



The Balloon Expedition Mystery

Grade 5 math · Fractions of a number, Order of operations, Multiplication, Rounding, Division · Reading level grades 5-6

Detective: _____ Date: _____

The legendary Golden Compass of Altia has been stolen right out of the flagship hot-air balloon! The thief left behind a trail of strange gadgets and mysterious footprints across the floating islands.

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	PRIMARY GEAR	SURVIVAL SKILL	HANDEDNESS	HAIR COLOR	MAJOR FEAR
Sally Ride	Grappling Hook	Map Reading	Left Handed	Fiery Red	Fear of Noise
Jane Goodall	Glider Wings	Rope Knotting	Left Handed	Sun Yellow	Fear of Dark
Steve Irwin	Rocket Boots	Camp Cooking	Right Handed	Fiery Red	Fear of Water
Robin Hood	Laser Pointer	Animal Calling	Right Handed	Fiery Red	Fear of Noise
Lara Croft	Grappling Hook	Camp Cooking	Left Handed	Ink Black	Fear of Noise
Sacagawea	Pocket Radar	Camp Cooking	Right Handed	Ink Black	Fear of Noise
Marco Polo	Pocket Radar	Rope Knotting	Right Handed	Ink Black	Fear of Dark
Hardy Boy	Pocket Radar	Rope Knotting	Right Handed	Ink Black	Fear of Water
Buzz Aldrin	Rocket Boots	Animal Calling	Right Handed	Fiery Red	Fear of Noise
Amelia Earhart	Grappling Hook	Map Reading	Right Handed	Fiery Red	Fear of Noise
Jim Hawkins	Grappling Hook	Rope Knotting	Left Handed	Sun Yellow	Fear of Water
Allan Quatermain	Grappling Hook	Animal Calling	Left Handed	Ink Black	Fear of Water
Sherlock Holmes	Grappling Hook	Animal Calling	Left Handed	Sun Yellow	Fear of Dark
Charles Darwin	Laser Pointer	Deep Diving	Right Handed	Fiery Red	Fear of Water
Indiana Jones	Pocket Radar	Deep Diving	Right Handed	Fiery Red	Fear of Dark
Peter Pan	Grappling Hook	Deep Diving	Left Handed	Sun Yellow	Fear of Water
Huckleberry Finn	Pocket Radar	Rope Knotting	Right Handed	Fiery Red	Fear of Noise
Nellie Bly	Glider Wings	Camp Cooking	Right Handed	Fiery Red	Fear of Noise
Tom Sawyer	Rocket Boots	Rope Knotting	Left Handed	Ink Black	Fear of Dark
Doctor Watson	Laser Pointer	Map Reading	Right Handed	Ink Black	Fear of Noise
Nancy Drew	Grappling Hook	Animal Calling	Right Handed	Ink Black	Fear of Water

CLUE 1
Fractions of a number

The crew found a torn piece of the thief's escape map. To figure out how much territory is left to search, we must calculate the fractional part of the total area marked on this map segment.

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

T			T											T				
35	23	12	35	23	22	12	20	8	15	12	31	39	15	35	11	39	15	21
							T	T										
29	15	18	12	11	39	15	35	35	22	39	6							

$2/6 \text{ of } 105 = \square \rightarrow \text{T}$

$2/6 \text{ of } 87 = \square \rightarrow \text{R}$

$4/8 \text{ of } 24 = \square \rightarrow \text{E}$

$2/8 \text{ of } 32 = \square \rightarrow \text{D}$

$1/2 \text{ of } 62 = \square \rightarrow \text{S}$

$2/8 \text{ of } 72 = \square \rightarrow \text{P}$

$7/8 \text{ of } 24 = \square \rightarrow \text{W}$

$5/10 \text{ of } 22 = \square \rightarrow \text{K}$

$1/3 \text{ of } 117 = \square \rightarrow \text{N}$

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

$1/5 \text{ of } 110 = \square \rightarrow \text{I}$

$5/8 \text{ of } 24 = \square \rightarrow \text{O}$

$2/3 \text{ of } 30 = \square \rightarrow \text{F}$

$1/6 \text{ of } 138 = \square \rightarrow \text{H}$

Scratch space:

Order of operations

The ancient temple door has a strange multi-step locking mechanism. To solve the combination and peek inside, we must calculate the exact sequence using the strict order of operations.

