



The Sky-Shard Heist

Grade 6 math · Percentages, Exponents, Order of operations, Multiplication, Division · Reading level grades 5-6

Detective: _____ Date: _____

A daring rogue has stolen the ancient Sun-Compass from the Nimbus Vaults! As the Sky-Patrol's lead detective, you must track down the culprit among the visiting airship captains before they sail beyond the clouds.

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-Thief is _____

Possible suspects

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

NAME	PRIMARY TOOL	SPECIAL GEAR	STEERING HAND	FLIGHT HAT	COOKIE ALLERGY
Stormy Sam	Grappling hook	Flashlight ring	Left-handed steerer	Gold crown helmet	Dazzled by mirrors
Captain Hook	Smoke bombs	Spyglass lens	Left-handed steerer	Blue goggles	Sneeze at peppermint
Sinbad	Smoke bombs	Laser pointer	Right-handed steerer	Red bandanna	Fears loud whistles
Wendy Darling	Grappling hook	Flashlight ring	Right-handed steerer	Gold crown helmet	Sneeze at peppermint
Henry Morgan	Grappling hook	Sonic whistle	Right-handed steerer	Gold crown helmet	Fears loud whistles
Calico Jack	Smoke bombs	Flashlight ring	Right-handed steerer	Gold crown helmet	Sneeze at peppermint
John Silver	Pocket portal	Laser pointer	Right-handed steerer	Gold crown helmet	Sneeze at peppermint
Mary Read	Grappling hook	Compass watch	Right-handed steerer	Gold crown helmet	Sneeze at peppermint
Peter Pan	Jetpack boots	Sonic whistle	Left-handed steerer	Gold crown helmet	Sneeze at peppermint
Gale Windrunner	Glider wings	Spyglass lens	Right-handed steerer	Gold crown helmet	Sneeze at peppermint
Grace OMalley	Smoke bombs	Sonic whistle	Left-handed steerer	Blue goggles	Dazzled by mirrors
Sir Francis	Pocket portal	Sonic whistle	Right-handed steerer	Blue goggles	Fears loud whistles
Skye Tracker	Pocket portal	Sonic whistle	Left-handed steerer	Blue goggles	Sneeze at peppermint
Blackbeard	Smoke bombs	Flashlight ring	Right-handed steerer	Red bandanna	Sneeze at peppermint
Ben Gunn	Jetpack boots	Sonic whistle	Left-handed steerer	Gold crown helmet	Dazzled by mirrors
Zephyr Zach	Pocket portal	Laser pointer	Left-handed steerer	Red bandanna	Fears loud whistles
Anne Bonny	Jetpack boots	Sonic whistle	Right-handed steerer	Red bandanna	Sneeze at peppermint
Aero Barnaby	Glider wings	Compass watch	Right-handed steerer	Gold crown helmet	Fears loud whistles
Captain Nemo	Grappling hook	Laser pointer	Left-handed steerer	Blue goggles	Sneeze at peppermint
Breezy Bella	Pocket portal	Compass watch	Right-handed steerer	Gold crown helmet	Dazzled by mirrors
Long John	Smoke bombs	Compass watch	Right-handed steerer	Blue goggles	Dazzled by mirrors

CLUE 1 Percentages

The vault security system tracks energy levels. We need to find what percentage of the battery remains to unlock the first clue.

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

Diagram illustrating the sequence of boxes and their associated numbers, with 'T' markers indicating specific positions:

Row 1: [T, 34, 31, 22, 21, 35, 44, 13, 23, 10, 37, 22, 21, 16, 37, T, 34, 32, 22, 44, 38]

Row 2: [44, 35, 37, 13, 23, 44, 21, 21, 32, 44, T, 34, 35, 31]

40% of 85 = $\rightarrow$ **T**

5% of 640 = $\rightarrow$ **W**

50% of 76 = $\rightarrow$ **R**

20% of 220 = $\rightarrow$ **A**

10% of 160 = $\rightarrow$ **N**

5% of 740 = $\rightarrow$

5% of 700 = $\rightarrow$ **C**

5% of 260 = → **M**

50% of 46 = → **P**

20% of 110 = → **E**

60% of 35 = $\rightarrow$ **S**

5% of 620 = → **H**

20% of 50 = $\rightarrow$ **D**

Scratch space:

CLUE 2

The escape pod grid grows exponentially with each jump. Calculate the power level of the grid to reveal the suspect's escape route.

