



The Case of the Golden Sky Compass

Grade 4 math · Rounding, Addition, Subtraction, Multiplication, Division · Reading level grades 3-4

Detective: _____ Date: _____

The Golden Sky Compass has been stolen from the grand airship! The culprit flew away into the clouds. As a Sky Patroller, you must help Captain Breeze track down the rogue sky-cadet before they hide the compass 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 rogue sky-cadet is _____

Possible suspects

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

NAME	SKY SKILL	POCKET GADGET	GOGGLE STYLE	HAIR COLOR	HIDDEN WEAKNESS
Kira	Lightning Dash	Mini Drone	Wears brass goggles	Fiery red hair	Ticklish underarms
Luna	Wind Blast	Grappling Hook	Wears brass goggles	Sun yellow hair	Scared of heights
Pip	Wind Blast	Glider Wings	No goggles on head	Fiery red hair	Allergic to pine
Toby	Lightning Dash	Grappling Hook	No goggles on head	Fiery red hair	Allergic to pine
Zoey	Lightning Dash	Glider Wings	Wears brass goggles	Sun yellow hair	Ticklish underarms
Nova	Star Navigation	Mini Drone	No goggles on head	Spiky blue hair	Allergic to pine
Skye	Wind Blast	Spy Telescope	No goggles on head	Spiky blue hair	Ticklish underarms
Ben	Star Navigation	Glider Wings	No goggles on head	Fiery red hair	Ticklish underarms
Cleo	Storm Summon	Grappling Hook	Wears brass goggles	Fiery red hair	Ticklish underarms
Max	Star Navigation	Spy Telescope	Wears brass goggles	Spiky blue hair	Ticklish underarms
Jax	Wind Blast	Glider Wings	Wears brass goggles	Fiery red hair	Allergic to pine
Maya	Wind Blast	Smoke Bombs	No goggles on head	Sun yellow hair	Scared of heights
Otis	Wind Blast	Grappling Hook	No goggles on head	Sun yellow hair	Scared of heights
Tess	Star Navigation	Mini Drone	Wears brass goggles	Fiery red hair	Ticklish underarms
Mia	Wind Blast	Mini Drone	Wears brass goggles	Fiery red hair	Ticklish underarms
Hugo	Star Navigation	Spy Telescope	Wears brass goggles	Fiery red hair	Allergic to pine
Kip	Wind Blast	Mini Drone	No goggles on head	Sun yellow hair	Allergic to pine
Remy	Cloud Stealth	Mini Drone	Wears brass goggles	Sun yellow hair	Scared of heights
Zane	Star Navigation	Glider Wings	No goggles on head	Sun yellow hair	Ticklish underarms
Finn	Star Navigation	Smoke Bombs	Wears brass goggles	Fiery red hair	Ticklish underarms
Cody	Star Navigation	Grappling Hook	No goggles on head	Spiky blue hair	Scared of heights

CLUE 1

Our sky-radar screen is fuzzy. It only shows the altitude rounded to the nearest ten feet.

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

Diagram illustrating the distribution of 10000 items across 10 categories. The categories are represented by boxes, some of which are highlighted in orange. The values for each category are: 200, 130, 9000, 2300, 290, 3000, 3000, 2000, 290, 430, 1100, 170, 9000, 370, 430, 170, 200, 90, 370, 9000, 370, 5000, 170, 1700, 9000, 50, 170, 5000, 50, 370.

Round 178 to the nearest hundred $\rightarrow$ **T**

Round 91 to the nearest ten $\rightarrow$ **U**

Round 8,746 to the nearest thousand → **E**

Round 168 to the nearest ten $\rightarrow$

Round 48 to the nearest ten $\rightarrow$ **B**

Round 4,543 to the nearest thousand → **M**

Round 132 to the nearest ten $\rightarrow$ **H**

Round 1,684 to the nearest hundred → **K**

Round 434 to the nearest ten $\rightarrow$ **N**

Round 1,054 to the nearest hundred $\rightarrow$ **D**

Round 1,691 to the nearest thousand → **A**

Round 286 to the nearest ten $\rightarrow$

Round 3,308 to the nearest thousand $\rightarrow$ **L**

Round 2,278 to the nearest hundred $\rightarrow$ **V**

Round 367 to the nearest ten $\rightarrow$ **S**

Scratch space:

CLUE 2 **Addition**

We need to count all the extra wind-sails on the deck. Let's add up the small and large sails.

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

Diagram illustrating a 1D array structure with 20 slots. The slots are labeled with values (T or empty) and their corresponding indices (2507, 6480, 3563, 6488, 9076, 6488, 5791, 3563, 4637, 2507, 9524, 3563, 9096, 5869, 6488, 3424, 5869, 9096, 6488, 6488). The first slot contains 'T' and the 10th slot contains 'T'.