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

13 6 78 72 74 72 35 78 75 13 39 25 52 13 78 72 39 52 13 6

13 6 78 52 25 25 52 66 6 13 6 42 7 56

$$7 + 3 \times 2 = \boxed{} \rightarrow \boxed{\text{T}}$$

$$9 \times 7 - 24 = \boxed{} \rightarrow \boxed{\mathbf{W}}$$

$$11 \times 8 - 10 = \boxed{} \rightarrow \boxed{\text{E}}$$

$$2 \times 6 - 5 = \boxed{} \rightarrow \boxed{\text{N}}$$

$$10 \times 10 - 26 = \boxed{} \rightarrow \boxed{\text{U}}$$

$7 \times 12 - 9 = \boxed{} \rightarrow \boxed{\text{C}}$

$36 + 6 \times 5 = \boxed{} \rightarrow \boxed{\text{G}}$

$$25 + 9 \times 3 = \boxed{} \rightarrow \boxed{\text{I}}$$

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

$$2 \times 12 - 18 = \boxed{} \rightarrow \boxed{\text{H}}$$

$$15 + 5 \times 2 = \boxed{} \rightarrow \boxed{\text{R}}$$

$$8 \times 10^{-8} = \boxed{} \rightarrow \boxed{\text{S}}$$

$$28 + 2 \times 7 = \boxed{} \rightarrow \boxed{\mathbf{A}}$$

$$16 + 5 \times 8 = \boxed{} \rightarrow \boxed{\text{D}}$$

Scratch space:

Multiplication facts (1-12)

We discovered rows of identical gear teeth on the villain's dropped gadget. By counting the total number of gears and multiplying the teeth per gear, we can decode the signal.

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

The diagram shows two rows of boxes, each representing a sequence of numbers. The top row has 18 boxes, and the bottom row has 12 boxes. Some boxes are shaded orange and contain the letter 'T'.

Top Row:

- Box 1: Shaded orange, contains 'T'. Below it is the number 66.
- Box 2: Below it is the number 30.
- Box 3: Below it is the number 5.
- Box 4: Below it is the number 2.
- Box 5: Below it is the number 50.
- Box 6: Below it is the number 21.
- Box 7: Below it is the number 21.
- Box 8: Below it is the number 100.
- Box 9: Below it is the number 50.
- Box 10: Below it is the number 120.
- Box 11: Below it is the number 63.
- Box 12: Below it is the number 30.
- Box 13: Below it is the number 50.
- Box 14: Below it is the number 2.
- Box 15: Below it is the number 5.
- Box 16: Below it is the number 121.
- Box 17: Below it is the number 5.
- Box 18: Below it is the number 54.

Bottom Row:

- Box 1: Shaded orange, contains 'T'. Below it is the number 66.
- Box 2: Below it is the number 30.
- Box 3: Below it is the number 5.
- Box 4: Below it is the number 21.
- Box 5: Below it is the number 77.
- Box 6: Below it is the number 110.
- Box 7: Below it is the number 54.
- Box 8: Shaded orange, contains 'T'. Below it is the number 66.
- Box 9: Below it is the number 30.
- Box 10: Below it is the number 110.
- Box 11: Below it is the number 120.
- Box 12: Below it is the number 54.
- Box 13: Below it is the number 5.
- Box 14: Below it is the number 121.

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

$11 \times 10 = \boxed{} \rightarrow \boxed{\mathbf{U}}$

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

$3 \times 10 = \boxed{} \rightarrow \boxed{\text{H}}$

$10 \times 5 = \boxed{} \rightarrow \boxed{I}$

$12 \times 10 = \boxed{} \rightarrow \boxed{\mathbf{N}}$

$$2 \times 1 = \boxed{} \rightarrow \boxed{\mathbf{v}}$$

$$7 \times 11 = \boxed{} \rightarrow \boxed{0}$$

$6 \times 9 = \square \rightarrow \boxed{\mathbf{D}}$

$$11 \times 11 = \boxed{} \rightarrow \boxed{\text{R}}$$

$5 \times 1 = \boxed{} \rightarrow \boxed{\text{E}}$

$$3 \times 7 = \boxed{} \rightarrow \boxed{\text{L}}$$

$10 \times 10 = \boxed{} \rightarrow \boxed{\text{A}}$

Scratch space:

CLUE 4 Rounding

The runaway hot-air balloon's altimeter is glitching and only displays rounded numbers. We need to round our current altitude to the nearest hundred to match their radar signal.

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

W															
230	50	3000	110	1300	200	7000	20	90	290	3700	200	7000	20	110	3000

3000	2300	50	290	300	290	50	7000	1700	3700	2300	290

Round 234 to the nearest ten → **W**

Round 53 to the nearest ten → **E**

Round 1,670 to the nearest hundred → **H**

Round 1,311 to the nearest hundred → **U**

Round 23 to the nearest ten → **S**

Round 3,661 to the nearest hundred → **A**

Round 286 to the nearest ten → **R**

Round 2,748 to the nearest thousand → **F**

Round 2,271 to the nearest hundred → **I**

Round 109 to the nearest ten → **O**

Round 152 to the nearest hundred → **N**

Round 268 to the nearest hundred → **Y**

Round 91 to the nearest ten → **T**

Round 6,654 to the nearest thousand → **D**

Scratch space:

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

To divide our rescue supplies evenly among the search parties, we must split the remaining rations. Calculating this division will reveal the final clue's location.