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

Diagram illustrating memory blocks and their values. The top row shows 15 blocks with values: 128, 196, 27, 9, 256, 243, 243, 289, 256, 125, 8, 216, 27, 216, 128, 196, 27, 256, 343. The bottom row shows 15 blocks with values: 343, 256, 144, 196, 128, 196, 289, 125, 25, 128, 169, 216, 128, 27, 27, 343. In both rows, the 15th block (value 128) is highlighted with an orange background and a red 'T'.

$$2^7 = \boxed{} \rightarrow \boxed{\text{T}}$$

$$2^3 = \boxed{} \rightarrow \boxed{\text{U}}$$

$3^3 = \boxed{} \rightarrow \boxed{\text{E}}$

$$13^2 = \boxed{} \rightarrow \boxed{0}$$

$$14^2 = \boxed{} \rightarrow \boxed{\text{H}}$$

$$6^3 = \boxed{} \rightarrow \boxed{\text{S}}$$

$$7^3 = \boxed{} \rightarrow \boxed{\mathbf{R}}$$

$$2^8 = \boxed{} \rightarrow \boxed{1}$$

$$3^2 = \boxed{} \rightarrow \boxed{\mathbf{V}}$$

$$3^5 = \boxed{} \rightarrow \boxed{\text{L}}$$

$$12^2 = \boxed{} \rightarrow \boxed{\mathbf{G}}$$

$$5^3 = \boxed{} \rightarrow \boxed{\text{N}}$$

$$17^2 = \boxed{} \rightarrow \boxed{\text{A}}$$

$$5^2 = \boxed{} \rightarrow \boxed{\mathbf{D}}$$

Scratch space:

CLUE 3
Order of operations

We found a scrambled flight log with multiple steps. Solve the equation in the exact order to unlock the encrypted data.

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

P		P	P														
20	23	20	20	23	29	56	7	24	75	69	17	17	61	7	23	21	
56	9	18	23	75	19	23	29	17	45	49	23	21	24	23	23	37	23

$8 + 3 \times 4 = \square \rightarrow \text{P}$

$53 + 8 \times 2 = \square \rightarrow \text{C}$

$5 + 2 \times 9 = \square \rightarrow \text{E}$

$12 \times 2 - 3 = \square \rightarrow \text{S}$

$3 \times 10 - 6 = \square \rightarrow \text{N}$

$7 \times 11 - 16 = \square \rightarrow \text{K}$

$7 \times 3 - 14 = \square \rightarrow \text{I}$

$3 \times 8 - 5 = \square \rightarrow \text{H}$

$27 + 9 \times 2 = \square \rightarrow \text{G}$

$8 \times 12 - 21 = \square \rightarrow \text{T}$

$3 \times 7 - 3 = \square \rightarrow \text{D}$

$11 \times 7 - 28 = \square \rightarrow \text{U}$

$10 \times 2 - 11 = \square \rightarrow \text{A}$

$7 \times 5 - 18 = \square \rightarrow \text{O}$

$10 \times 7 - 14 = \square \rightarrow \text{M}$

$25 + 6 \times 2 = \square \rightarrow \text{Z}$

$17 + 3 \times 4 = \square \rightarrow \text{R}$

Scratch space:

CLUE 4
Multiplication facts (1-12)

The cargo hold contains several identical rows of supply crates. Multiply the rows by the columns to count the total stolen loot.

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

A														
81	9	88	8	30	4	22	56	84	70	60	50	56	100	30
										A			A	
88	96	84	110	96	3	84	96	49	3	81	9	60	50	81

$9 \times 9 = \square \rightarrow \text{A}$

$6 \times 10 = \square \rightarrow \text{C}$

$1 \times 9 = \square \rightarrow \text{S}$

$8 \times 1 = \square \rightarrow \text{I}$

$11 \times 2 = \square \rightarrow \text{G}$

$7 \times 12 = \square \rightarrow \text{L}$

$10 \times 10 = \square \rightarrow \text{W}$

$7 \times 8 = \square \rightarrow \text{O}$

$4 \times 1 = \square \rightarrow \text{Y}$

$10 \times 5 = \square \rightarrow \text{R}$

$10 \times 11 = \square \rightarrow \text{M}$

$11 \times 8 = \square \rightarrow \text{H}$

$3 \times 10 = \square \rightarrow \text{N}$

$7 \times 7 = \square \rightarrow \text{F}$

$1 \times 3 = \square \rightarrow \text{T}$

$8 \times 12 = \square \rightarrow \text{E}$

$10 \times 7 = \square \rightarrow \text{D}$

Scratch space:

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

The crew needs to divide the remaining sky-fuel canisters equally among the patrol ships so we can begin the final chase.

