



# The Great Sky-Ship Heist

Grade 5 math · Multiplication, Fractions of a number, Order of operations, Rounding, Division · Reading level grades 7-9

Detective: \_\_\_\_\_ Date: \_\_\_\_\_

An unidentified sky-pirate has infiltrated the Grand Archive of Aetheria, stealing the legendary Skylight Compass. The culprit slipped through the cloud-docks undetected, leaving behind a trail of mystery. As the kingdom's lead detective, you must piece together the physical evidence and navigational data to track down the rogue's flagship before they vanish into the Great Storm. Analyze the clues carefully to identify the thief and recover the compass.

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-Pirate is** \_\_\_\_\_

# Possible suspects

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

| NAME             | AETHER PROPULSION GEAR | AUXILIARY STEAMPUNK TOOL | GLOVE PREFERENCE   | SAILOR HAIR STYLE   | DEFENSE WEAKNESS |
|------------------|------------------------|--------------------------|--------------------|---------------------|------------------|
| Lyra Sterling    | Solar Sails            | Flare Gun                | Right-handed glove | Sunset Orange       | Flash Powder     |
| Captain Silas    | Grappling Hook         | Wind-Whistle             | Right-handed glove | Windblown Green     | Net Launcher     |
| Marina Vane      | Solar Sails            | Spy-Scope                | Right-handed glove | Windblown Green     | Flash Powder     |
| Cinder Read      | Grappling Hook         | Fog Generator            | Left-handed glove  | Windblown Green     | Net Launcher     |
| Rogue Rogers     | Cloud Camouflage       | Fog Generator            | Right-handed glove | Windblown Green     | Flash Powder     |
| Stormy Low       | Turbo Thrusters        | Spy-Scope                | Right-handed glove | Windblown Green     | Flash Powder     |
| Talon Morgan     | Solar Sails            | Electro-Net              | Left-handed glove  | Goggle-Marked Brown | Flash Powder     |
| Gale Hornigold   | Cloud Camouflage       | Spy-Scope                | Right-handed glove | Goggle-Marked Brown | Magnet Trap      |
| Vapor Vance      | Grappling Hook         | Fog Generator            | Left-handed glove  | Goggle-Marked Brown | Magnet Trap      |
| Saber Avery      | Turbo Thrusters        | Spy-Scope                | Left-handed glove  | Goggle-Marked Brown | Magnet Trap      |
| Claw Condor      | Solar Sails            | Fog Generator            | Right-handed glove | Windblown Green     | Flash Powder     |
| Finn Lafitte     | Turbo Thrusters        | Wind-Whistle             | Right-handed glove | Sunset Orange       | Flash Powder     |
| Nova Neville     | Grappling Hook         | Electro-Net              | Right-handed glove | Windblown Green     | Magnet Trap      |
| Jasper Kidd      | Grappling Hook         | Wind-Whistle             | Left-handed glove  | Windblown Green     | Net Launcher     |
| Blaze Blackbeard | Turbo Thrusters        | Fog Generator            | Right-handed glove | Sunset Orange       | Net Launcher     |
| Sundance Kidd    | Solar Sails            | Flare Gun                | Right-handed glove | Sunset Orange       | Net Launcher     |
| Dagger Davis     | Sound Silencer         | Wind-Whistle             | Left-handed glove  | Windblown Green     | Flash Powder     |
| Breezy Bellamy   | Grappling Hook         | Fog Generator            | Left-handed glove  | Sunset Orange       | Net Launcher     |
| Echo Bonny       | Grappling Hook         | Wind-Whistle             | Right-handed glove | Windblown Green     | Flash Powder     |
| Zephyr Drake     | Turbo Thrusters        | Fog Generator            | Right-handed glove | Windblown Green     | Flash Powder     |
| Orion Black      | Turbo Thrusters        | Spy-Scope                | Right-handed glove | Sunset Orange       | Net Launcher     |

## Multiplication facts (1-12)

We slipped into the smuggler's warehouse to count their secret cargo crates. The crates were stacked in perfect, uniform rows. By calculating the total number of crates using grid multiplication, we uncovered our first breakthrough.

