



The Lost Sky-Scepter

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

Detective: _____ Date: _____

The Grand Cartographer's magical Sky-Scepter has been stolen from the floating library! A rogue Sky Raider snuck past the wind guards. We must follow the clues in the clouds to find the thief before they control the winds forever!

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 Raider is _____

Possible suspects

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

NAME	SKY TOOL	POCKET GADGET	STEERING HAND	HEAD GEAR	SILLY WEAKNESS
Flutter Faye	Robo-Parrot	Solar Compass	Right-Handed Steer	Silver Goggles	Squeaky Toys
Pegleg Polly	Smoke Bomb	Glimmer Lantern	Left-Handed Steer	Bright Orange Hat	Squeaky Toys
Scurvy Sid	Smoke Bomb	Magnetic Gloves	Right-Handed Steer	Silver Goggles	Squeaky Toys
Anchor Annie	Brass Spyglass	Rocket Boots	Right-Handed Steer	Neon Blue Hair	Tickle Feathers
Flapjack Fred	Smoke Bomb	Echo Whistle	Right-Handed Steer	Silver Goggles	Shiny Mirrors
Stormy Sam	Wind Sail	Magnetic Gloves	Right-Handed Steer	Silver Goggles	Shiny Mirrors
Sunny Sal	Wind Sail	Rocket Boots	Right-Handed Steer	Bright Orange Hat	Squeaky Toys
Hurricane Hal	Grappling Hook	Solar Compass	Right-Handed Steer	Neon Blue Hair	Shiny Mirrors
Eddy Ella	Smoke Bomb	Rocket Boots	Right-Handed Steer	Silver Goggles	Shiny Mirrors
Mistral Max	Brass Spyglass	Rocket Boots	Right-Handed Steer	Neon Blue Hair	Shiny Mirrors
Breezy Pip	Grappling Hook	Glimmer Lantern	Left-Handed Steer	Neon Blue Hair	Tickle Feathers
Aero Abby	Wind Sail	Echo Whistle	Left-Handed Steer	Neon Blue Hair	Shiny Mirrors
Gale-Force Gary	Grappling Hook	Echo Whistle	Right-Handed Steer	Bright Orange Hat	Tickle Feathers
Beacon Ben	Brass Spyglass	Magnetic Gloves	Right-Handed Steer	Neon Blue Hair	Shiny Mirrors
Compass Clara	Wind Sail	Glimmer Lantern	Left-Handed Steer	Neon Blue Hair	Tickle Feathers
Captain Barnaby	Smoke Bomb	Solar Compass	Right-Handed Steer	Silver Goggles	Squeaky Toys
Gusto Gus	Wind Sail	Rocket Boots	Left-Handed Steer	Silver Goggles	Shiny Mirrors
Cloud Captain Cal	Robo-Parrot	Glimmer Lantern	Right-Handed Steer	Neon Blue Hair	Shiny Mirrors
Zephyr Zach	Wind Sail	Rocket Boots	Right-Handed Steer	Neon Blue Hair	Shiny Mirrors
Windward Wendy	Robo-Parrot	Rocket Boots	Left-Handed Steer	Neon Blue Hair	Squeaky Toys
Sailor Skye	Robo-Parrot	Echo Whistle	Right-Handed Steer	Bright Orange Hat	Shiny Mirrors

CLUE 1

Multiplication facts (1-12)

We spot a shelf of cargo crates arranged in equal rows. Let us count them to find our first clue.

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

T			T											T			
121	48	100	121	48	4	100	64	66	72	100	45	44	72	121	81	45	100
					T												
120	22	80	44	100	121	4	2	80	28	72	96	100	45				

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

$12 \times 4 = \square \rightarrow \boxed{\text{H}}$

$9 \times 8 = \square \rightarrow \boxed{\text{O}}$

$8 \times 12 = \square \rightarrow \boxed{\text{V}}$

$12 \times 10 = \square \rightarrow \boxed{\text{M}}$

$9 \times 9 = \square \rightarrow \boxed{\text{U}}$

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

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

$11 \times 4 = \square \rightarrow \boxed{\text{N}}$

$2 \times 1 = \square \rightarrow \boxed{\text{C}}$

$10 \times 10 = \square \rightarrow \boxed{\text{E}}$

$4 \times 1 = \square \rightarrow \boxed{\text{I}}$

$6 \times 11 = \square \rightarrow \boxed{\text{D}}$

$8 \times 10 = \square \rightarrow \boxed{\text{G}}$

$5 \times 9 = \square \rightarrow \boxed{\text{S}}$

$4 \times 7 = \square \rightarrow \boxed{\text{L}}$

Scratch space:

CLUE 2

The wind-speed dial on our airship only shows numbers rounded to the nearest ten. Read the dial to get the next clue.

