



The Great Aether-Compass Heist

Grade 4 math · Rounding, Addition, Subtraction, Multiplication, Division · Reading level grades 7-9

Detective: _____ **Date:** _____

An elite sky-pirate has stolen the legendary Aether-Compass from the Royal Observatory of Zephyrus! If they unlock its power, they can command the trade winds and rule the floating islands forever. As the Lead Detective of the Sky Patrol, you must analyze the clues, track down the culprit, and recover the compass before they vanish into the Endless Maelstrom.

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 sky-bandit is _____

Possible suspects

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

NAME	SPECIALTY	AUXILIARY GEAR	EYEPATCH SIDE	HAIRSTYLE	VULNERABILITY
Peter Pan	Engine-boosting	Double jumping	Right eye patch	Neon green dreads	Sneeze powder
Phileas Fogg	Engine-boosting	Map decoding	Left eye patch	Bright blue dye	Sneeze powder
Nellie Bly	Grapple-hooking	Propeller boots	Right eye patch	Neon green dreads	Glow-in-the-dark paint
Alan Quatermain	Storm-calling	Map decoding	Left eye patch	Bright blue dye	Glow-in-the-dark paint
James Hook	Cloud-cloaking	Spyglass sight	Right eye patch	Bright blue dye	Sneeze powder
Will Turner	Storm-calling	Double jumping	Left eye patch	Neon green dreads	Sneeze powder
Hector Barbossa	Engine-boosting	Double jumping	Left eye patch	Sizzling orange spikes	Sticky sap bomb
Edward Kenway	Cloud-cloaking	Propeller boots	Right eye patch	Neon green dreads	Sneeze powder
Long John	Grapple-hooking	Propeller boots	Left eye patch	Sizzling orange spikes	Sneeze powder
Guybrush Threepwood	Grapple-hooking	Spyglass sight	Right eye patch	Bright blue dye	Sneeze powder
Lara Croft	Storm-calling	Map decoding	Left eye patch	Bright blue dye	Sneeze powder
Jim Hawkins	Grapple-hooking	Double jumping	Left eye patch	Sizzling orange spikes	Sticky sap bomb
Amelia Earhart	Engine-boosting	Magnetic gloves	Left eye patch	Sizzling orange spikes	Sneeze powder
Nathan Drake	Grapple-hooking	Spyglass sight	Left eye patch	Bright blue dye	Sneeze powder
Robin Hood	Cloud-cloaking	Propeller boots	Left eye patch	Bright blue dye	Sneeze powder
Evie Carnahan	Cloud-cloaking	Propeller boots	Right eye patch	Sizzling orange spikes	Glow-in-the-dark paint
Marco Polo	Engine-boosting	Magnetic gloves	Left eye patch	Bright blue dye	Sticky sap bomb
Wendy Darling	Engine-boosting	Map decoding	Left eye patch	Neon green dreads	Sneeze powder
Jack Aubrey	Engine-boosting	Spyglass sight	Right eye patch	Sizzling orange spikes	Sneeze powder
Indiana Jones	Wind-bending	Double jumping	Left eye patch	Bright blue dye	Sneeze powder
Rick OConnell	Wind-bending	Map decoding	Right eye patch	Bright blue dye	Sneeze powder

CLUE 1

Our navigator scans the sky-radar for the villain's getaway ship. The signal is weak, so the compass readout automatically rounds the heading to the nearest ten to keep the needle steady.

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

Diagram illustrating a sequence of numbers arranged in two rows of boxes. The top row contains 15 boxes, and the bottom row contains 10 boxes. Some boxes are shaded orange and contain the letter 'T'.

