The Starlight Base Mystery

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

Detective: _____ **Date:** _____

A glowing cosmic crystal vanished from the vault at Starlight Lunar Outpost! Help the Starlight Squad solve the clues and find out which crew member 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 Space Bandit is _____

Possible suspects

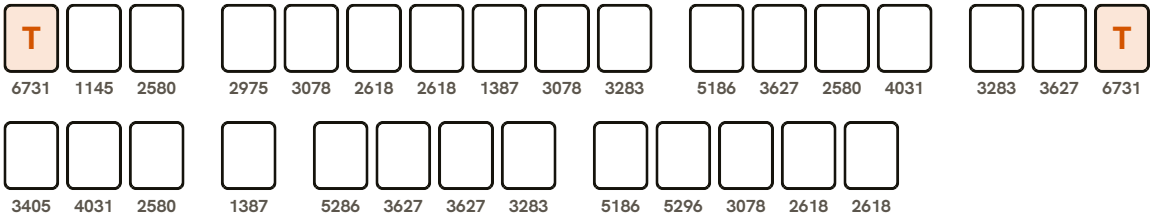
Cross off a row as each clue rules it out. The one left at the end is the culprit.

NAME	PRIMARY TOOL	SECONDARY GEAR	SCANNER GRIP	SPACESUIT HAIR	DISTRACTION
Scout Rigel	Gravity Boots	Cosmic Compass	Right-Handed Scanner	Cyan Hair	Bright Flare Dazzle
Doctor Ray	Laser Cutter	Cosmic Compass	Right-Handed Scanner	Magenta Hair	Radio Noise Glitch
Cadet Cosmo	Jetpack	Solar Scoop	Left-Handed Scanner	Cyan Hair	Bright Flare Dazzle
Pilot Venus	Plasma Shield	Asteroid Magnet	Right-Handed Scanner	Cyan Hair	Space Dust Sneeze
Officer Comet	Plasma Shield	Asteroid Magnet	Right-Handed Scanner	Magenta Hair	Space Dust Sneeze
Astronaut Buzz	Jetpack	Solar Scoop	Left-Handed Scanner	Cyan Hair	Radio Noise Glitch
Navigator Neil	Gravity Boots	Asteroid Magnet	Left-Handed Scanner	Magenta Hair	Space Dust Sneeze
Cadet Stella	Laser Cutter	Asteroid Magnet	Right-Handed Scanner	Magenta Hair	Bright Flare Dazzle
Techie Tycho	Jetpack	Cosmic Compass	Left-Handed Scanner	Magenta Hair	Space Dust Sneeze
Rover Ruby	Laser Cutter	Cosmic Compass	Left-Handed Scanner	Cyan Hair	Radio Noise Glitch
Pilot Orion	Laser Cutter	Solar Scoop	Left-Handed Scanner	Magenta Hair	Space Dust Sneeze
Cadet Pulsar	Plasma Shield	Cosmic Compass	Left-Handed Scanner	Magenta Hair	Space Dust Sneeze
Pilot Mae	Gravity Boots	Cosmic Compass	Right-Handed Scanner	Cyan Hair	Space Dust Sneeze
Cosmo Clara	Jetpack	Comet Net	Left-Handed Scanner	Silver Hair	Space Dust Sneeze
Officer Hal	Laser Cutter	Asteroid Magnet	Left-Handed Scanner	Silver Hair	Space Dust Sneeze
Ranger Jax	Starlight Scanner	Moon Drill	Right-Handed Scanner	Magenta Hair	Space Dust Sneeze
Cadet Sally	Gravity Boots	Moon Drill	Left-Handed Scanner	Magenta Hair	Space Dust Sneeze
Captain Nova	Jetpack	Moon Drill	Left-Handed Scanner	Cyan Hair	Bright Flare Dazzle
Agent Astro	Plasma Shield	Solar Scoop	Right-Handed Scanner	Silver Hair	Space Dust Sneeze
Commander Leo	Starlight Scanner	Solar Scoop	Right-Handed Scanner	Silver Hair	Space Dust Sneeze
Engineer Sam	Laser Cutter	Cosmic Compass	Left-Handed Scanner	Magenta Hair	Bright Flare Dazzle

CLUE 1 Subtraction

> We measured how much rocket fuel was missing from the main tank to reveal our first hint.