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

A 2x10 grid of boxes. The top row contains the following sequence: an orange box with 'T', three empty boxes, an orange box with 'T', and seven empty boxes. The bottom row contains ten empty boxes. Below each box is a number. The top row numbers are: 72, 25, 33, 27, 24, 49, 6, 72, 33, 1, 60, 33, 3, 16, 60, 72. The bottom row numbers are: 25, 6, 7, 33, 6, 3, 27, 15, 3, 81, 60, 27, 33.

$$8 \times 9 = \boxed{\phantom{00}} \rightarrow \boxed{\text{T}}$$

$$5 \times 5 = \boxed{\phantom{00}} \rightarrow \text{H}$$

$$11 \times 3 = \boxed{\phantom{00}} \rightarrow \boxed{\text{E}}$$

$5 \times 3 = \square \rightarrow \boxed{\mathbf{Y}}$

$3 \times 9 = \square \rightarrow \boxed{\mathbf{P}}$

$4 \times 6 = \square \rightarrow \boxed{1}$

$4 \times 4 = \boxed{\phantom{00}} \rightarrow \boxed{\mathbf{N}}$

$10 \times 6 = \boxed{\phantom{00}} \rightarrow \boxed{\text{O}}$

$7 \times 7 = \boxed{\phantom{00}} \rightarrow \boxed{\text{R}}$

$1 \times 7 = \boxed{\phantom{00}} \rightarrow \boxed{\mathbf{v}}$

$1 \times 1 = \square \rightarrow \mathbf{D}$

$1 \times 3 = \boxed{\phantom{00}} \rightarrow \boxed{\mathbf{S}}$

$9 \times 9 =$    $\rightarrow$  **C**

$1 \times 6 = \boxed{\phantom{000}} \rightarrow \boxed{\mathbf{A}}$

Scratch space:

**CLUE 2**
**Fractions of a number**

The rogue left behind a damaged star-chart. Only a specific fraction of the chart's total coordinate points remained unburned. We calculated this fractional value to pinpoint the villain's next potential hiding spot.

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

|    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|---|----|----|----|----|----|----|----|
| T  |    |    |    |    |    |    |    |   |    | T  |    |    |    |    |    |
| 13 | 17 | 40 | 37 | 8  | 37 | 39 | 40 | 3 | 13 | 30 | 24 | 33 | 40 | 38 |    |
|    |    |    |    | T  |    |    |    |   |    |    |    |    |    |    |    |
| 33 | 22 | 35 | 17 | 13 | 17 | 38 | 18 | 6 | 40 | 6  | 35 | 15 | 24 | 9  | 40 |

$1/4 \text{ of } 52 = \square \rightarrow \boxed{\text{T}}$

$2/3 \text{ of } 36 = \square \rightarrow \boxed{\text{O}}$

$1/10 \text{ of } 170 = \square \rightarrow \boxed{\text{H}}$

$6/8 \text{ of } 4 = \square \rightarrow \boxed{\text{C}}$

$2/6 \text{ of } 120 = \square \rightarrow \boxed{\text{E}}$

$6/8 \text{ of } 40 = \square \rightarrow \boxed{\text{W}}$

$3/6 \text{ of } 76 = \square \rightarrow \boxed{\text{A}}$

$4/8 \text{ of } 78 = \square \rightarrow \boxed{\text{P}}$

$2/10 \text{ of } 75 = \square \rightarrow \boxed{\text{L}}$

$3/6 \text{ of } 66 = \square \rightarrow \boxed{\text{R}}$

$6/10 \text{ of } 10 = \square \rightarrow \boxed{\text{D}}$

$2/3 \text{ of } 12 = \square \rightarrow \boxed{\text{U}}$

$1/3 \text{ of } 111 = \square \rightarrow \boxed{\text{S}}$

$1/8 \text{ of } 144 = \square \rightarrow \boxed{\text{N}}$

$3/4 \text{ of } 12 = \square \rightarrow \boxed{\text{V}}$

$7/8 \text{ of } 40 = \square \rightarrow \boxed{\text{G}}$

$1/8 \text{ of } 176 = \square \rightarrow \boxed{\text{I}}$

Scratch space:

**CLUE 3**
**Order of operations**

To crack the locked security safe on the flagship's bridge, we had to solve a complex mathematical equation. Following the strict order of operations allowed us to bypass the alarm and retrieve a hidden diary.

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

|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
| T  |    |    |    |    |    |    |    | T  |    |    |    |    |    |    |    |    |  |
| 80 | 10 | 39 | 15 | 29 | 75 | 32 | 80 | 39 | 75 | 39 | 64 | 66 | 29 | 19 | 39 | 26 |  |
|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| 14 | 75 | 66 | 48 | 14 | 19 | 32 | 33 | 10 | 15 | 66 | 37 | 26 | 39 | 75 |    |    |  |