Top Row (15 boxes):

- Box 1: Orange, contains 'T'. Below: 3000
- Box 2: White. Below: 4300
- Box 3: White. Below: 130
- Box 4: White. Below: 50
- Box 5: White. Below: 1300
- Box 6: White. Below: 3700
- Box 7: White. Below: 30
- Box 8: White. Below: 130
- Box 9: White. Below: 290
- Box 10: White. Below: 1300
- Box 11: White. Below: 130
- Box 12: White. Below: 5000
- Box 13: White. Below: 70
- Box 14: White. Below: 1300
- Box 15: Orange, contains 'T'. Below: 3000

Bottom Row (10 boxes):

- Box 1: White. Below: 2000
- Box 2: White. Below: 50
- Box 3: White. Below: 1300
- Box 4: White. Below: 2000
- Box 5: White. Below: 130
- Box 6: White. Below: 500
- Box 7: White. Below: 500
- Box 8: White. Below: 130
- Box 9: White. Below: 50
- Box 10: White. Below: 2300

Additional numbers below the bottom row:

- Box 11: White. Below: 1300
- Box 12: White. Below: 1300
- Box 13: Orange, contains 'T'. Below: 3000
- Box 14: White. Below: 5000

Round 2,701 to the nearest thousand $\rightarrow$ **T**

Round 290 to the nearest ten $\rightarrow$ **D**

Round 1,276 to the nearest hundred $\rightarrow$

Round 34 to the nearest ten $\rightarrow$ **U**

Round 4,306 to the nearest hundred $\rightarrow$ **H**

Round 2,152 to the nearest thousand → **P**

Round 2,261 to the nearest hundred $\rightarrow$ **B**

Round 4,576 to the nearest thousand $\rightarrow$ **S**

Round 66 to the nearest ten $\rightarrow$ **N**

Round 132 to the nearest ten $\rightarrow$ **E**

Round 455 to the nearest hundred $\rightarrow$ **L**

Round 52 to the nearest ten $\rightarrow$ **R**

Round 3,716 to the nearest hundred → **G**

Scratch space:

CLUE 2

We investigate the abandoned sky-dock where the pirate ship loaded supplies. The dockmaster tallies up the total weight of the fuel crates to see how far the ship can fly.

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

Diagram illustrating the sequence of numbers and their corresponding boxes:

8853	2088	5863	8956	4126	6082	6082	7891	4126	8880	5998	5863	7891	3486	2632	8853	2088	5863
6082	5863	5946	8853	5863	9111	5863	7625	7891	8853	6203	2088						

$$5878 + 2975 = \boxed{} \rightarrow \boxed{\text{T}}$$

$$4784 + 4096 = \boxed{} \rightarrow \boxed{\text{N}}$$

$$3794 + 2409 = \boxed{} \rightarrow \boxed{\text{C}}$$

$3043 + 4582 = \boxed{} \rightarrow \boxed{\text{P}}$

$3997 + 1949 = \boxed{} \rightarrow \boxed{\text{F}}$

$$3092 + 5864 = \boxed{} \rightarrow \mathbf{v}$$

$$4976 + 4135 = \boxed{} \rightarrow \mathbf{Y}$$

$1102 + 986 = \boxed{} \rightarrow \boxed{\text{H}}$

$$2949 + 3133 = \boxed{} \rightarrow \boxed{\text{L}}$$

$$2130 + 3868 = \boxed{} \rightarrow \boxed{\text{W}}$$

$$3204 + 2659 = \boxed{} \rightarrow \boxed{\text{E}}$$

$1296 + 2830 = \boxed{} \rightarrow \boxed{}$

$$2153 + 1333 = \boxed{} \rightarrow \boxed{\text{R}}$$

$$4020 + 3871 = \boxed{} \rightarrow \boxed{\text{A}}$$

$$1343 + 1289 = \boxed{} \rightarrow \boxed{\text{S}}$$

Scratch space:

CLUE 3

Subtraction

A sudden hiss reveals a leak in our airship's steam valve. We must quickly subtract the lost pressure from our reserve tanks to ensure we do not crash into the floating reefs.

