



The Mystery of the Sunken Chart

Grade 5 math · Multiplication, Subtraction, Addition, Fractions of a number, Missing addends · Reading level grades 5-6

Detective: _____ Date: _____

A sneaky Tide Raider snuck into the island map room and snatched the ancient gold-leaf chart! Solve the mystery clues around Sky Reef Island to uncover who took it.

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 Tide Raider is _____

Possible suspects

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

NAME	GEAR ITEM	SCOUT TOOL	COMPASS WRIST	HAIRSTYLE	VULNERABILITY
Ranger Amber	rope launcher	signal flare	right wrist compass	braided hair	bright light
Dr Rex	grappling hook	flash beacon	right wrist compass	spiky hair	bright light
Diver Cleo	glider wings	sonar whistle	left wrist compass	spiky hair	sneeze powder
Racer Chloe	glider wings	signal flare	left wrist compass	slicked hair	bright light
Dr Elena	smoke bombs	sonar whistle	right wrist compass	braided hair	loud whistle
Nav Mason	rope launcher	flash beacon	right wrist compass	spiky hair	sneeze powder
Prof Jade	glider wings	sonar whistle	right wrist compass	braided hair	bright light
Guide Felix	rope launcher	scout drone	left wrist compass	braided hair	sneeze powder
Sailor Kai	grappling hook	pocket telescope	right wrist compass	braided hair	bright light
Pilot Nora	glider wings	flash beacon	right wrist compass	spiky hair	loud whistle
Tracker Holly	smoke bombs	pocket telescope	left wrist compass	spiky hair	loud whistle
Hiker Nina	glider wings	flash beacon	right wrist compass	braided hair	bright light
Scout Tyler	rope launcher	pocket telescope	right wrist compass	slicked hair	loud whistle
Capt Morgan	smoke bombs	flash beacon	left wrist compass	braided hair	bright light
Guide Sam	compass decoder	scout drone	left wrist compass	braided hair	bright light
Explorer Brody	grappling hook	pocket telescope	left wrist compass	slicked hair	sneeze powder
Agent Drake	rope launcher	flash beacon	left wrist compass	spiky hair	sneeze powder
Nav Cruz	smoke bombs	flash beacon	right wrist compass	spiky hair	bright light
Ranger Maya	grappling hook	pocket telescope	right wrist compass	spiky hair	loud whistle
Pilot Jax	glider wings	scout drone	right wrist compass	braided hair	bright light
Tracker Leo	compass decoder	scout drone	left wrist compass	slicked hair	bright light

CLUE 1 Multiplication facts (1-12)

The island map grid is divided into equal rows and columns, requiring multiplication to find the total sectors searched.

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

$$5 \times 8 = \boxed{} \rightarrow \boxed{\text{T}}$$

$$11 \times 11 = \boxed{} \rightarrow \begin{bmatrix} \mathbf{v} \end{bmatrix}$$

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

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

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

$12 \times 9 = \square \rightarrow \mathbf{K}$

$11 \times 2 = \boxed{} \rightarrow \boxed{\text{P}}$

$10 \times 7 = \boxed{} \rightarrow \mathbf{A}$

$$11 \times 5 = \boxed{} \rightarrow \boxed{0}$$

$5 \times 3 =$ $\rightarrow$ **D**

$$3 \times 11 = \boxed{} \rightarrow \boxed{\text{L}}$$

$2 \times 10 = \boxed{} \rightarrow \boxed{\text{E}}$

$1 \times 5 = \square \rightarrow \boxed{\text{C}}$

$3 \times 8 = \square \rightarrow \boxed{I}$

Scratch space:

CLUE 2

Subtraction

The path guide checks supply weights before and after crossing the rope bridge, using subtraction to find lost gear.

