



The Mystery of the Cosmic Core

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

Detective: _____ Date: _____

A sneaky space thief has stolen the glowing Cosmic Core from the observatory! Space Station Delta is on high alert. Commander Cooper needs your help to scan the clues, track down the bandit, and save the station's power grid before it goes dark.

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 Cosmic 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 POWER GEAR	SPACE SPECIALITY	SPACESUIT SETUP	VISOR HAIR COLOR	COSMIC WEAKNESS
Nova Starling	Gravity Glove	Rocket Repair	Left-handed helmet dial	Space silver hair	Magnetic space dust
Leo Orbit	Hologram Watch	Star Navigation	Right-handed helmet dial	Space silver hair	Magnetic space dust
Orion Vance	Force Shield	Zero-G Floating	Right-handed helmet dial	Neon green hair	Super gravity zones
Sally Ride	Force Shield	Asteroid Mining	Right-handed helmet dial	Space silver hair	Magnetic space dust
Dr Vance	Gravity Glove	Alien Language	Left-handed helmet dial	Neon green hair	Magnetic space dust
Major Tom	Laser Blaster	Asteroid Mining	Left-handed helmet dial	Space silver hair	Magnetic space dust
Neil Armstrong	Laser Blaster	Alien Language	Left-handed helmet dial	Space silver hair	Super gravity zones
Jax Comet	Force Shield	Star Navigation	Left-handed helmet dial	Space silver hair	Magnetic space dust
Cadet Rusty	Gravity Glove	Rocket Repair	Left-handed helmet dial	Neon green hair	Magnetic space dust
Zephyr Apollo	Jetpack Boots	Rocket Repair	Left-handed helmet dial	Space silver hair	Solar flare light
Commander Cooper	Force Shield	Rocket Repair	Right-handed helmet dial	Cosmic blue hair	Solar flare light
Peggy Whitson	Laser Blaster	Rocket Repair	Left-handed helmet dial	Neon green hair	Magnetic space dust
John Glenn	Force Shield	Alien Language	Left-handed helmet dial	Cosmic blue hair	Magnetic space dust
Mae Jemison	Laser Blaster	Star Navigation	Left-handed helmet dial	Neon green hair	Solar flare light
Guion Bluford	Jetpack Boots	Star Navigation	Right-handed helmet dial	Neon green hair	Solar flare light
Chris Hadfield	Force Shield	Star Navigation	Right-handed helmet dial	Space silver hair	Solar flare light
Yuri Gagarin	Hologram Watch	Alien Language	Right-handed helmet dial	Neon green hair	Magnetic space dust
Buzz Aldrin	Jetpack Boots	Asteroid Mining	Right-handed helmet dial	Neon green hair	Magnetic space dust
Stella Cosmos	Force Shield	Asteroid Mining	Left-handed helmet dial	Space silver hair	Magnetic space dust
Kalpana Chawla	Laser Blaster	Alien Language	Left-handed helmet dial	Space silver hair	Magnetic space dust
Lyra Vega	Jetpack Boots	Zero-G Floating	Right-handed helmet dial	Neon green hair	Solar flare light

CLUE 1

The damaged space station radar is glitching and can only show rounded numbers. Let us estimate the distance to the runaway ship.

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

Diagram illustrating the distribution of 10000 people across 18 categories. The categories are represented by boxes, some of which are highlighted in orange and labeled 'T' for 'Total'.

Category	Value	Highlighted
1	2300	Yes
2	4300	No
3	170	No
4	200	No
5	1700	No
6	200	No
7	5000	No
8	170	No
9	130	No
10	2300	Yes
11	3700	No
12	2900	No
13	170	No
14	200	No
15	90	No
16	2900	No
17	2300	Yes
18	1100	No
19	90	No
20	2900	No
21	230	No
22	30	No
23	2900	No
24	130	No
25	1100	No
26	170	No
27	2300	Yes
28	30	No
29	170	No
30	5000	No
31	50	No
32	500	No
33	30	No

Round 2,303 to the nearest hundred

Round 248 to the nearest hundred

Round 133 to the nearest ten

A diagram showing a box with an arrow pointing to a box labeled 'C'.