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

U																	
6738	6573	2820	6573	5298	2820	2820	3417	2820	3636	2453	6998	7066	2820	2135	5382	2453	

6573	5382	2453	3636	5382	6124	2820	3548	2453	2820

$11644 - 4906 = \square \rightarrow \text{U}$

$7378 - 4558 = \square \rightarrow \text{E}$

$8752 - 1754 = \square \rightarrow \text{W}$

$6565 - 4112 = \square \rightarrow \text{O}$

$7073 - 1691 = \square \rightarrow \text{T}$

$2404 - 269 = \square \rightarrow \text{R}$

$6082 - 2446 = \square \rightarrow \text{P}$

$7548 - 4000 = \square \rightarrow \text{F}$

$5495 - 197 = \square \rightarrow \text{N}$

$7064 - 3647 = \square \rightarrow \text{Z}$

$8426 - 1853 = \square \rightarrow \text{S}$

$7367 - 301 = \square \rightarrow \text{D}$

$10198 - 4074 = \square \rightarrow \text{H}$

Scratch space:

CLUE 4 Multiplication facts (1-12)

To navigate the treacherous sky-maze, we need to calculate our speed. We look at the grid of engine gears, multiplying the rows of rotating teeth to determine our velocity.

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

$$10 \times 9 = \boxed{} \rightarrow \boxed{\text{L}}$$

$7 \times 8 = \boxed{} \rightarrow \boxed{\mathbf{B}}$

$$2 \times 12 = \boxed{} \rightarrow \boxed{\text{R}}$$

$3 \times 11 = \square \rightarrow \mathbf{H}$

$9 \times 9 = \square \rightarrow \boxed{1}$

$12 \times 12 = \boxed{} \rightarrow \boxed{\text{E}}$

$9 \times 7 = \boxed{} \rightarrow \boxed{\text{T}}$

$11 \times 7 = \boxed{} \rightarrow \boxed{\text{D}}$

$11 \times 6 = \boxed{} \rightarrow \boxed{\text{Y}}$

$4 \times 7 = \boxed{} \rightarrow \boxed{\text{N}}$

$$8 \times 8 = \boxed{} \rightarrow \boxed{\text{U}}$$

$$5 \times 11 = \boxed{} \rightarrow \boxed{\text{S}}$$

$10 \times 10 = \square \rightarrow \mathbf{F}$

$12 \times 11 = \boxed{} \rightarrow \boxed{\text{A}}$

$9 \times 11 = \boxed{} \rightarrow \boxed{\text{G}}$

Scratch space:

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

We find a stash of coded cipher keys left behind by the fleeing crew. Splitting the total number of keys evenly among our landing party helps us unlock the security vaults.

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:

$63 \div 9 = \boxed{}$

$80 \div 8 = \boxed{}$

$22 \div 2 = \boxed{}$

$18 \div 3 = \boxed{}$

$108 \div 9 = \boxed{}$

$50 \div 10 = \boxed{}$

$6 \div 2 = \boxed{}$

$6 \div 6 = \boxed{}$

$9 \div 1 = \boxed{}$

$16 \div 8 = \boxed{}$

$8 \div 2 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain boosts the engines to maximum speed, then steals the sky-chest with magnetic gloves.
2. The villain boosts the engines to maximum speed, then leaps onto the deck with a double jump.
3. The villain boosts the engines to maximum speed, then zips upward using propeller boots.
4. The villain activates cloud-cloaking to vanish, then zips upward using propeller boots.
5. The villain activates cloud-cloaking to vanish, then finds the secret path by map decoding.
6. The villain grapple-hooks onto the airship hull, then finds the secret path by map decoding.
7. The villain uses wind-bending to soar, then leaps onto the deck with a double jump.
8. The villain boosts the engines to maximum speed, then finds the secret path by map decoding.
9. The villain summons a storm-cloud distraction, then leaps onto the deck with a double jump.
10. The villain grapple-hooks onto the airship hull, then spotlights the area with spyglass sight.
11. The villain summons a storm-cloud distraction, then finds the secret path by map decoding.
12. The villain activates cloud-cloaking to vanish, then spotlights the area with spyglass sight.