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

T			T							T							
1987	8187	2462	1987	1355	3883	1376	3808	1728	1355	1376	8655	1987	4338	8187	6428	7616	4338

				T					T				
1355	1376	8714	8187	1987	7616	1355	1376	4338	1987	7616	2462	3883	1355

$6351 - 4364 = \boxed{} \rightarrow \boxed{\text{T}}$

$8576 - 4693 = \boxed{} \rightarrow \boxed{\text{A}}$

$11146 - 2959 = \boxed{} \rightarrow \boxed{\text{H}}$

$11898 - 3243 = \boxed{} \rightarrow \boxed{\text{N}}$

$4460 - 652 = \boxed{} \rightarrow \boxed{\text{L}}$

$5091 - 3715 = \boxed{} \rightarrow \boxed{\text{I}}$

$4866 - 2404 = \boxed{} \rightarrow \boxed{\text{E}}$

$11036 - 3420 = \boxed{} \rightarrow \boxed{\text{W}}$

$12836 - 4122 = \boxed{} \rightarrow \boxed{\text{G}}$

$3555 - 2200 = \boxed{} \rightarrow \boxed{\text{R}}$

$6980 - 2642 = \boxed{} \rightarrow \boxed{\text{S}}$

$6449 - 21 = \boxed{} \rightarrow \boxed{\text{O}}$

$6056 - 4328 = \boxed{} \rightarrow \boxed{\text{P}}$

Scratch space:

CLUE 3 Addition

The exploration squad tallies up all bronze dubloons found across three stone ruins to verify the total chest count.

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

B												B							
8185	7252	6674	6296	4073	5242	8578	6674	6296	4073	5242	8185	8578	6674	7302	9827	4912	9827		

5242	4073	4912	5242	7252	6310	6674	8578	7252	2339	7302	7302	4912	7252		

4535 + 3650 = → B	2625 + 2617 = → T	4698 + 3880 = → L
3577 + 3675 = → R	6573 + 3254 = → D	3122 + 3174 = → G
1804 + 2269 = → H	2993 + 3681 = → I	2252 + 2660 = → E
3093 + 3217 = → A	1497 + 842 = → U	3833 + 3469 = → N

Scratch space:

CLUE 4
Fractions of a number

The navigator calculates what fractional part of the total trail distance has been hiked through the misty valley.

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

B														
38	7	37	11	9	4	9	17	37	11	7	32	37	16	
16	40	37	33	33	4	9	22	40	37	13	30	40	33	36
39	17	22	7	40										

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

$1/8 \text{ of } 176 = \boxed{} \rightarrow \boxed{\text{O}}$

$1/4 \text{ of } 16 = \boxed{} \rightarrow \boxed{\text{E}}$

$1/2 \text{ of } 34 = \boxed{} \rightarrow \boxed{\text{H}}$

$1/2 \text{ of } 64 = \boxed{} \rightarrow \boxed{\text{W}}$

$1/3 \text{ of } 48 = \boxed{} \rightarrow \boxed{\text{S}}$

$3/5 \text{ of } 55 = \boxed{} \rightarrow \boxed{\text{G}}$

$1/2 \text{ of } 18 = \boxed{} \rightarrow \boxed{\text{D}}$

$2/6 \text{ of } 33 = \boxed{} \rightarrow \boxed{\text{I}}$

$1/4 \text{ of } 156 = \boxed{} \rightarrow \boxed{\text{T}}$

$2/10 \text{ of } 65 = \boxed{} \rightarrow \boxed{\text{J}}$

$1/3 \text{ of } 111 = \boxed{} \rightarrow \boxed{\text{A}}$

$1/3 \text{ of } 21 = \boxed{} \rightarrow \boxed{\text{R}}$

$1/4 \text{ of } 120 = \boxed{} \rightarrow \boxed{\text{U}}$

$4/8 \text{ of } 80 = \boxed{} \rightarrow \boxed{\text{N}}$

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

Scratch space:

CLUE 5**Missing addends - the last clue**

The puzzle door on the ancient vault needs a final code number to balance the total weight required on the stone pedestal.

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:

$35 + \underline{\quad} = 38$

$36 + \underline{\quad} = 40$

$35 + \underline{\quad} = 36$

$3 + \underline{\quad} = 8$

$2 + \underline{\quad} = 10$

$24 + \underline{\quad} = 35$

$19 + \underline{\quad} = 21$

$13 + \underline{\quad} = 19$

$28 + \underline{\quad} = 35$

$25 + \underline{\quad} = 34$

$5 + \underline{\quad} = 15$

Step 2 - cross out the sentence with each answer:

1. The villain glided over the treeline, then blew a high sonar whistle.
2. The villain decoded the secret chart, then sent out a small scout drone.
3. The villain glided over the treeline, then sent out a small scout drone.
4. The villain fired a sturdy climbing line, then launched a glowing signal flare.
5. The villain swung across the canyon, then blew a high sonar whistle.
6. The villain swung across the canyon, then sent out a small scout drone.
7. The villain decoded the secret chart, then spotted distant landmarks.
8. The villain threw a dense smoke cloud, then spotted distant landmarks.
9. The villain decoded the secret chart, then launched a glowing signal flare.
10. The villain fired a sturdy climbing line, then blew a high sonar whistle.
11. The villain fired a sturdy climbing line, then flashed a bright beacon signal.
12. The villain glided over the treeline, then flashed a bright beacon signal.