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



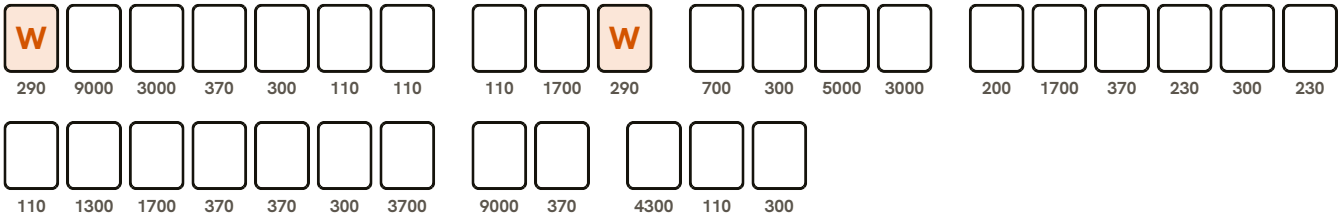
7126 - 395 = ☐ → T	6117 - 931 = ☐ → D	3596 - 1016 = ☐ → E
5223 - 2248 = ☐ → V	5679 - 383 = ☐ → R	6259 - 973 = ☐ → M
5425 - 2142 = ☐ → N	4608 - 1530 = ☐ → I	4969 - 3582 = ☐ → A
7190 - 3159 = ☐ → S	5830 - 4685 = ☐ → H	6381 - 2754 = ☐ → O
4388 - 983 = ☐ → U	2919 - 301 = ☐ → L	

Scratch space:

CLUE 2 Rounding

The outer space radar screen only displays rounded distance numbers for safety.

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



Round 288 to the nearest ten ☐ → W

Round 4,835 to the nearest thousand ☐ → F

Round 3,697 to the nearest hundred ☐ → R

Round 2,972 to the nearest thousand ☐ → T

Round 1,711 to the nearest hundred ☐ → A

Round 1,251 to the nearest hundred ☐ → C

Round 206 to the nearest hundred ☐ → H

Round 108 to the nearest ten ☐ → S

Round 373 to the nearest ten ☐ → N

Round 272 to the nearest hundred ☐ → E

Round 4,320 to the nearest hundred ☐ → U

Round 226 to the nearest ten ☐ → D

Round 683 to the nearest hundred ☐ → L

Round 8,834 to the nearest thousand ☐ → I

Scratch space:

CLUE 3 Addition

We added up all the stray energy sparks left near the airlock door.

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



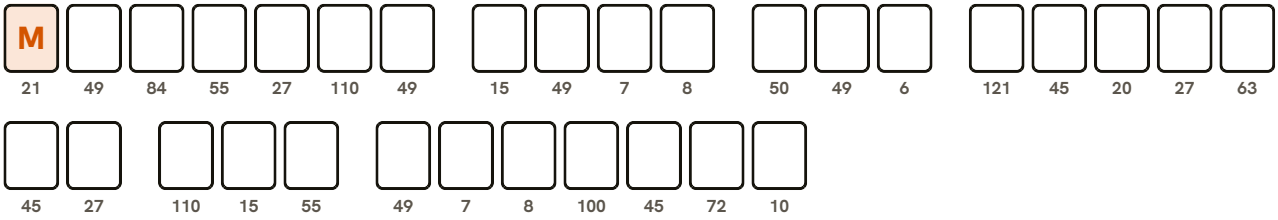
1848 + 3725 = ☐ → V	2855 + 1749 = ☐ → L	3026 + 2590 = ☐ → I
4526 + 4681 = ☐ → N	2218 + 2829 = ☐ → S	4046 + 1745 = ☐ → T
1163 + 1553 = ☐ → O	1545 + 3381 = ☐ → U	4567 + 3130 = ☐ → M
1099 + 1156 = ☐ → C	2190 + 2574 = ☐ → R	3742 + 5427 = ☐ → F
3374 + 2307 = ☐ → Z	3669 + 2265 = ☐ → E	3664 + 4383 = ☐ → D
3056 + 5967 = ☐ → A		

Scratch space:

CLUE 4 Multiplication facts (1-12)

> The solar panels were laid out in neat matching rows across the flight deck.

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



7 × 3 = ☐ → M	11 × 11 = ☐ → F	3 × 9 = ☐ → N
4 × 2 = ☐ → R	5 × 11 = ☐ → E	5 × 4 = ☐ → U
10 × 10 = ☐ → L	5 × 10 = ☐ → W	9 × 7 = ☐ → D
7 × 7 = ☐ → A	3 × 5 = ☐ → H	1 × 6 = ☐ → S	5 × 9 = ☐ → O
2 × 5 = ☐ → K	10 × 11 = ☐ → T	12 × 7 = ☐ → G
12 × 6 = ☐ → C	1 × 7 = ☐ → I	

Scratch space:

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

> We shared the emergency space rations equally among the research teams.