Answer Key

The Great Aether-Compass Heist

Culprit: Phileas Fogg

Engine-boosting · Map decoding · Left eye patch · Bright blue dye · Sneeze powder

Trail: Start 21 → Clue 1 16 → Clue 2 11 → Clue 3 7 → Clue 4 4 → Clue 5 1

Clue 1 (Rounding): "THE ROGUE DOES NOT USE PROPELLER BOOTS"

Round 2,701 to the nearest thousand = 3000 (T) · Round 290 to the nearest ten = 290 (D) · Round 1,276 to the nearest hundred = 1300 (O) · Round 34 to the nearest ten = 30 (U) · Round 4,306 to the nearest hundred = 4300 (H) · Round 2,152 to the nearest thousand = 2000 (P) · Round 2,261 to the nearest hundred = 2300 (B) · Round 4,576 to the nearest thousand = 5000 (S) · Round 66 to the nearest ten = 70 (N) · Round 132 to the nearest ten = 130 (E) · Round 455 to the nearest hundred = 500 (L) · Round 52 to the nearest ten = 50 (R) · Round 3,716 to the nearest hundred = 3700 (G)

Clue 2 (Addition): "THE VILLAIN WEARS THE LEFT EYE PATCH"

$5878 + 2975 = 8853$ (T) · $4784 + 4096 = 8880$ (N) · $3794 + 2409 = 6203$ (C) · $3043 + 4582 = 7625$ (P) · $3997 + 1949 = 5946$ (F) · $3092 + 5864 = 8956$ (V) · $4976 + 4135 = 9111$ (Y) · $1102 + 986 = 2088$ (H) · $2949 + 3133 = 6082$ (L) · $2130 + 3868 = 5998$ (W) · $3204 + 2659 = 5863$ (E) · $1296 + 2830 = 4126$ (I) · $2153 + 1333 = 3486$ (R) · $4020 + 3871 = 7891$ (A) · $1343 + 1289 = 2632$ (S)

Clue 3 (Subtraction): "USE SNEEZE POWDER TO STOP THE FOE"

$11644 - 4906 = 6738$ (U) · $7378 - 4558 = 2820$ (E) · $8752 - 1754 = 6998$ (W) · $6565 - 4112 = 2453$ (O) · $7073 - 1691 = 5382$ (T) · $2404 - 269 = 2135$ (R) · $6082 - 2446 = 3636$ (P) · $7548 - 4000 = 3548$ (F) · $5495 - 197 = 5298$ (N) · $7064 - 3647 = 3417$ (Z) · $8426 - 1853 = 6573$ (S) · $7367 - 301 = 7066$ (D) · $10198 - 4074 = 6124$ (H)

Clue 4 (Multiplication facts (1-12)): "LEFT BEHIND BRIGHT BLUE DYE STRANDS"

$10 \times 9 = 90$ (L) · $7 \times 8 = 56$ (B) · $2 \times 12 = 24$ (R) · $3 \times 11 = 33$ (H) · $9 \times 9 = 81$ (I) · $12 \times 12 = 144$ (E) · $9 \times 7 = 63$ (T) · $11 \times 7 = 77$ (D) · $11 \times 6 = 66$ (Y) · $4 \times 7 = 28$ (N) · $8 \times 8 = 64$ (U) · $5 \times 11 = 55$ (S) · $10 \times 10 = 100$ (F) · $12 \times 11 = 132$ (A) · $9 \times 11 = 99$ (G)

Clue 5 (Division facts (1-12)): surviving statement is box 8 → Phileas Fogg

$63 \div 9 = 7$ · $80 \div 8 = 10$ · $22 \div 2 = 11$ · $18 \div 3 = 6$ · $108 \div 9 = 12$ · $50 \div 10 = 5$ · $6 \div 2 = 3$ · $6 \div 6 = 1$ · $9 \div 1 = 9$ · $16 \div 8 = 2$ · $8 \div 2 = 4$