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:

$5 \div 1 = \boxed{}$

$56 \div 8 = \boxed{}$

$8 \div 1 = \boxed{}$

$72 \div 8 = \boxed{}$

$14 \div 7 = \boxed{}$

$18 \div 3 = \boxed{}$

$7 \div 7 = \boxed{}$

$144 \div 12 = \boxed{}$

$50 \div 5 = \boxed{}$

$24 \div 6 = \boxed{}$

$88 \div 8 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain vanished in a thick fog, then checked the direction of the wind.
2. The villain swung through the vault window, then startled the sky-gulls.
3. The villain soared past the watchtower, then spotted the escape route.
4. The villain blasted through the skylight, then spotted the escape route.
5. The villain vanished in a thick fog, then lit up the dark map room.
6. The villain swung through the vault window, then checked the direction of the wind.
7. The villain swung through the vault window, then lit up the dark map room.
8. The villain stepped through a magic doorway, then blinded the guard dog with a laser.
9. The villain blasted through the skylight, then startled the sky-gulls.
10. The villain soared past the watchtower, then blinded the guard dog with a laser.
11. The villain vanished in a thick fog, then startled the sky-gulls.
12. The villain vanished in a thick fog, then spotted the escape route.

Answer Key

The Sky-Shard Heist

Culprit: Gale Windrunner

Glider wings · Spyglass lens · Right-handed steerer · Gold crown helmet · Sneeze at peppermint

Trail: Start 21 → Clue 1 17 → Clue 2 9 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Percentages): "THE SCAMP DOES NOT WEAR A COMPASS WATCH"

40% of 85 = 34 (T) · 5% of 640 = 32 (W) · 50% of 76 = 38 (R) · 20% of 220 = 44 (A) · 10% of 160 = 16 (N) · 5% of 740 = 37 (O) · 5% of 700 = 35 (C) · 5% of 260 = 13 (M) · 50% of 46 = 23 (P) · 20% of 110 = 22 (E) · 60% of 35 = 21 (S) · 5% of 620 = 31 (H) · 20% of 50 = 10 (D)

Clue 2 (Exponents): "THE VILLAIN USES THEIR RIGHT HAND TO STEER"

$2^7 = 128$ (T) · $2^3 = 8$ (U) · $3^3 = 27$ (E) · $13^2 = 169$ (O) · $14^2 = 196$ (H) · $6^3 = 216$ (S) · $7^3 = 343$ (R) · $2^8 = 256$ (I) · $3^2 = 9$ (V) · $3^5 = 243$ (L) · $12^2 = 144$ (G) · $5^3 = 125$ (N) · $17^2 = 289$ (A) · $5^2 = 25$ (D)

Clue 3 (Order of operations): "PEPPERMINT COOKIES MADE THE ROGUE SNEEZE"

$8 + 3 \times 4 = 20$ (P) · $53 + 8 \times 2 = 69$ (C) · $5 + 2 \times 9 = 23$ (E) · $12 \times 2 - 3 = 21$ (S) · $3 \times 10 - 6 = 24$ (N) · $7 \times 11 - 16 = 61$ (K) · $7 \times 3 - 14 = 7$ (I) · $3 \times 8 - 5 = 19$ (H) · $27 + 9 \times 2 = 45$ (G) · $8 \times 12 - 21 = 75$ (T) · $3 \times 7 - 3 = 18$ (D) · $11 \times 7 - 28 = 49$ (U) · $10 \times 2 - 11 = 9$ (A) · $7 \times 5 - 18 = 17$ (O) · $10 \times 7 - 14 = 56$ (M) · $25 + 6 \times 2 = 37$ (Z) · $17 + 3 \times 4 = 29$ (R)

Clue 4 (Multiplication facts (1-12)): "A SHINY GOLD CROWN HELMET LEFT A SCRATCH"

$9 \times 9 = 81$ (A) · $6 \times 10 = 60$ (C) · $1 \times 9 = 9$ (S) · $8 \times 1 = 8$ (I) · $11 \times 2 = 22$ (G) · $7 \times 12 = 84$ (L) · $10 \times 10 = 100$ (W) · $7 \times 8 = 56$ (O) · $4 \times 1 = 4$ (Y) · $10 \times 5 = 50$ (R) · $10 \times 11 = 110$ (M) · $11 \times 8 = 88$ (H) · $3 \times 10 = 30$ (N) · $7 \times 7 = 49$ (F) · $1 \times 3 = 3$ (T) · $8 \times 12 = 96$ (E) · $10 \times 7 = 70$ (D)

Clue 5 (Division facts (1-12)): surviving statement is box 3 → Gale Windrunner

$5 \div 1 = 5$ · $56 \div 8 = 7$ · $8 \div 1 = 8$ · $72 \div 8 = 9$ · $14 \div 7 = 2$ · $18 \div 3 = 6$ · $7 \div 7 = 1$ · $144 \div 12 = 12$ · $50 \div 5 = 10$ · $24 \div 6 = 4$ · $88 \div 8 = 11$