Round 1,739 to the nearest hundred

A diagram illustrating a transformation. On the left is a light blue rounded rectangle containing a large black question mark. An arrow points to the right, where a dark blue rounded rectangle contains a large white letter 'U'.

Round 232 to the nearest ten

Round 2,869 to the nearest hundred

A diagram illustrating a transformation. On the left is a rounded rectangular box containing a question mark (?). An arrow points from this box to another rounded rectangular box on the right, which contains the letter 'O'.

Round 29 to the nearest ten

A diagram showing a box with an arrow pointing to a box labeled R.

Round 1,092 to the nearest hundred

A diagram showing a box with an arrow pointing to a box labeled K.

Round 90 to the nearest ten

Round 4,547 to the nearest thousand

1 $\rightarrow$ **P**

Round 4,327 to the nearest hundred

A diagram illustrating a transformation. On the left is a simple rectangular box. An arrow points from this box to another rectangular box on the right. This second box contains the letter 'H' in a bold, black font.

Round 168 to the nearest ten

Round 48 to the nearest ten

A diagram showing a transformation. On the left is a box containing a question mark. An arrow points to the right, where a box containing the letter 'A' is shown. This represents the transformation of the question mark into the letter 'A'.

Round 521 to the nearest hundred

A diagram illustrating a transition. On the left is a simple rectangular box. An arrow points from this box to a second box on the right. The second box is thicker and contains the letter 'I'.

Round 3,702 to the nearest hundred

Scratch space:

CLUE 2 Addition

To power up the main search scanners, we must add up all the spare fuel cells left in the cargo bays.

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

T						T													
8579	7622	2946	7469	2946	2986	8579	2376	8118	2566	7469	7957	7049	8579	7622	2946				

					T				T										
7622	2946	7469	3381	2946	8579	8199	2566	7604	8579	9717	2310	7049	2946	2376					

$3446 + 5133 = \square \rightarrow$ T	$1601 + 1385 = \square \rightarrow$ F	$3294 + 3755 = \square \rightarrow$ N
$5226 + 2731 = \square \rightarrow$ O	$1565 + 1816 = \square \rightarrow$ M	$2512 + 5687 = \square \rightarrow$ W
$2977 + 5141 = \square \rightarrow$ I	$1982 + 964 = \square \rightarrow$ E	$1384 + 992 = \square \rightarrow$ D
$3932 + 5785 = \square \rightarrow$ U	$896 + 1670 = \square \rightarrow$ A	$1217 + 1093 = \square \rightarrow$ R
$4557 + 3065 = \square \rightarrow$ H	$4499 + 3105 = \square \rightarrow$ S	$4573 + 2896 = \square \rightarrow$ L

Scratch space:

CLUE 3

Subtraction

The ship's computer tells us how many star maps we started with and how many were lost during the escape.