Below the array, a second row of 7 slots is shown, with indices 2063, 6202, 2063, 2063, 6611, 3563, 6488.

$1445 + 1062 = \boxed{} \rightarrow \boxed{\text{T}}$

$$3418 + 3062 = \boxed{} \rightarrow \boxed{\text{H}}$$

$1189 + 874 = \boxed{} \rightarrow \boxed{\mathbf{G}}$

$$2115 + 4087 = \boxed{} \rightarrow \boxed{\mathbf{0}}$$

$$3298 + 3313 = \boxed{} \rightarrow \boxed{\text{L}}$$

$$5303 + 3793 = \boxed{} \rightarrow \boxed{\mathbf{A}}$$

$$2616 + 2021 = \boxed{} \rightarrow \boxed{\text{C}}$$

$$4051 + 1740 = \boxed{} \rightarrow \boxed{\text{P}}$$

$$5350 + 4174 = \boxed{} \rightarrow \boxed{\mathbf{W}}$$

$$3181 + 2688 = \boxed{} \rightarrow \boxed{\text{R}}$$

$$2774 + 3714 = \boxed{} \rightarrow \boxed{\mathbf{S}}$$

$2200 + 1224 = \boxed{} \rightarrow \boxed{\mathbf{B}}$

$$6158 + 2918 = \boxed{} \rightarrow \boxed{\text{U}}$$

$1191 + 2372 = \boxed{} \rightarrow \boxed{\text{E}}$

Scratch space:

CLUE 3

Subtraction

The water ballast tank is leaking. We must calculate how much water we lost during the chase.

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

T			T					T				T							
6823	3112	1752	6823	1044	1257	7069	1752	6823	3112	1044	7932	6823	6361	8062	1977	6603	6361	7932	3112

3814	7689	8682	1752	1257	1044	1257	4868	7932

$7630 - 807 = \square \rightarrow \boxed{\text{T}}$

$10532 - 3463 = \square \rightarrow \boxed{\text{G}}$

$10686 - 2754 = \square \rightarrow \boxed{\text{S}}$

$13581 - 4899 = \square \rightarrow \boxed{\text{D}}$

$6734 - 4757 = \square \rightarrow \boxed{\text{K}}$

$11755 - 3693 = \square \rightarrow \boxed{\text{C}}$

$7978 - 4164 = \square \rightarrow \boxed{\text{U}}$

$1554 - 510 = \square \rightarrow \boxed{\text{A}}$

$5966 - 4214 = \square \rightarrow \boxed{\text{E}}$

$8574 - 2213 = \square \rightarrow \boxed{\text{I}}$

$9518 - 2915 = \square \rightarrow \boxed{\text{L}}$

$8157 - 468 = \square \rightarrow \boxed{\text{N}}$

$2299 - 1042 = \square \rightarrow \boxed{\text{R}}$

$6874 - 2006 = \square \rightarrow \boxed{\text{M}}$

$5114 - 2002 = \square \rightarrow \boxed{\text{H}}$

Scratch space:

CLUE 4

Multiplication facts (1-12)

Look at the cargo hold! There are several neat rows of glowing sky-lanterns we need to count.

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

W																		
72	14	50	9	22	144	11	50	99	14	70	49	70	14	11	55	90	99	70
90	7	7	55	14	66	8	14	144	14									

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

$10 \times 5 = \square \rightarrow \boxed{\text{F}}$

$7 \times 7 = \square \rightarrow \boxed{\text{Y}}$

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

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

$9 \times 11 = \square \rightarrow \boxed{\text{I}}$

$7 \times 2 = \square \rightarrow \boxed{\text{E}}$

$1 \times 8 = \square \rightarrow \boxed{\text{C}}$

$7 \times 10 = \square \rightarrow \boxed{\text{R}}$

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

$1 \times 11 = \square \rightarrow \boxed{\text{D}}$

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

$11 \times 5 = \square \rightarrow \boxed{\text{H}}$

$1 \times 7 = \square \rightarrow \boxed{\text{T}}$

$9 \times 1 = \square \rightarrow \boxed{\text{O}}$

Scratch space:

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

We found a bag of gold sky-tokens. We must share them equally among our crew members.