Answer Key

The Mystery of the Sunken Chart

Culprit: Hiker Nina

glider wings · flash beacon · right wrist compass · braided hair · bright light

Trail: Start 21 → Clue 1 16 → Clue 2 9 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Multiplication facts (1-12)): "THE VILLAIN DOES NOT HAVE A POCKET TELESCOPE"

$5 \times 8 = 40$ (T) · $11 \times 11 = 121$ (V) · $12 \times 11 = 132$ (N) · $7 \times 1 = 7$ (H) · $10 \times 8 = 80$ (S) · $12 \times 9 = 108$ (K) · $11 \times 2 = 22$ (P) · $10 \times 7 = 70$ (A) · $11 \times 5 = 55$ (O) · $5 \times 3 = 15$ (D) · $3 \times 11 = 33$ (L) · $2 \times 10 = 20$ (E) · $1 \times 5 = 5$ (C) · $3 \times 8 = 24$ (I)

Clue 2 (Subtraction): "THE TRAIL PRINT SHOWS RIGHT WRIST WEAR"

$6351 - 4364 = 1987$ (T) · $8576 - 4693 = 3883$ (A) · $11146 - 2959 = 8187$ (H) · $11898 - 3243 = 8655$ (N) · $4460 - 652 = 3808$ (L) · $5091 - 3715 = 1376$ (I) · $4866 - 2404 = 2462$ (E) · $11036 - 3420 = 7616$ (W) · $12836 - 4122 = 8714$ (G) · $3555 - 2200 = 1355$ (R) · $6980 - 2642 = 4338$ (S) · $6449 - 21 = 6428$ (O) · $6056 - 4328 = 1728$ (P)

Clue 3 (Addition): "BRIGHT LIGHT BLINDED THE TRAIL RUNNER"

$4535 + 3650 = 8185$ (B) · $2625 + 2617 = 5242$ (T) · $4698 + 3880 = 8578$ (L) · $3577 + 3675 = 7252$ (R) · $6573 + 3254 = 9827$ (D) · $3122 + 3174 = 6296$ (G) · $1804 + 2269 = 4073$ (H) · $2993 + 3681 = 6674$ (I) · $2252 + 2660 = 4912$ (E) · $3093 + 3217 = 6310$ (A) · $1497 + 842 = 2339$ (U) · $3833 + 3469 = 7302$ (N)

Clue 4 (Fractions of a number): "BRAIDED HAIR WAS SNAGGED ON A JUNGLE THORN"

$\frac{1}{5}$ of 190 = 38 (B) · $\frac{1}{8}$ of 176 = 22 (O) · $\frac{1}{4}$ of 16 = 4 (E) · $\frac{1}{2}$ of 34 = 17 (H) · $\frac{1}{2}$ of 64 = 32 (W) · $\frac{1}{3}$ of 48 = 16 (S) · $\frac{3}{5}$ of 55 = 33 (G) · $\frac{1}{2}$ of 18 = 9 (D) · $\frac{2}{6}$ of 33 = 11 (I) · $\frac{1}{4}$ of 156 = 39 (T) · $\frac{2}{10}$ of 65 = 13 (J) · $\frac{1}{3}$ of 111 = 37 (A) · $\frac{1}{3}$ of 21 = 7 (R) · $\frac{1}{4}$ of 120 = 30 (U) · $\frac{4}{8}$ of 80 = 40 (N) · $\frac{6}{8}$ of 48 = 36 (L)

Clue 5 (Missing addends): surviving statement is box 12 → Hiker Nina

$35 + \underline{\quad} = 38 = 3$ · $36 + \underline{\quad} = 40 = 4$ · $35 + \underline{\quad} = 36 = 1$ · $3 + \underline{\quad} = 8 = 5$ · $2 + \underline{\quad} = 10 = 8$ · $24 + \underline{\quad} = 35 = 11$ · $19 + \underline{\quad} = 21 = 2$ · $13 + \underline{\quad} = 19 = 6$ · $28 + \underline{\quad} = 35 = 7$ · $25 + \underline{\quad} = 34 = 9$ · $5 + \underline{\quad} = 15 = 10$