



The Lost Astrolabe of Skylandia

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

Detective: _____ **Date:** _____

The ancient Golden Astrolabe has been stolen from the Grand Library of Skylandia! A rogue captain slipped through the clouds, bypassed the clockwork security, and fled into the sky. You, the lead Sky-Detective, must track them down.

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 Captain is _____

Possible suspects

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

NAME	SPECIALTY TOOL	INVENTION	SUSPECT'S GEAR	HAIR COLOR	SUSPECT'S FLAW
Xavier Frost	decoder-ring champion	decoy balloon	wearing a leather scarf	dusty brown hair	distracted by shiny coins
Hudson Hawk	lock-pick genius	decoy balloon	wearing a leather scarf	dusty brown hair	allergic to cloud-lilies
Jasper Flint	glider-suit master	double-jump boots	wearing a leather scarf	jet black hair	allergic to cloud-lilies
Sabin Drake	grappling-hook expert	double-jump boots	wearing a leather scarf	bright red hair	allergic to cloud-lilies
Zelda Smith	decoder-ring champion	cloud-camouflage suit	wearing brass goggles	bright red hair	allergic to cloud-lilies
Flynn Ryder	smoke-bomb specialist	cloud-camouflage suit	wearing a leather scarf	dusty brown hair	afraid of heights
Victor Sullivan	glider-suit master	pocket compass	wearing a leather scarf	bright red hair	allergic to cloud-lilies
Penelope Cruz	lock-pick genius	cloud-camouflage suit	wearing brass goggles	dusty brown hair	allergic to cloud-lilies
Tessa Croft	glider-suit master	cloud-camouflage suit	wearing brass goggles	bright red hair	allergic to cloud-lilies
Wyatt Earp	smoke-bomb specialist	pocket compass	wearing a leather scarf	dusty brown hair	allergic to cloud-lilies
Luna Sterling	glider-suit master	pocket compass	wearing brass goggles	dusty brown hair	distracted by shiny coins
Quincy Morris	grappling-hook expert	double-jump boots	wearing a leather scarf	dusty brown hair	allergic to cloud-lilies
Clara Barton	smoke-bomb specialist	double-jump boots	wearing a leather scarf	jet black hair	allergic to cloud-lilies
Gemma Stone	smoke-bomb specialist	magnetic gloves	wearing a leather scarf	dusty brown hair	allergic to cloud-lilies
Barnaby Jones	lock-pick genius	magnetic gloves	wearing brass goggles	dusty brown hair	distracted by shiny coins
Marcus Brody	lock-pick genius	double-jump boots	wearing brass goggles	dusty brown hair	distracted by shiny coins
Orville Wright	grappling-hook expert	decoy balloon	wearing brass goggles	jet black hair	distracted by shiny coins
Kit Carson	grappling-hook expert	pocket compass	wearing a leather scarf	dusty brown hair	allergic to cloud-lilies
Nellie Bly	lock-pick genius	decoy balloon	wearing brass goggles	dusty brown hair	afraid of heights
Drake Vance	decoder-ring champion	pocket compass	wearing a leather scarf	dusty brown hair	distracted by shiny coins
Ruby Roundhouse	decoder-ring champion	cloud-camouflage suit	wearing a leather scarf	dusty brown hair	afraid of heights

CLUE 1

We found a scattered logbook. Adding up the torn-out pages gives us a starting point to track our suspect's flight path.

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



 4626 9743 4859 7206 9382 7206 8238 4859 6272 4626 3084 7919 4859 7206 8191 7919 4626



 9382 7206 4859 3575 3084 4859 6272 7919 5313 8443 3575 7492 7492 7919 7919 8191

$$2525 + 2101 = \boxed{} \rightarrow \boxed{\mathbf{T}}$$

$$2612 + 3660 = \boxed{} \rightarrow \boxed{\text{C}}$$

$$4486 + 3433 = \boxed{} \rightarrow \boxed{0}$$

$$2884 + 5559 = \boxed{} \rightarrow \boxed{\mathbf{B}}$$

$$6265 + 3117 = \boxed{} \rightarrow \boxed{\text{U}}$$

$$5328 + 2863 = \boxed{} \rightarrow \boxed{\text{N}}$$

$$4264 + 5479 = \boxed{} \rightarrow \boxed{\text{H}}$$

$3255 + 1604 = \boxed{} \rightarrow \boxed{\text{E}}$

$$2585 + 4907 = \boxed{} \rightarrow \boxed{\text{L}}$$

$$3027 + 4179 = \boxed{} \rightarrow \boxed{\text{S}}$$

$$2604 + 2709 = \boxed{} \rightarrow \boxed{\mathbf{Y}}$$

$$2091 + 993 = \boxed{} \rightarrow \boxed{\mathbf{D}}$$

$$4314 + 3924 = \boxed{} \rightarrow \boxed{\text{P}}$$

$$2077 + 1498 = \boxed{} \rightarrow \boxed{\text{A}}$$

Scratch space:

CLUE 2 Subtraction

The runaway airship is dropping ballast weight to climb higher. Subtracting the discarded iron crates reveals their current engine strain.