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:

$1 \div 1 = \boxed{}$

$40 \div 5 = \boxed{}$

$77 \div 7 = \boxed{}$

$70 \div 7 = \boxed{}$

$60 \div 5 = \boxed{}$

$7 \div 1 = \boxed{}$

$60 \div 10 = \boxed{}$

$15 \div 3 = \boxed{}$

$30 \div 10 = \boxed{}$

$12 \div 6 = \boxed{}$

$20 \div 5 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain flashed a bright green beam, then called a flock of parrots for help.
2. The villain flashed a bright green beam, then plotted a course out of the ruins.
3. The villain checked their digital screen, then plotted a course out of the ruins.
4. The villain blasted high into the canopy, then swam through the crocodile swamp.
5. The villain flashed a bright green beam, then cooked up some mystery stew.
6. The villain flashed a bright green beam, then tied up the guards with thick ropes.
7. The villain blasted high into the canopy, then tied up the guards with thick ropes.
8. The villain glided silently off the cliff, then cooked up some mystery stew.
9. The villain blasted high into the canopy, then called a flock of parrots for help.
10. The villain blasted high into the canopy, then plotted a course out of the ruins.
11. The villain swung from a jungle vine, then plotted a course out of the ruins.
12. The villain checked their digital screen, then swam through the crocodile swamp.

Answer Key

The Balloon Expedition Mystery

Culprit: Buzz Aldrin

Rocket Boots · Animal Calling · Right Handed · Fiery Red · Fear of Noise

Trail: Start 21 → Clue 1 15 → Clue 2 10 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Fractions of a number): "THE THIEF DOES NOT KNOW ROPE KNOTTING"

$\frac{2}{6}$ of 105 = 35 (T) · $\frac{2}{6}$ of 87 = 29 (R) · $\frac{4}{8}$ of 24 = 12 (E) · $\frac{2}{8}$ of 32 = 8 (D) · $\frac{1}{2}$ of 62 = 31 (S) · $\frac{2}{8}$ of 72 = 18 (P) · $\frac{7}{8}$ of 24 = 21 (W) · $\frac{5}{10}$ of 22 = 11 (K) · $\frac{1}{3}$ of 117 = 39 (N) · $\frac{6}{10}$ of 10 = 6 (G) · $\frac{1}{5}$ of 110 = 22 (I) · $\frac{5}{8}$ of 24 = 15 (O) · $\frac{2}{3}$ of 30 = 20 (F) · $\frac{1}{6}$ of 138 = 23 (H)

Clue 2 (Order of operations): "THE SUSPECT WRITES WITH THEIR RIGHT HAND"

$7 + 3 \times 2 = 13$ (T) · $9 \times 7 - 24 = 39$ (W) · $11 \times 8 - 10 = 78$ (E) · $2 \times 6 - 5 = 7$ (N) · $10 \times 10 - 26 = 74$ (U) · $7 \times 12 - 9 = 75$ (C) · $36 + 6 \times 5 = 66$ (G) · $25 + 9 \times 3 = 52$ (I) · $3 + 8 \times 4 = 35$ (P) · $2 \times 12 - 18 = 6$ (H) · $15 + 5 \times 2 = 25$ (R) · $8 \times 10 - 8 = 72$ (S) · $28 + 2 \times 7 = 42$ (A) · $16 + 5 \times 8 = 56$ (D)

Clue 3 (Multiplication facts (1-12)): "THE VILLAIN SHIVERED AT THE LOUD THUNDER"

$11 \times 6 = 66$ (T) · $11 \times 10 = 110$ (U) · $7 \times 9 = 63$ (S) · $3 \times 10 = 30$ (H) · $10 \times 5 = 50$ (I) · $12 \times 10 = 120$ (N) · $2 \times 1 = 2$ (V) · $7 \times 11 = 77$ (O) · $6 \times 9 = 54$ (D) · $11 \times 11 = 121$ (R) · $5 \times 1 = 5$ (E) · $3 \times 7 = 21$ (L) · $10 \times 10 = 100$ (A)

Clue 4 (Rounding): "WE FOUND STRANDS OF FIERY RED HAIR"

Round 234 to the nearest ten = 230 (W) · Round 53 to the nearest ten = 50 (E) · Round 1,670 to the nearest hundred = 1700 (H) · Round 1,311 to the nearest hundred = 1300 (U) · Round 23 to the nearest ten = 20 (S) · Round 3,661 to the nearest hundred = 3700 (A) · Round 286 to the nearest ten = 290 (R) · Round 2,748 to the nearest thousand = 3000 (F) · Round 2,271 to the nearest hundred = 2300 (I) · Round 109 to the nearest ten = 110 (O) · Round 152 to the nearest hundred = 200 (N) · Round 268 to the nearest hundred = 300 (Y) · Round 91 to the nearest ten = 90 (T) · Round 6,654 to the nearest thousand = 7000 (D)

Clue 5 (Division facts (1-12)): surviving statement is box 9 → Buzz Aldrin

$1 \div 1 = 1$ · $40 \div 5 = 8$ · $77 \div 7 = 11$ · $70 \div 7 = 10$ · $60 \div 5 = 12$ · $7 \div 1 = 7$ · $60 \div 10 = 6$ · $15 \div 3 = 5$ · $30 \div 10 = 3$ · $12 \div 6 = 2$ · $20 \div 5 = 4$