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

The diagram illustrates the distribution of 10000 people across 10000 houses. It consists of two rows of boxes, each representing a house. The top row has 10 boxes, and the bottom row has 10 boxes. Each box contains a number representing the number of people in that house. The numbers are: 4300, 1300, 3000, 700, 130, 1700, 1700, 7000, 130, 20, 200, 4300, 3000, 3000, 430, 200, 170, 130, 4300, 1300. The boxes are arranged in two rows of 10. The top row has 10 boxes, and the bottom row has 10 boxes. Each box contains a number representing the number of people in that house. The numbers are: 4300, 1300, 3000, 700, 130, 1700, 1700, 7000, 130, 20, 200, 4300, 3000, 3000, 430, 200, 170, 130, 4300, 1300. The boxes are arranged in two rows of 10. The top row has 10 boxes, and the bottom row has 10 boxes. Each box contains a number representing the number of people in that house. The numbers are: 4300, 1300, 3000, 700, 130, 1700, 1700, 7000, 130, 20, 200, 4300, 3000, 3000, 430, 200, 170, 130, 4300, 1300.

Round 4,256 to the nearest hundred $\rightarrow$ **T**

Round 1,312 to the nearest hundred → **H**

Round 1,688 to the nearest hundred $\rightarrow$ **L**

Round 113 to the nearest ten $\rightarrow$ **G**

Round 652 to the nearest hundred $\rightarrow$ **V**

Round 2,735 to the nearest thousand → **E**

Round 6,766 to the nearest thousand $\rightarrow$ **A**

Round 20 to the nearest ten $\rightarrow$ **N**

Round 174 to the nearest ten $\rightarrow$ **W**

Round 327 to the nearest hundred $\rightarrow$ **D**

Round 130 to the nearest ten $\rightarrow$

1

Round 429 to the nearest ten $\rightarrow$ **R**

Round 158 to the nearest hundred $\rightarrow$ **S**

Scratch space:

CLUE 3

Bar model word problems

We compare the lengths of the airship sails using a simple block diagram. The difference reveals our third clue.

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 S O S .

23 71 82 143 57 72 82 135 135 135 23

The red team has 24 airship gears and the blue team has 1 airship gears. How many more airship gears does the red team have?

draw a bar model

Answer: → S

The red team has 146 cloud coins and the blue team has 3 cloud coins. How many more cloud coins does the red team have?

draw a bar model

Answer: → N

One group collected 62 airship gears and another group collected 10 airship gears. How many airship gears in all?

draw a bar model

Answer: → M

The red team has 69 spyglass lenses and the blue team has 12 spyglass lenses. How many more spyglass lenses does the red team have?

draw a bar model

Answer: → Y

There were 139 map scraps in all. 4 map scraps were used. How many map scraps are left?

draw a bar model

Answer: → R

Deckhand Pip used $\frac{1}{2}$ of the map scraps on the first day. The other 41 map scraps were used the next day. How many map scraps were there in all?

draw a bar model

Answer: → I

Deckhand Pip has 142 map scraps, packed 2 to a bag. How many bags can be filled?

draw a bar model

Answer: → H

CLUE 4
Fractions of a number

A crate of glowing power crystals fell. Only a fraction of them still shine. Count the shining crystals to unlock this clue.

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

A				A												
23	36	25	28	23	5	39	7	2	5	24	7	5	6	19	10	24
	A				A											
29	23	27	28	26	23	36	19	24	2	25						

$1/3 \text{ of } 69 = \square \rightarrow \boxed{\text{A}}$

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

$1/6 \text{ of } 168 = \square \rightarrow \boxed{\text{R}}$

$4/8 \text{ of } 52 = \square \rightarrow \boxed{\text{W}}$

$5/10 \text{ of } 50 = \square \rightarrow \boxed{\text{T}}$

$1/2 \text{ of } 78 = \square \rightarrow \boxed{\text{D}}$

$2/6 \text{ of } 21 = \square \rightarrow \boxed{\text{O}}$

$5/6 \text{ of } 12 = \square \rightarrow \boxed{\text{U}}$

$1/4 \text{ of } 116 = \square \rightarrow \boxed{\text{H}}$

$2/6 \text{ of } 57 = \square \rightarrow \boxed{\text{L}}$

$1/6 \text{ of } 30 = \square \rightarrow \boxed{\text{N}}$

$3/5 \text{ of } 45 = \square \rightarrow \boxed{\text{I}}$

$1/3 \text{ of } 6 = \square \rightarrow \boxed{\text{F}}$

$2/6 \text{ of } 108 = \square \rightarrow \boxed{\text{S}}$

$5/10 \text{ of } 48 = \square \rightarrow \boxed{\text{E}}$

Scratch space:

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

We must share the golden keyrings equally among our sky-patrol squads. The remaining amount gives us our final clue.