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

S																S					
2141	3846	3877	6478	6478	8980	1401	6478	3877	5319	7310	3600	3877	4803	2141	8297	5319	4803	1401			
8220	3538	7310	3600	3877	8297	5319	1444	8220	3538												

$$3019 - 878 = \boxed{} \rightarrow \boxed{\text{S}}$$

$$8588 - 3269 = \boxed{} \rightarrow \boxed{\text{A}}$$

$$5104 - 1566 = \boxed{} \rightarrow \boxed{\text{N}}$$

$$4568 - 3124 = \boxed{} \rightarrow \boxed{\text{B}}$$

$$8423 - 3620 = \boxed{} \rightarrow \boxed{\text{R}}$$

$$13162 - 4865 = \boxed{} \rightarrow \boxed{\text{C}}$$

$$13014 - 4794 = \boxed{} \rightarrow \boxed{\text{I}}$$

$$1545 - 144 = \boxed{} \rightarrow \boxed{\text{F}}$$

$$12098 - 4788 = \boxed{} \rightarrow \boxed{\text{T}}$$

$$8595 - 4749 = \boxed{} \rightarrow \boxed{\text{M}}$$

$$7063 - 3186 = \boxed{} \rightarrow \boxed{\text{E}}$$

$$8268 - 1790 = \boxed{} \rightarrow \boxed{\text{L}}$$

$$9410 - 430 = \boxed{} \rightarrow \boxed{\text{O}}$$

$$6494 - 2894 = \boxed{} \rightarrow \boxed{\text{H}}$$

Scratch space:

CLUE 3
Multiplication facts (1-12)

To decode the vault's secondary lock, we must multiply the rows of spinning brass gear teeth inside the control panel.

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

T																
66	27	81	30	24	88	88	42	24	45	120	45	81	81	63	81	48
				T												
45	81	42	77	66	27	81	55	88	96	12	81	77	120			

$11 \times 6 = \square \rightarrow$ T	$3 \times 10 = \square \rightarrow$ V	$1 \times 12 = \square \rightarrow$ W
$10 \times 12 = \square \rightarrow$ S	$9 \times 9 = \square \rightarrow$ E	$7 \times 6 = \square \rightarrow$ A
$11 \times 5 = \square \rightarrow$ F	$3 \times 9 = \square \rightarrow$ H	$9 \times 7 = \square \rightarrow$ Z
$4 \times 12 = \square \rightarrow$ D	$8 \times 11 = \square \rightarrow$ L	$8 \times 12 = \square \rightarrow$ O
$5 \times 9 = \square \rightarrow$ N	$3 \times 8 = \square \rightarrow$ I	$11 \times 7 = \square \rightarrow$ R

Scratch space:

CLUE 4 Rounding

Our long-range radar is fuzzy due to the cloud storm. Rounding the scrambled static signals to the nearest hundred pinpoints the suspect's location.

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

F																			
900	90	700	20	430	430	700	230	370	4300	1300	110	90	500	20	30	3000	50	110	
90	20	370	30	1700	30	1700	3700	2000											

Round 894 to the nearest hundred → **F**

Round 1,741 to the nearest hundred → **E**

Round 2,654 to the nearest thousand → **A**

Round 433 to the nearest ten → **D**

Round 109 to the nearest ten → **R**

Round 27 to the nearest ten → **H**

Round 4,297 to the nearest hundred → **Y**

Round 454 to the nearest hundred → **W**

Round 92 to the nearest ten → **O**

Round 2,404 to the nearest thousand → **M**

Round 716 to the nearest hundred → **U**

Round 20 to the nearest ten → **N**

Round 231 to the nearest ten → **S**

Round 1,331 to the nearest hundred → **B**

Round 46 to the nearest ten → **I**

Round 3,688 to the nearest hundred → **L**

Round 373 to the nearest ten → **T**

Scratch space:

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

The crew must share the remaining sky-fuel canisters equally among the chase ships. Dividing the canisters shows us how far our fleet can go.

