearest ten $\rightarrow$ **V**

Round 20 to the nearest ten $\rightarrow$ **U**

Scratch space:

CLUE 2 Skip counting

Counting doubloons along the quarterdeck in equal skip counting steps exposes a secret compartment in the floorboards.

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

T					T												T
8	42	16	35	45	8	100	16	33	33	33	18	35	18	140	16	26	8
										T							
42	18	100	9	16	9	50	45	55	18	8	16						

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

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

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, 8, 10, 12, 14, __, 18, 20 → **E**

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, __, 28, 30 → **F**

Skip-count by 3s. Fill the blank: 3, 6, __, 12, 15 → **D**

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, __, 40, 45 → **W**

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

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

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, __, 21, 24 → **A**

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, __, 150, 160 → **L**

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, __, 45, 48 → **H**

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



R

Scratch space:

CLUE 3

Word problems

Quartermaster Drake scribbled word problems across the supply chalkboard that reveal a clue when solved.

Solve each problem, then write its letter in the boxes to fill in the missing word.

Someone scared the villain off with P U W K .

45 19 29 29 98 27 63 110 19 63

Quartermaster Drake lined up 5 rows of 9 treasure chests. How many treasure chests in all?

Answer: → P

Quartermaster Drake lined up 9 rows of 3 spyglasses. How many spyglasses in all?

Answer: → T

Quartermaster Drake lined up 11 rows of 10 compasses. How many compasses in all?

Answer: → Q

There were 113 doubloons. 15 were used up. How many doubloons are left?

Answer: → O

There were 30 map scrolls. 11 were used up. How many map scrolls are left?

Answer: → A

Quartermaster Drake lined up 7 rows of 9 compasses. How many compasses in all?

Answer: → S

Quartermaster Drake found 14 doubloons yesterday and 15 more today. How many doubloons in all?

Answer: → R

Scratch space:

CLUE 4

Bar model word problems

By drawing bar models in the logbook to compare cargo chest weights you balance the equation and decode a message.

Draw a bar model to solve each word problem, then write its letter in the boxes to fill in the missing word.

A strand of

E		E								N			N	
25	128	25	80	9	46	116	68	9		116	9			9

 hair turned up at the scene.

There were 41 map scrolls in all. 16 map scrolls were used. How many map scrolls are left?

draw a bar model

Answer: → **E**

Quartermaster Drake has 138 compasses, packed 3 to a bag. How many bags can be filled?

draw a bar model

Answer: → **L**

Quartermaster Drake used $\frac{1}{4}$ of the compasses on the first day. The other 96 compasses were used the next day. How many compasses were there in all?

draw a bar model

Answer: → **M**

The red team has 143 spyglasses and the blue team has 27 spyglasses. How many more spyglasses does the red team have?

draw a bar model

Answer: → **D**

Quartermaster Drake used $\frac{3}{5}$ of the treasure chests on the first day. The other 32 treasure chests were used the next day. How many treasure chests were there in all?

draw a bar model

Answer: → **R**

Quartermaster Drake shares 136 spyglasses equally among 2 teams. How many spyglasses does each team get?

draw a bar model

Answer: → **B**

Quartermaster Drake has 99 doubloons, packed 11 to a bag. How many bags can be filled?

draw a bar model

Answer: → **A**

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

Filling in the missing addends on the stolen cargo manifest unlocks the lockbox containing the final letter.

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:

$27 + \underline{\quad} = 36$

$34 + \underline{\quad} = 37$

$21 + \underline{\quad} = 22$

$2 + \underline{\quad} = 6$

$17 + \underline{\quad} = 24$

$19 + \underline{\quad} = 21$

$14 + \underline{\quad} = 26$

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

$30 + \underline{\quad} = 35$

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

$2 + \underline{\quad} = 12$

Step 2 - cross out the sentence with each answer:

1. The villain swinging a boarding axe, then swinging away on a grappling hook.
2. The villain swinging a boarding axe, then scouting through a spyglass scope.
3. The villain striking with a sharp hook, then scouting through a spyglass scope.
4. The villain slashing with dual cutlasses, then climbing up a rope ladder.
5. The villain firing a flintlock pistol, then climbing up a rope ladder.
6. The villain slashing with dual cutlasses, then scouting through a spyglass scope.
7. The villain swinging a boarding axe, then vanishing inside a smoke bomb.
8. The villain striking with a sharp hook, then launching a bright signal flare.
9. The villain slashing with dual cutlasses, then swinging away on a grappling hook.
10. The villain slashing with dual cutlasses, then vanishing inside a smoke bomb.
11. The villain swinging a boarding axe, then climbing up a rope ladder.
12. The villain slashing with dual cutlasses, then launching a bright signal flare.