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:

$63 \div 7 = \boxed{}$

$48 \div 4 = \boxed{}$

$2 \div 2 = \boxed{}$

$72 \div 9 = \boxed{}$

$6 \div 3 = \boxed{}$

$45 \div 9 = \boxed{}$

$8 \div 2 = \boxed{}$

$35 \div 5 = \boxed{}$

$11 \div 1 = \boxed{}$

$48 \div 8 = \boxed{}$

$60 \div 6 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain swung on a grappling hook, then checked a solar compass.
2. The villain peered through a brass spyglass, then snapped magnetic gloves.
3. The villain sent a robo-parrot, then lit a glimmer lantern.
4. The villain swung on a grappling hook, then snapped magnetic gloves.
5. The villain unfurled a wind sail, then checked a solar compass.
6. The villain tossed a smoke bomb, then checked a solar compass.
7. The villain tossed a smoke bomb, then blew an echo whistle.
8. The villain tossed a smoke bomb, then fired up rocket boots.
9. The villain peered through a brass spyglass, then fired up rocket boots.
10. The villain tossed a smoke bomb, then lit a glimmer lantern.
11. The villain swung on a grappling hook, then blew an echo whistle.
12. The villain unfurled a wind sail, then fired up rocket boots.

Answer Key

The Lost Sky-Scepter

Culprit: Cloud Captain Cal

Robo-Parrot · Glimmer Lantern · Right-Handed Steer · Neon Blue Hair · Shiny Mirrors

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 THIEF DOES NOT USE MAGNETIC GLOVES"

$11 \times 11 = 121$ (T) · $12 \times 4 = 48$ (H) · $9 \times 8 = 72$ (O) · $8 \times 12 = 96$ (V) · $12 \times 10 = 120$ (M) · $9 \times 9 = 81$ (U) · $8 \times 8 = 64$ (F) · $11 \times 2 = 22$ (A) · $11 \times 4 = 44$ (N) · $2 \times 1 = 2$ (C) · $10 \times 10 = 100$ (E) · $4 \times 1 = 4$ (I) · $6 \times 11 = 66$ (D) · $8 \times 10 = 80$ (G) · $5 \times 9 = 45$ (S) · $4 \times 7 = 28$ (L)

Clue 2 (Rounding): "THE VILLAIN STEERS WITH THE RIGHT HAND"

Round 4,256 to the nearest hundred = 4300 (T) · Round 1,312 to the nearest hundred = 1300 (H) · Round 1,688 to the nearest hundred = 1700 (L) · Round 113 to the nearest ten = 110 (G) · Round 652 to the nearest hundred = 700 (V) · Round 2,735 to the nearest thousand = 3000 (E) · Round 6,766 to the nearest thousand = 7000 (A) · Round 20 to the nearest ten = 20 (N) · Round 174 to the nearest ten = 170 (W) · Round 327 to the nearest hundred = 300 (D) · Round 130 to the nearest ten = 130 (I) · Round 429 to the nearest ten = 430 (R) · Round 158 to the nearest hundred = 200 (S)

Clue 3 (Bar model word problems): "SHINY MIRRORS"

The red team has 24 airship gears and the blue team has 1 airship gears. How many more airship gears does the red team have? = 23 (S) · The red team has 146 cloud coins and the blue team has 3 cloud coins. How many more cloud coins does the red team have? = 143 (N) · One group collected 62 airship gears and another group collected 10 airship gears. How many airship gears in all? = 72 (M) · The red team has 69 spyglass lenses and the blue team has 12 spyglass lenses. How many more spyglass lenses does the red team have? = 57 (Y) · There were 139 map scraps in all. 4 map scraps were used. How many map scraps are left? = 135 (R) · Deckhand Pip used $\frac{1}{2}$ of the map scraps on the first day. The other 41 map scraps were used the next day. How many map scraps were there in all? = 82 (I) · Deckhand Pip has 142 map scraps, packed 2 to a bag. How many bags can be filled? = 71 (H)

Clue 4 (Fractions of a number): "A STRAND OF NEON BLUE HAIR WAS LEFT"

$\frac{1}{3}$ of 69 = 23 (A) · $\frac{6}{8}$ of 8 = 6 (B) · $\frac{1}{6}$ of 168 = 28 (R) · $\frac{4}{8}$ of 52 = 26 (W) · $\frac{5}{10}$ of 50 = 25 (T) · $\frac{1}{2}$ of 78 = 39 (D) · $\frac{2}{6}$ of 21 = 7 (O) · $\frac{5}{6}$ of 12 = 10 (U) · $\frac{1}{4}$ of 116 = 29 (H) · $\frac{2}{6}$ of 57 = 19 (L) · $\frac{1}{6}$ of 30 = 5 (N) · $\frac{3}{5}$ of 45 = 27 (I) · $\frac{1}{3}$ of 6 = 2 (F) · $\frac{2}{6}$ of 108 = 36 (S) · $\frac{5}{10}$ of 48 = 24 (E)

Clue 5 (Division facts (1-12)): surviving statement is box 3 → Cloud Captain Cal

$63 \div 7 = 9$ · $48 \div 4 = 12$ · $2 \div 2 = 1$ · $72 \div 9 = 8$ · $6 \div 3 = 2$ · $45 \div 9 = 5$ · $8 \div 2 = 4$ · $35 \div 5 = 7$ · $11 \div 1 = 11$ · $48 \div 8 = 6$ · $60 \div 6 = 10$