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

M																	
2650	6742	2604	4606	2998	1880	7346	1940	7348	1028	6742	1940	2998	5849	7815	7348	1880	

7348	6868	3475	7828	2998	5849	1880	4966	2998	1880	6742	8142	2604	2998	1880	

$3673 - 1023 = \square \rightarrow \boxed{\text{M}}$

$9442 - 2574 = \square \rightarrow \boxed{\text{L}}$

$8668 - 1320 = \square \rightarrow \boxed{\text{S}}$

$4110 - 1112 = \square \rightarrow \boxed{\text{E}}$

$6407 - 1441 = \square \rightarrow \boxed{\text{H}}$

$6771 - 3296 = \square \rightarrow \boxed{\text{O}}$

$9639 - 2293 = \square \rightarrow \boxed{\text{I}}$

$9368 - 1226 = \square \rightarrow \boxed{\text{R}}$

$5667 - 4639 = \square \rightarrow \boxed{\text{P}}$

$9237 - 2495 = \square \rightarrow \boxed{\text{A}}$

$8729 - 914 = \square \rightarrow \boxed{\text{U}}$

$4641 - 2037 = \square \rightarrow \boxed{\text{G}}$

$6056 - 4116 = \square \rightarrow \boxed{\text{C}}$

$4786 - 180 = \square \rightarrow \boxed{\text{N}}$

$3475 - 1595 = \square \rightarrow \boxed{\text{T}}$

$9928 - 4079 = \square \rightarrow \boxed{\text{D}}$

$9355 - 1527 = \square \rightarrow \boxed{\text{W}}$

Scratch space:

CLUE 4

Multiplication facts (1-12)

We found rows of mysterious footprints in the space dust. Let us multiply the rows by the prints in each row.

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

W																	
20	81	80	44	49	27	10	70	63	96	35	81	70	88	40	110	81	54

6	96	88	54	27	81	96	54	99	6	81	10	44	44	54

$10 \times 2 = \square \rightarrow \text{W}$

$8 \times 11 = \square \rightarrow \text{I}$

$6 \times 1 = \square \rightarrow \text{H}$

$4 \times 11 = \square \rightarrow \text{O}$

$8 \times 5 = \square \rightarrow \text{L}$

$11 \times 10 = \square \rightarrow \text{V}$

$7 \times 5 = \square \rightarrow \text{C}$

$7 \times 7 = \square \rightarrow \text{U}$

$8 \times 10 = \square \rightarrow \text{F}$

$9 \times 6 = \square \rightarrow \text{R}$

$9 \times 3 = \square \rightarrow \text{N}$

$10 \times 7 = \square \rightarrow \text{S}$

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

$9 \times 7 = \square \rightarrow \text{P}$

$9 \times 11 = \square \rightarrow \text{T}$

$8 \times 12 = \square \rightarrow \text{A}$

$1 \times 10 = \square \rightarrow \text{D}$

Scratch space:

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

To feed the tracking robot pets, we must divide the energy treats equally among them.

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:

$110 \div 10 = \boxed{}$

$3 \div 3 = \boxed{}$

$30 \div 10 = \boxed{}$

$108 \div 12 = \boxed{}$

$72 \div 9 = \boxed{}$

$60 \div 6 = \boxed{}$

$12 \div 6 = \boxed{}$

$54 \div 9 = \boxed{}$

$25 \div 5 = \boxed{}$

$72 \div 6 = \boxed{}$

$36 \div 9 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain fires a bright laser blast, then digs up rare glowing moon rocks.
2. The villain lifts a heavy crate with a gravity glove, then fixes a broken hyperdrive engine.
3. The villain blocks the path with a glowing force shield, then digs up rare glowing moon rocks.
4. The villain creates three trick clones with a hologram watch, then floats upside down in zero gravity.
5. The villain zooms away using rocket boots, then steers through a dangerous asteroid belt.
6. The villain creates three trick clones with a hologram watch, then chats with a strange purple alien.
7. The villain blocks the path with a glowing force shield, then steers through a dangerous asteroid belt.
8. The villain creates three trick clones with a hologram watch, then digs up rare glowing moon rocks.
9. The villain fires a bright laser blast, then steers through a dangerous asteroid belt.
10. The villain blocks the path with a glowing force shield, then floats upside down in zero gravity.
11. The villain fires a bright laser blast, then chats with a strange purple alien.
12. The villain zooms away using rocket boots, then digs up rare glowing moon rocks.

