



Mystery of the Cloudtop Citadel

Grade 5 math · Multiplication, Word problems, Bar models, Fractions of a number, Division · Reading level grades 3-4

Detective: _____ Date: _____

Someone snuck into the Sky Citadel library and stole the golden cloud map! The Chief Navigator needs your detective skills to solve the clues, track down the culprit, and save the day.

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	MAIN GEAR	EXTRA TOOL	DOMINANT HAND	HAIR STYLE	SECRET WEAKNESS
Cadet Zoe	Glider Wings	Rations Bag	Left Handed	Curly Red	Loud Whistles
Sky Captain Sam	Glider Wings	Rations Bag	Left Handed	Spiky Blonde	Shiny Objects
Captain Drake	Smoke Bombs	Rations Bag	Left Handed	Curly Red	Loud Whistles
Agent Cleo	Smoke Bombs	Map Scroll	Right Handed	Braided Black	Shiny Objects
Scout Toby	Magnetic Boots	Brass Spyglass	Left Handed	Curly Red	Loud Whistles
Navigator Ben	Glider Wings	Brass Spyglass	Left Handed	Curly Red	Sneeze Powder
Racer Zane	Grappling Hook	Map Scroll	Left Handed	Spiky Blonde	Loud Whistles
Captain Milo	Grappling Hook	Map Scroll	Right Handed	Spiky Blonde	Sneeze Powder
Racer Finn	Flash Lantern	Map Scroll	Left Handed	Curly Red	Sneeze Powder
Explorer Iris	Grappling Hook	Rations Bag	Right Handed	Curly Red	Loud Whistles
Ranger Eli	Grappling Hook	Ancient Compass	Left Handed	Braided Black	Shiny Objects
Cadet Luna	Magnetic Boots	Brass Spyglass	Left Handed	Spiky Blonde	Loud Whistles
Pilot Ruby	Smoke Bombs	Rations Bag	Right Handed	Curly Red	Sneeze Powder
Explorer Nina	Smoke Bombs	Map Scroll	Left Handed	Braided Black	Loud Whistles
Engineer Owen	Smoke Bombs	Map Scroll	Left Handed	Curly Red	Loud Whistles
Aviator Ivy	Glider Wings	Map Scroll	Right Handed	Braided Black	Shiny Objects
Commander Nora	Glider Wings	Rations Bag	Right Handed	Spiky Blonde	Loud Whistles
Navigator Luke	Smoke Bombs	Rations Bag	Left Handed	Spiky Blonde	Loud Whistles
Aviator Cora	Flash Lantern	Ancient Compass	Left Handed	Curly Red	Loud Whistles
Officer Jax	Glider Wings	Map Scroll	Left Handed	Curly Red	Sneeze Powder
Tracker Kai	Glider Wings	Ancient Compass	Left Handed	Braided Black	Shiny Objects

Multiplication facts (1-12)

You find supply crates stacked in neat rows on the airship deck. Multiplying the rows gives you the code to unlock the first clue.

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

A number line from 0 to 1000 with boxes for numbers and their prime factors.

Number	Prime Factors
44	2, 11
3	3
81	3, 3, 3, 3
108	2, 2, 3, 3, 3
77	7, 11
7	7
7	7
35	5, 7
77	7, 11
1	
80	2, 2, 2, 2, 5
88	2, 2, 2, 11
81	3, 3, 3, 3
28	2, 2, 7
1	
88	2, 2, 2, 11
44	2, 11

$$4 \times 11 = \boxed{} \rightarrow \boxed{\text{T}}$$

$$8 \times 11 = \boxed{} \rightarrow \boxed{0}$$

$$12 \times 9 = \boxed{} \rightarrow \mathbf{[v]}$$

$7 \times 1 = \boxed{} \rightarrow \boxed{\text{L}}$

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

$7 \times 4 = \square \rightarrow \mathbf{S}$

$$1 \times 4 = \boxed{} \rightarrow \boxed{\mathbf{R}}$$

$1 \times 3 = \square \rightarrow \boxed{\text{H}}$

$5 \times 7 = \boxed{} \rightarrow \boxed{\mathbf{A}}$

$11 \times 7 = \square \rightarrow \boxed{1}$

$8 \times 10 = \boxed{} \rightarrow \boxed{\mathbf{D}}$

$1 \times 1 = \boxed{} \rightarrow \boxed{\mathbf{N}}$

$9 \times 9 = \square \rightarrow \mathbf{E}$

$9 \times 10 = \boxed{} \rightarrow \boxed{\mathbf{Y}}$

$3 \times 2 = \boxed{} \rightarrow \boxed{\text{C}}$

$6 \times 8 = \boxed{} \rightarrow \boxed{\text{P}}$

Scratch space:

CLUE 2

Word problems

The ship keeper leaves a logbook with adventure notes and supply counts. Solving the story problem reveals the next lead.