$52 + 7 \times 4 = \square \rightarrow \boxed{\text{T}}$

$19 + 3 \times 6 = \square \rightarrow \boxed{\text{W}}$

$4 + 2 \times 3 = \square \rightarrow \boxed{\text{H}}$

$6 \times 7 - 10 = \square \rightarrow \boxed{\text{A}}$

$2 \times 10 - 1 = \square \rightarrow \boxed{\text{L}}$

$21 + 6 \times 2 = \square \rightarrow \boxed{\text{S}}$

$12 \times 8 - 30 = \square \rightarrow \boxed{\text{O}}$

$11 + 3 \times 6 = \square \rightarrow \boxed{\text{I}}$

$8 \times 11 - 13 = \square \rightarrow \boxed{\text{R}}$

$2 + 6 \times 4 = \square \rightarrow \boxed{\text{D}}$

$9 + 6 \times 5 = \square \rightarrow \boxed{\text{E}}$

$16 + 4 \times 8 = \square \rightarrow \boxed{\text{M}}$

$52 + 3 \times 4 = \square \rightarrow \boxed{\text{C}}$

$8 + 3 \times 2 = \square \rightarrow \boxed{\text{F}}$

$4 \times 11 - 29 = \square \rightarrow \boxed{\text{P}}$

Scratch space:

## CLUE 4 Rounding

Our long-range radar picked up a faint engine signature through the dense nebula. The radar's screen could only display approximate, rounded distances. Rounding the signals to the nearest ten revealed the exact trajectory of the runaway ship.

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

|     |     |     |     |      |      |    |     |    |    |      |      |    |     |     |     |
|-----|-----|-----|-----|------|------|----|-----|----|----|------|------|----|-----|-----|-----|
| W   |     |     |     |      |      |    |     |    |    |      |      |    |     |     |     |
| 130 | 170 | 700 | 110 | 5000 | 2300 | 70 | 370 | 50 | 90 | 9000 | 2300 | 70 | 370 | 110 | 700 |

  

|     |      |      |    |    |      |     |     |      |     |    |     |     |      |      |      |
|-----|------|------|----|----|------|-----|-----|------|-----|----|-----|-----|------|------|------|
| W   |      |      |    |    |      |     | W   |      |     |    |     |     |      |      |      |
| 130 | 3700 | 2300 | 70 | 20 | 1700 | 110 | 130 | 2300 | 900 | 90 | 170 | 170 | 2300 | 7000 | 9000 |

Round 132 to the nearest ten  → **W**

Round 72 to the nearest ten  → **D**

Round 5,219 to the nearest thousand  → **U**

Round 48 to the nearest ten  → **T**

Round 374 to the nearest ten  → **S**

Round 3,717 to the nearest hundred  → **I**

Round 91 to the nearest ten  → **R**

Round 110 to the nearest ten  → **O**

Round 6,795 to the nearest thousand  → **H**

Round 19 to the nearest ten  → **B**

Round 698 to the nearest hundred  → **F**

Round 896 to the nearest hundred  → **G**

Round 8,938 to the nearest thousand  → **A**

Round 167 to the nearest ten  → **E**

Round 2,346 to the nearest hundred  → **N**

Round 1,672 to the nearest hundred  → **L**

Scratch space:

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

The skyship crew was arguing loudly over how to split their emergency fuel canisters equally. By calculating the exact division of the fuel among the remaining scouts, we managed to track where the guilty thief slipped away.

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:**

$18 \div 9 = \boxed{\phantom{00}}$

$16 \div 4 = \boxed{\phantom{00}}$

$132 \div 12 = \boxed{\phantom{00}}$

$5 \div 1 = \boxed{\phantom{00}}$

$1 \div 1 = \boxed{\phantom{00}}$

$50 \div 5 = \boxed{\phantom{00}}$

$30 \div 10 = \boxed{\phantom{00}}$

$18 \div 2 = \boxed{\phantom{00}}$

$60 \div 5 = \boxed{\phantom{00}}$

$8 \div 1 = \boxed{\phantom{00}}$

$36 \div 6 = \boxed{\phantom{00}}$

**Step 2 - cross out the sentence with each answer:**

1. The villain blasted away with turbo thrusters, then shot a bright flare gun into the sky.
2. The villain snatched the chest with a grappling hook, then blew a wind whistle to summon a storm.
3. The villain snatched the chest with a grappling hook, then shrouded the docks with a fog generator.
4. The villain glided silently using solar sails, then shrouded the docks with a fog generator.
5. The villain glided silently using solar sails, then scanned the horizon with a spy scope.
6. The villain blasted away with turbo thrusters, then fired an electro net at the guards.
7. The villain cloaked their ship in a thick cloud, then shrouded the docks with a fog generator.
8. The villain activated the sound silencer to slip by, then shot a bright flare gun into the sky.
9. The villain activated the sound silencer to slip by, then blew a wind whistle to summon a storm.
10. The villain cloaked their ship in a thick cloud, then shot a bright flare gun into the sky.
11. The villain blasted away with turbo thrusters, then shrouded the docks with a fog generator.
12. The villain snatched the chest with a grappling hook, then fired an electro net at the guards.