Answer Key

The Mystery of the Cosmic Core

Culprit: Jax Comet

Force Shield · Star Navigation · Left-handed helmet dial · Space silver hair · Magnetic space dust

Trail: Start 21 → Clue 1 16 → Clue 2 8 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Rounding): "THE SUSPECT DOES NOT KNOW ROCKET REPAIR"

Round 2,303 to the nearest hundred = 2300 (T) · Round 248 to the nearest hundred = 200 (S) · Round 133 to the nearest ten = 130 (C) · Round 1,739 to the nearest hundred = 1700 (U) · Round 232 to the nearest ten = 230 (W) · Round 2,869 to the nearest hundred = 2900 (O) · Round 29 to the nearest ten = 30 (R) · Round 1,092 to the nearest hundred = 1100 (K) · Round 90 to the nearest ten = 90 (N) · Round 4,547 to the nearest thousand = 5000 (P) · Round 4,327 to the nearest hundred = 4300 (H) · Round 168 to the nearest ten = 170 (E) · Round 48 to the nearest ten = 50 (A) · Round 521 to the nearest hundred = 500 (I) · Round 3,702 to the nearest hundred = 3700 (D)

Clue 2 (Addition): "THE LEFT DIAL ON THE HELMET WAS TURNED"

$3446 + 5133 = 8579$ (T) · $1601 + 1385 = 2986$ (F) · $3294 + 3755 = 7049$ (N) · $5226 + 2731 = 7957$ (O) · $1565 + 1816 = 3381$ (M) · $2512 + 5687 = 8199$ (W) · $2977 + 5141 = 8118$ (I) · $1982 + 964 = 2946$ (E) · $1384 + 992 = 2376$ (D) · $3932 + 5785 = 9717$ (U) · $896 + 1670 = 2566$ (A) · $1217 + 1093 = 2310$ (R) · $4557 + 3065 = 7622$ (H) · $4499 + 3105 = 7604$ (S) · $4573 + 2896 = 7469$ (L)

Clue 3 (Subtraction): "MAGNETIC SPACE DUST SLOWED THE TARGET"

$3673 - 1023 = 2650$ (M) · $9442 - 2574 = 6868$ (L) · $8668 - 1320 = 7348$ (S) · $4110 - 1112 = 2998$ (E) · $6407 - 1441 = 4966$ (H) · $6771 - 3296 = 3475$ (O) · $9639 - 2293 = 7346$ (I) · $9368 - 1226 = 8142$ (R) · $5667 - 4639 = 1028$ (P) · $9237 - 2495 = 6742$ (A) · $8729 - 914 = 7815$ (U) · $4641 - 2037 = 2604$ (G) · $6056 - 4116 = 1940$ (C) · $4786 - 180 = 4606$ (N) · $3475 - 1595 = 1880$ (T) · $9928 - 4079 = 5849$ (D) · $9355 - 1527 = 7828$ (W)

Clue 4 (Multiplication facts (1-12)): "WE FOUND SPACE SILVER HAIR NEAR THE DOOR"

$10 \times 2 = 20$ (W) · $8 \times 11 = 88$ (I) · $6 \times 1 = 6$ (H) · $4 \times 11 = 44$ (O) · $8 \times 5 = 40$ (L) · $11 \times 10 = 110$ (V) · $7 \times 5 = 35$ (C) · $7 \times 7 = 49$ (U) · $8 \times 10 = 80$ (F) · $9 \times 6 = 54$ (R) · $9 \times 3 = 27$ (N) · $10 \times 7 = 70$ (S) · $9 \times 9 = 81$ (E) · $9 \times 7 = 63$ (P) · $9 \times 11 = 99$ (T) · $8 \times 12 = 96$ (A) · $1 \times 10 = 10$ (D)

Clue 5 (Division facts (1-12)): surviving statement is box 7 → Jax Comet

$110 \div 10 = 11$ · $3 \div 3 = 1$ · $30 \div 10 = 3$ · $108 \div 12 = 9$ · $72 \div 9 = 8$ · $60 \div 6 = 10$ · $12 \div 6 = 2$ · $54 \div 9 = 6$ · $25 \div 5 = 5$ · $72 \div 6 = 12$ · $36 \div 9 = 4$