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:

$2 \div 1 = \boxed{}$

$64 \div 8 = \boxed{}$

$6 \div 2 = \boxed{}$

$4 \div 4 = \boxed{}$

$33 \div 3 = \boxed{}$

$20 \div 2 = \boxed{}$

$45 \div 9 = \boxed{}$

$90 \div 10 = \boxed{}$

$84 \div 12 = \boxed{}$

$36 \div 3 = \boxed{}$

$48 \div 8 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain unlocked the secure display case, then escaped in a steam-powered glider.
2. The villain sneaked past the clockwork guards, then fled into the thick fog.
3. The villain swung across the sky-dock, then dropped down a secret trapdoor.
4. The villain swung across the sky-dock, then zipped away on a sky-line.
5. The villain soared through the clouds, then fled into the thick fog.
6. The villain unlocked the secure display case, then dropped down a secret trapdoor.
7. The villain unlocked the secure display case, then fled into the thick fog.
8. The villain sneaked past the clockwork guards, then zipped away on a sky-line.
9. The villain sneaked past the clockwork guards, then slipped into the cargo hold.
10. The villain decoded the vault door locks, then dropped down a secret trapdoor.
11. The villain sneaked past the clockwork guards, then dropped down a secret trapdoor.
12. The villain decoded the vault door locks, then escaped in a steam-powered glider.

Answer Key

The Lost Astrolabe of Skylandia

Culprit: Kit Carson

grappling-hook expert · pocket compass · wearing a leather scarf · dusty brown hair · allergic to cloud-lilies

Trail: Start 21 → Clue 1 17 → Clue 2 11 → Clue 3 8 → Clue 4 4 → Clue 5 1

Clue 1 (Addition): "THE SUSPECT DOES NOT USE A DECOY BALLOON"

$2525 + 2101 = 4626$ (T) · $2612 + 3660 = 6272$ (C) · $4486 + 3433 = 7919$ (O) · $2884 + 5559 = 8443$ (B) · $6265 + 3117 = 9382$ (U) · $5328 + 2863 = 8191$ (N) · $4264 + 5479 = 9743$ (H) · $3255 + 1604 = 4859$ (E) · $2585 + 4907 = 7492$ (L) · $3027 + 4179 = 7206$ (S) · $2604 + 2709 = 5313$ (Y) · $2091 + 993 = 3084$ (D) · $4314 + 3924 = 8238$ (P) · $2077 + 1498 = 3575$ (A)

Clue 2 (Subtraction): "SMELL OF LEATHER SCARF IN THE CABIN"

$3019 - 878 = 2141$ (S) · $8588 - 3269 = 5319$ (A) · $5104 - 1566 = 3538$ (N) · $4568 - 3124 = 1444$ (B) · $8423 - 3620 = 4803$ (R) · $13162 - 4865 = 8297$ (C) · $13014 - 4794 = 8220$ (I) · $1545 - 144 = 1401$ (F) · $12098 - 4788 = 7310$ (T) · $8595 - 4749 = 3846$ (M) · $7063 - 3186 = 3877$ (E) · $8268 - 1790 = 6478$ (L) · $9410 - 430 = 8980$ (O) · $6494 - 2894 = 3600$ (H)

Clue 3 (Multiplication facts (1-12)): "THE VILLAIN SNEEZED NEAR THE FLOWERS"

$11 \times 6 = 66$ (T) · $3 \times 10 = 30$ (V) · $1 \times 12 = 12$ (W) · $10 \times 12 = 120$ (S) · $9 \times 9 = 81$ (E) · $7 \times 6 = 42$ (A) · $11 \times 5 = 55$ (F) · $3 \times 9 = 27$ (H) · $9 \times 7 = 63$ (Z) · $4 \times 12 = 48$ (D) · $8 \times 11 = 88$ (L) · $8 \times 12 = 96$ (O) · $5 \times 9 = 45$ (N) · $3 \times 8 = 24$ (I) · $11 \times 7 = 77$ (R)

Clue 4 (Rounding): "FOUND DUSTY BROWN HAIR ON THE HELM"

Round 894 to the nearest hundred = 900 (F) · Round 1,741 to the nearest hundred = 1700 (E) · Round 2,654 to the nearest thousand = 3000 (A) · Round 433 to the nearest ten = 430 (D) · Round 109 to the nearest ten = 110 (R) · Round 27 to the nearest ten = 30 (H) · Round 4,297 to the nearest hundred = 4300 (Y) · Round 454 to the nearest hundred = 500 (W) · Round 92 to the nearest ten = 90 (O) · Round 2,404 to the nearest thousand = 2000 (M) · Round 716 to the nearest hundred = 700 (U) · Round 20 to the nearest ten = 20 (N) · Round 231 to the nearest ten = 230 (S) · Round 1,331 to the nearest hundred = 1300 (B) · Round 46 to the nearest ten = 50 (I) · Round 3,688 to the nearest hundred = 3700 (L) · Round 373 to the nearest ten = 370 (T)

Clue 5 (Division facts (1-12)): surviving statement is box 4 → Kit Carson

$2 \div 1 = 2$ · $64 \div 8 = 8$ · $6 \div 2 = 3$ · $4 \div 4 = 1$ · $33 \div 3 = 11$ · $20 \div 2 = 10$ · $45 \div 9 = 5$ · $90 \div 10 = 9$ · $84 \div 12 = 7$ · $36 \div 3 = 12$ · $48 \div 8 = 6$