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:

$1 \div 1 = \boxed{}$

$55 \div 11 = \boxed{}$

$32 \div 8 = \boxed{}$

$18 \div 6 = \boxed{}$

$54 \div 6 = \boxed{}$

$88 \div 11 = \boxed{}$

$55 \div 5 = \boxed{}$

$56 \div 8 = \boxed{}$

$110 \div 11 = \boxed{}$

$132 \div 11 = \boxed{}$

$6 \div 3 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain performs a lightning dash, then deploys a tiny mini drone.
2. The villain starts a storm summon, then peers through a spy telescope.
3. The villain starts a storm summon, then soars away on glider wings.
4. The villain uses star navigation, then deploys a tiny mini drone.
5. The villain creates a huge wind blast, then deploys a tiny mini drone.
6. The villain starts a storm summon, then swings using a grappling hook.
7. The villain performs a lightning dash, then soars away on glider wings.
8. The villain creates a huge wind blast, then peers through a spy telescope.
9. The villain creates a huge wind blast, then swings using a grappling hook.
10. The villain performs a lightning dash, then peers through a spy telescope.
11. The villain performs a lightning dash, then swings using a grappling hook.
12. The villain starts a storm summon, then vanishes in a cloud of smoke bombs.

Answer Key

The Case of the Golden Sky Compass

Culprit: Cleo

Storm Summon · Grappling Hook · Wears brass goggles · Fiery red hair · Ticklish underarms

Trail: Start 21 → Clue 1 19 → Clue 2 10 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Rounding): "THE VILLAIN DOES NOT USE SMOKE BOMBS"

Round 178 to the nearest hundred = 200 (T) · Round 91 to the nearest ten = 90 (U) · Round 8,746 to the nearest thousand = 9000 (E) · Round 168 to the nearest ten = 170 (O) · Round 48 to the nearest ten = 50 (B) · Round 4,543 to the nearest thousand = 5000 (M) · Round 132 to the nearest ten = 130 (H) · Round 1,684 to the nearest hundred = 1700 (K) · Round 434 to the nearest ten = 430 (N) · Round 1,054 to the nearest hundred = 1100 (D) · Round 1,691 to the nearest thousand = 2000 (A) · Round 286 to the nearest ten = 290 (I) · Round 3,308 to the nearest thousand = 3000 (L) · Round 2,278 to the nearest hundred = 2300 (V) · Round 367 to the nearest ten = 370 (S)

Clue 2 (Addition): "THE SUSPECT WEARS BRASS GOGGLES"

$1445 + 1062 = 2507$ (T) · $3418 + 3062 = 6480$ (H) · $1189 + 874 = 2063$ (G) · $2115 + 4087 = 6202$ (O) · $3298 + 3313 = 6611$ (L) · $5303 + 3793 = 9096$ (A) · $2616 + 2021 = 4637$ (C) · $4051 + 1740 = 5791$ (P) · $5350 + 4174 = 9524$ (W) · $3181 + 2688 = 5869$ (R) · $2774 + 3714 = 6488$ (S) · $2200 + 1224 = 3424$ (B) · $6158 + 2918 = 9076$ (U) · $1191 + 2372 = 3563$ (E)

Clue 3 (Subtraction): "THE TARGET HAS TICKLISH UNDERARMS"

$7630 - 807 = 6823$ (T) · $10532 - 3463 = 7069$ (G) · $10686 - 2754 = 7932$ (S) · $13581 - 4899 = 8682$ (D) · $6734 - 4757 = 1977$ (K) · $11755 - 3693 = 8062$ (C) · $7978 - 4164 = 3814$ (U) · $1554 - 510 = 1044$ (A) · $5966 - 4214 = 1752$ (E) · $8574 - 2213 = 6361$ (I) · $9518 - 2915 = 6603$ (L) · $8157 - 468 = 7689$ (N) · $2299 - 1042 = 1257$ (R) · $6874 - 2006 = 4868$ (M) · $5114 - 2002 = 3112$ (H)

Clue 4 (Multiplication facts (1-12)): "WE FOUND FIERY RED HAIR AT THE SCENE"

$9 \times 8 = 72$ (W) · $10 \times 5 = 50$ (F) · $7 \times 7 = 49$ (Y) · $10 \times 9 = 90$ (A) · $11 \times 2 = 22$ (U) · $9 \times 11 = 99$ (I) · $7 \times 2 = 14$ (E) · $1 \times 8 = 8$ (C) · $7 \times 10 = 70$ (R) · $6 \times 11 = 66$ (S) · $1 \times 11 = 11$ (D) · $12 \times 12 = 144$ (N) · $11 \times 5 = 55$ (H) · $1 \times 7 = 7$ (T) · $9 \times 1 = 9$ (O)

Clue 5 (Division facts (1-12)): surviving statement is box 6 → Cleo

$1 \div 1 = 1$ · $55 \div 11 = 5$ · $32 \div 8 = 4$ · $18 \div 6 = 3$ · $54 \div 6 = 9$ · $88 \div 11 = 8$ · $55 \div 5 = 11$ · $56 \div 8 = 7$ · $110 \div 11 = 10$ · $132 \div 11 = 12$ · $6 \div 3 = 2$