Solve each problem, then write its letter in the boxes to fill in the missing word.

A witness saw the villain was L D D .

81 62 65 97 84 15 29 62

Navigator lined up 9 rows of 9 lanterns. How many lanterns in all?

Answer: → L

Navigator found 35 lanterns yesterday and 27 more today. How many lanterns in all?

Answer: → E

There were 107 glider packs. 23 were used up. How many glider packs are left?

Answer: → H

There were 104 compasses. 39 were used up. How many compasses are left?

Answer: → F

Navigator found 15 compasses yesterday and 14 more today. How many compasses in all?

Answer: → N

Navigator found 26 lanterns yesterday and 71 more today. How many lanterns in all?

Answer: → T

There were 39 compasses. 24 were used up. How many compasses are left?

Answer: → A

Scratch space:

CLUE 3

Bar model word problems

A bar chart on the command board compares the gear carried by each explorer. Filling in the bars points to the suspect.

Draw a bar model to solve each word problem, then write its letter in the boxes to fill in the missing word.

Someone scared the villain off with L S T L E S .

41 6 107 96 92 94 48 41

Navigator has 164 lanterns, packed 4 to a bag. How many bags can be filled?

draw a bar model

Answer: → L

Navigator shares 184 compasses equally among 2 teams. How many compasses does each team get?

draw a bar model

Answer: → W

The red team has 108 grappling hooks and the blue team has 1 grappling hooks. How many more grappling hooks does the red team have?

draw a bar model

Answer: → U

The red team has 60 map tubes and the blue team has 12 map tubes. How many more map tubes does the red team have?

draw a bar model

Answer: → I

The red team has 118 map tubes and the blue team has 24 map tubes. How many more map tubes does the red team have?

draw a bar model

Answer: → H

Navigator has 3 times as many lanterns as a teammate. The teammate has 2 lanterns. How many lanterns does Navigator have?

draw a bar model

Answer: → O

Navigator has 8 times as many lanterns as a teammate. The teammate has 12 lanterns. How many lanterns does Navigator have?

draw a bar model

Answer: → D

CLUE 4
Fractions of a number

The navigator stored gold tokens in marked sacks. Finding the fraction of the total vault shows where the thief went.

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

A										A				A	
9	20	11	7	8	36	7	19	22	31	9	38	7	30	9	34
					A										
25	15	11	40	22	9	24	24	31	19	34	20	19	40	19	

$9/10 \text{ of } 10 = \square \rightarrow \boxed{\text{A}}$

$4/10 \text{ of } 85 = \square \rightarrow \boxed{\text{S}}$

$2/10 \text{ of } 120 = \square \rightarrow \boxed{\text{T}}$

$2/4 \text{ of } 38 = \square \rightarrow \boxed{\text{E}}$

$2/6 \text{ of } 60 = \square \rightarrow \boxed{\text{C}}$

$4/10 \text{ of } 20 = \square \rightarrow \boxed{\text{L}}$

$2/5 \text{ of } 100 = \square \rightarrow \boxed{\text{N}}$

$2/5 \text{ of } 55 = \square \rightarrow \boxed{\text{D}}$

$1/8 \text{ of } 200 = \square \rightarrow \boxed{\text{F}}$

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

$6/8 \text{ of } 48 = \square \rightarrow \boxed{\text{Y}}$

$2/4 \text{ of } 30 = \square \rightarrow \boxed{\text{O}}$

$1/2 \text{ of } 22 = \square \rightarrow \boxed{\text{U}}$

$1/4 \text{ of } 28 = \square \rightarrow \boxed{\text{R}}$

$1/6 \text{ of } 186 = \square \rightarrow \boxed{\text{H}}$

$1/5 \text{ of } 190 = \square \rightarrow \boxed{\text{I}}$

Scratch space:

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

The crew shares the remaining sky crystals equally into containers. Dividing the total reveals the final secret.

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:

$27 \div 3 = \boxed{}$

$40 \div 10 = \boxed{}$

$66 \div 6 = \boxed{}$

$6 \div 2 = \boxed{}$

$14 \div 7 = \boxed{}$

$50 \div 10 = \boxed{}$

$63 \div 9 = \boxed{}$

$64 \div 8 = \boxed{}$

$70 \div 7 = \boxed{}$

$5 \div 5 = \boxed{}$

$6 \div 1 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain soared over using glider wings, then checked the ancient compass.
2. The villain soared over using glider wings, then spied through the brass spyglass.
3. The villain soared over using glider wings, then scanned the dusty map scroll.
4. The villain blinded the guards with a flash lantern, then checked the ancient compass.
5. The villain swung across with a grappling hook, then scanned the dusty map scroll.
6. The villain walked up walls with magnetic boots, then checked the ancient compass.
7. The villain soared over using glider wings, then tied off a heavy rope coil.
8. The villain blinded the guards with a flash lantern, then tied off a heavy rope coil.
9. The villain vanished behind a smoke bomb, then scanned the dusty map scroll.
10. The villain vanished behind a smoke bomb, then spied through the brass spyglass.
11. The villain vanished behind a smoke bomb, then snacked from a rations bag.
12. The villain soared over using glider wings, then snacked from a rations bag.