# Answer Key

## The Great Sky-Ship Heist

### Culprit: Rogue Rogers

Cloud Camouflage · Fog Generator · Right-handed glove · Windblown Green · Flash Powder

Trail: Start 21 → Clue 1 16 → Clue 2 10 → Clue 3 6 → Clue 4 4 → Clue 5 1

#### Clue 1 (Multiplication facts (1-12)): "THE PIRATE DOES NOT HAVE A SPY SCOPE"

$8 \times 9 = 72$  (T) ·  $5 \times 5 = 25$  (H) ·  $11 \times 3 = 33$  (E) ·  $5 \times 3 = 15$  (Y) ·  $3 \times 9 = 27$  (P) ·  $4 \times 6 = 24$  (I) ·  $4 \times 4 = 16$  (N) ·  $10 \times 6 = 60$  (O) ·  $7 \times 7 = 49$  (R) ·  $1 \times 7 = 7$  (V) ·  $1 \times 1 = 1$  (D) ·  $1 \times 3 = 3$  (S) ·  $9 \times 9 = 81$  (C) ·  $1 \times 6 = 6$  (A)

#### Clue 2 (Fractions of a number): "THE SUSPECT WORE A RIGHT HANDED GLOVE"

$\frac{1}{4}$  of 52 = 13 (T) ·  $\frac{2}{3}$  of 36 = 24 (O) ·  $\frac{1}{10}$  of 170 = 17 (H) ·  $\frac{6}{8}$  of 4 = 3 (C) ·  $\frac{2}{6}$  of 120 = 40 (E) ·  $\frac{6}{8}$  of 40 = 30 (W) ·  $\frac{3}{6}$  of 76 = 38 (A) ·  $\frac{4}{8}$  of 78 = 39 (P) ·  $\frac{2}{10}$  of 75 = 15 (L) ·  $\frac{3}{6}$  of 66 = 33 (R) ·  $\frac{6}{10}$  of 10 = 6 (D) ·  $\frac{2}{3}$  of 12 = 8 (U) ·  $\frac{1}{3}$  of 111 = 37 (S) ·  $\frac{1}{8}$  of 144 = 18 (N) ·  $\frac{3}{4}$  of 12 = 9 (V) ·  $\frac{7}{8}$  of 40 = 35 (G) ·  $\frac{1}{8}$  of 176 = 22 (I)

#### Clue 3 (Order of operations): "THE PIRATE RECOILED FROM FLASH POWDER"

$52 + 7 \times 4 = 80$  (T) ·  $19 + 3 \times 6 = 37$  (W) ·  $4 + 2 \times 3 = 10$  (H) ·  $6 \times 7 - 10 = 32$  (A) ·  $2 \times 10 - 1 = 19$  (L) ·  $21 + 6 \times 2 = 33$  (S) ·  $12 \times 8 - 30 = 66$  (O) ·  $11 + 3 \times 6 = 29$  (I) ·  $8 \times 11 - 13 = 75$  (R) ·  $2 + 6 \times 4 = 26$  (D) ·  $9 + 6 \times 5 = 39$  (E) ·  $16 + 4 \times 8 = 48$  (M) ·  $52 + 3 \times 4 = 64$  (C) ·  $8 + 3 \times 2 = 14$  (F) ·  $4 \times 11 - 29 = 15$  (P)

#### Clue 4 (Rounding): "WE FOUND STRANDS OF WINDBLOWN GREEN HAIR"

Round 132 to the nearest ten = 130 (W) · Round 72 to the nearest ten = 70 (D) · Round 5,219 to the nearest thousand = 5000 (U) · Round 48 to the nearest ten = 50 (T) · Round 374 to the nearest ten = 370 (S) · Round 3,717 to the nearest hundred = 3700 (I) · Round 91 to the nearest ten = 90 (R) · Round 110 to the nearest ten = 110 (O) · Round 6,795 to the nearest thousand = 7000 (H) · Round 19 to the nearest ten = 20 (B) · Round 698 to the nearest hundred = 700 (F) · Round 896 to the nearest hundred = 900 (G) · Round 8,938 to the nearest thousand = 9000 (A) · Round 167 to the nearest ten = 170 (E) · Round 2,346 to the nearest hundred = 2300 (N) · Round 1,672 to the nearest hundred = 1700 (L)

#### Clue 5 (Division facts (1-12)): surviving statement is box 7 → Rogue Rogers

$18 \div 9 = 2$  ·  $16 \div 4 = 4$  ·  $132 \div 12 = 11$  ·  $5 \div 1 = 5$  ·  $1 \div 1 = 1$  ·  $50 \div 5 = 10$  ·  $30 \div 10 = 3$  ·  $18 \div 2 = 9$  ·  $60 \div 5 = 12$  ·  $8 \div 1 = 8$  ·  $36 \div 6 = 6$