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:

30 ÷ 10 = ☐	32 ÷ 8 = ☐	108 ÷ 9 = ☐	56 ÷ 7 = ☐	66 ÷ 6 = ☐
22 ÷ 11 = ☐	7 ÷ 7 = ☐	72 ÷ 12 = ☐	21 ÷ 3 = ☐	60 ÷ 12 = ☐
70 ÷ 7 = ☐				

Step 2 - cross out the sentence with each answer:

1. The villain scanned the lock frequency, then pulled the star chart safe.
2. The villain deflected the alarm beam, then caught the flying space probe.
3. The villain deflected the alarm beam, then steered toward the escape pod.
4. The villain sliced the vault hatch, then scooped up the lunar crystal.
5. The villain flew through the cargo bay, then scooped up the lunar crystal.
6. The villain boosted over the security wall, then drilled into the core room.
7. The villain deflected the alarm beam, then scooped up the lunar crystal.
8. The villain scanned the lock frequency, then scooped up the lunar crystal.
9. The villain flew through the cargo bay, then steered toward the escape pod.
10. The villain deflected the alarm beam, then pulled the star chart safe.
11. The villain scanned the lock frequency, then drilled into the core room.
12. The villain boosted over the security wall, then pulled the star chart safe.

TEACHER / PARENT

Answer Key

The Starlight Base Mystery

Culprit: Techie Tycho

Jetpack · Cosmic Compass · Left-Handed Scanner · Magenta Hair · Space Dust Sneeze

Trail: Start 21 → Clue 1 18 → Clue 2 10 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Subtraction): "THE VILLAIN DOES NOT USE A MOON DRILL"

7126 - 395 = 6731 (T) · 6117 - 931 = 5186 (D) · 3596 - 1016 = 2580 (E) · 5223 - 2248 = 2975 (V) · 5679 - 383 = 5296 (R) · 6259 - 973 = 5286 (M) · 5425 - 2142 = 3283 (N) · 4608 - 1530 = 3078 (I) · 4969 - 3582 = 1387 (A) · 7190 - 3159 = 4031 (S) · 5830 - 4685 = 1145 (H) · 6381 - 2754 = 3627 (O) · 4388 - 983 = 3405 (U) · 2919 - 301 = 2618 (L)

Clue 2 (Rounding): "WITNESS SAW LEFT HANDED SCANNER IN USE"

Round 288 to the nearest ten = 290 (W) · Round 4,835 to the nearest thousand = 5000 (F) · Round 3,697 to the nearest hundred = 3700 (R) · Round 2,972 to the nearest thousand = 3000 (T) · Round 1,711 to the nearest hundred = 1700 (A) · Round 1,251 to the nearest hundred = 1300 (C) · Round 206 to the nearest hundred = 200 (H) · Round 108 to the nearest ten = 110 (S) · Round 373 to the nearest ten = 370 (N) · Round 272 to the nearest hundred = 300 (E) · Round 4,320 to the nearest hundred = 4300 (U) · Round 226 to the nearest ten = 230 (D) · Round 683 to the nearest hundred = 700 (L) · Round 8,834 to the nearest thousand = 9000 (I)

Clue 3 (Addition): "VILLAIN SNEEZED FROM DUST AT SCENE"

1848 + 3725 = 5573 (V) · 2855 + 1749 = 4604 (L) · 3026 + 2590 = 5616 (I) · 4526 + 4681 = 9207 (N) · 2218 + 2829 = 5047 (S) · 4046 + 1745 = 5791 (T) · 1163 + 1553 = 2716 (O) · 1545 + 3381 = 4926 (U) · 4567 + 3130 = 7697 (M) · 1099 + 1156 = 2255 (C) · 2190 + 2574 = 4764 (R) · 3742 + 5427 = 9169 (F) · 3374 + 2307 = 5681 (Z) · 3669 + 2265 = 5934 (E) · 3664 + 4383 = 8047 (D) · 3056 + 5967 = 9023 (A)

Clue 4 (Multiplication facts (1-12)): "MAGENTA HAIR WAS FOUND ON THE AIRLOCK"

7 × 3 = 21 (M) · 11 × 11 = 121 (F) · 3 × 9 = 27 (N) · 4 × 2 = 8 (R) · 5 × 11 = 55 (E) · 5 × 4 = 20 (U) · 10 × 10 = 100 (L) · 5 × 10 = 50 (W) · 9 × 7 = 63 (D) · 7 × 7 = 49 (A) · 3 × 5 = 15 (H) · 1 × 6 = 6 (S) · 5 × 9 = 45 (O) · 2 × 5 = 10 (K) · 10 × 11 = 110 (T) · 12 × 7 = 84 (G) · 12 × 6 = 72 (C) · 1 × 7 = 7 (I)

Clue 5 (Division facts (1-12)): surviving statement is box 9 → Techie Tycho

30 ÷ 10 = 3 · 32 ÷ 8 = 4 · 108 ÷ 9 = 12 · 56 ÷ 7 = 8 · 66 ÷ 6 = 11 · 22 ÷ 11 = 2 · 7 ÷ 7 = 1 · 72 ÷ 12 = 6 · 21 ÷ 3 = 7 · 60 ÷ 12 = 5 · 70 ÷ 7 = 10