Answer Key

Mystery of the Clodtop Citadel

Culprit: Cadet Zoe

Glider Wings · Rations Bag · Left Handed · Curly Red · Loud Whistles

Trail: Start 21 → Clue 1 18 → Clue 2 12 → Clue 3 7 → Clue 4 4 → Clue 5 1

Clue 1 (Multiplication facts (1-12)): "THE VILLAIN DOES NOT CARRY A SPYGLASS"

$4 \times 11 = 44$ (T) · $8 \times 11 = 88$ (O) · $12 \times 9 = 108$ (V) · $7 \times 1 = 7$ (L) · $12 \times 11 = 132$ (G) · $7 \times 4 = 28$ (S) · $1 \times 4 = 4$ (R) · $1 \times 3 = 3$ (H) · $5 \times 7 = 35$ (A) · $11 \times 7 = 77$ (I) · $8 \times 10 = 80$ (D) · $1 \times 1 = 1$ (N) · $9 \times 9 = 81$ (E) · $9 \times 10 = 90$ (Y) · $3 \times 2 = 6$ (C) · $6 \times 8 = 48$ (P)

Clue 2 (Word problems): "LEFT HANDED"

Navigator lined up 9 rows of 9 lanterns. How many lanterns in all? = 81 (L) · Navigator found 35 lanterns yesterday and 27 more today. How many lanterns in all? = 62 (E) · There were 107 glider packs. 23 were used up. How many glider packs are left? = 84 (H) · There were 104 compasses. 39 were used up. How many compasses are left? = 65 (F) · Navigator found 15 compasses yesterday and 14 more today. How many compasses in all? = 29 (N) · Navigator found 26 lanterns yesterday and 71 more today. How many lanterns in all? = 97 (T) · There were 39 compasses. 24 were used up. How many compasses are left? = 15 (A)

Clue 3 (Bar model word problems): "LOUD WHISTLES"

Navigator has 164 lanterns, packed 4 to a bag. How many bags can be filled? = 41 (L) · Navigator shares 184 compasses equally among 2 teams. How many compasses does each team get? = 92 (W) · The red team has 108 grappling hooks and the blue team has 1 grappling hooks. How many more grappling hooks does the red team have? = 107 (U) · The red team has 60 map tubes and the blue team has 12 map tubes. How many more map tubes does the red team have? = 48 (I) · The red team has 118 map tubes and the blue team has 24 map tubes. How many more map tubes does the red team have? = 94 (H) · Navigator has 3 times as many lanterns as a teammate. The teammate has 2 lanterns. How many lanterns does Navigator have? = 6 (O) · Navigator has 8 times as many lanterns as a teammate. The teammate has 12 lanterns. How many lanterns does Navigator have? = 96 (D)

Clue 4 (Fractions of a number): "A CURLY RED HAIR WAS FOUND AT THE SCENE"

$9/10$ of 10 = 9 (A) · $4/10$ of 85 = 34 (S) · $2/10$ of 120 = 24 (T) · $2/4$ of 38 = 19 (E) · $2/6$ of 60 = 20 (C) · $4/10$ of 20 = 8 (L) · $2/5$ of 100 = 40 (N) · $2/5$ of 55 = 22 (D) · $1/8$ of 200 = 25 (F) · $6/8$ of 40 = 30 (W) · $6/8$ of 48 = 36 (Y) · $2/4$ of 30 = 15 (O) · $1/2$ of 22 = 11 (U) · $1/4$ of 28 = 7 (R) · $1/6$ of 186 = 31 (H) · $1/5$ of 190 = 38 (I)

Clue 5 (Division facts (1-12)): surviving statement is box 12 → Cadet Zoe

$27 \div 3 = 9$ · $40 \div 10 = 4$ · $66 \div 6 = 11$ · $6 \div 2 = 3$ · $14 \div 7 = 2$ · $50 \div 10 = 5$ · $63 \div 9 = 7$ · $64 \div 8 = 8$ · $70 \div 7 = 10$ · $5 \div 5 = 1$ · $6 \div 1 = 6$