Answer Key

The Mystery of the Missing Compass Rose

Culprit: Stormy Sebastian

Dual Cutlasses · Spyglass Scope · Left Handed · Emerald Bandana · Parrot Squawks

Trail: Start 21 → Clue 1 16 → Clue 2 14 → Clue 3 8 → Clue 4 4 → Clue 5 1

Clue 1 (Rounding): "THE VILLAIN DOES NOT USE A SMOKE BOMB"

Round 2,275 to the nearest thousand = 2000 (T) · Round 366 to the nearest ten = 370 (B) · Round 902 to the nearest hundred = 900 (A) · Round 28 to the nearest ten = 30 (D) · Round 4,583 to the nearest thousand = 5000 (L) · Round 6,874 to the nearest thousand = 7000 (E) · Round 226 to the nearest hundred = 200 (I) · Round 131 to the nearest ten = 130 (O) · Round 1,102 to the nearest hundred = 1100 (H) · Round 106 to the nearest ten = 110 (K) · Round 261 to the nearest hundred = 300 (S) · Round 171 to the nearest ten = 170 (M) · Round 3,107 to the nearest thousand = 3000 (N) · Round 92 to the nearest ten = 90 (V) · Round 20 to the nearest ten = 20 (U)

Clue 2 (Skip counting): "THE WITNESS SAW A LEFT HANDED PIRATE"

Skip-count by 2s. Fill the blank: 2, 4, 6, __, 10, 12 = 8 (T) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, __, 110, 120 = 100 (N) · 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, 8, 10, 12, 14, __, 18, 20 = 16 (E) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, __, 28, 30 = 26 (F) · Skip-count by 3s. Fill the blank: 3, 6, __, 12, 15 = 9 (D) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, __, 40, 45 = 35 (W) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, __, 60, 70 = 50 (P) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, __, 50, 55 = 45 (I) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, __, 21, 24 = 18 (A) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, __, 150, 160 = 140 (L) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, __, 45, 48 = 42 (H) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, __, 60, 65 = 55 (R)

Clue 3 (Word problems): "PARROT SQUAWKS"

Quartermaster Drake lined up 5 rows of 9 treasure chests. How many treasure chests in all? = 45 (P) · Quartermaster Drake lined up 9 rows of 3 spyglasses. How many spyglasses in all? = 27 (T) · Quartermaster Drake lined up 11 rows of 10 compasses. How many compasses in all? = 110 (Q) · There were 113 doubloons. 15 were used up. How many doubloons are left? = 98 (O) · There were 30 map scrolls. 11 were used up. How many map scrolls are left? = 19 (A) · Quartermaster Drake lined up 7 rows of 9 compasses. How many compasses in all? = 63 (S) · Quartermaster Drake found 14 doubloons yesterday and 15 more today. How many doubloons in all? = 29 (R)

Clue 4 (Bar model word problems): "EMERALD BANDANA"

There were 41 map scrolls in all. 16 map scrolls were used. How many map scrolls are left? = 25 (E) · Quartermaster Drake has 138 compasses, packed 3 to a bag. How many bags can be filled? = 46 (L) · Quartermaster Drake used $\frac{1}{4}$ of the compasses on the first day. The other 96 compasses were used the next day. How many compasses were there in all? = 128 (M) · The red team has 143 spyglasses and the blue team has 27 spyglasses. How many more spyglasses does the red team have? = 116 (D) · Quartermaster Drake used $\frac{3}{5}$ of the treasure chests on the first day. The other 32 treasure chests were used the next day. How many treasure chests were there in all? = 80 (R) · Quartermaster Drake shares 136 spyglasses equally among 2 teams. How many spyglasses does each team get? = 68 (B) · Quartermaster Drake has 99 doubloons, packed 11 to a bag. How many bags can be filled? = 9 (A)

Clue 5 (Missing addends): surviving statement is box 6 → Stormy Sebastian

$27 + \underline{\quad} = 36 = 9$ · $34 + \underline{\quad} = 37 = 3$ · $21 + \underline{\quad} = 22 = 1$ · $2 + \underline{\quad} = 6 = 4$ · $17 + \underline{\quad} = 24 = 7$ · $19 + \underline{\quad} = 21 = 2$ · $14 + \underline{\quad} = 26 = 12$ · $3 + \underline{\quad} = 14 = 11$ · $30 + \underline{\quad} = 35 = 5$ · $10 + \underline{\quad} = 18 = 8$ · $2 + \underline{\quad} = 12 = 10$