



The Nebula Orchid Heist

Grade 6 math · Multiplication, Skip counting, Subtraction, Addition, Division · Reading level grades 5-6

Detective: _____ Date: _____

A rogue astronaut has snicked into the Lunar Canopy and stolen the rare Nebula Orchid! We must scan the crew logs, track the clues, and stop them before they board the escape pod.

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 astronaut is _____

Possible suspects

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

NAME	SUIT UPGRADE	LASER GADGET	VISOR TINT	HELMET DECAL	SUIT EXPLOIT
Joan Higginbotham	jetpack boost	stasis beam	silver visor	rocket decal	magnet pull
Tim Peake	gravity boots	emp pulse	silver visor	rocket decal	magnet pull
Yi So-yeon	gravity boots	emp pulse	gold visor	rocket decal	magnet pull
Ellen Ochoa	gravity boots	matter beam	silver visor	star decal	static shock
Alan Shepard	gravity boots	matter beam	gold visor	star decal	magnet pull
Guion Bluford	jetpack boost	laser drill	gold visor	comet decal	magnet pull
Sunita Williams	scanner visor	matter beam	silver visor	rocket decal	magnet pull
Scott Kelly	jetpack boost	stasis beam	silver visor	rocket decal	solar flare
Chris Hadfield	plasma cutter	stasis beam	gold visor	star decal	solar flare
Leland Melvin	gravity boots	matter beam	gold visor	comet decal	static shock
Charles Bolden	scanner visor	matter beam	gold visor	comet decal	magnet pull
Valentina Tereshkova	jetpack boost	ion blaster	silver visor	rocket decal	magnet pull
Kalpana Chawla	oxygen bypass	stasis beam	gold visor	comet decal	static shock
Bernard Harris	jetpack boost	ion blaster	gold visor	comet decal	solar flare
Neil Armstrong	plasma cutter	matter beam	silver visor	rocket decal	solar flare
Michael Collins	oxygen bypass	matter beam	silver visor	comet decal	magnet pull
Mae Jemison	jetpack boost	matter beam	gold visor	comet decal	solar flare
Peggy Whitson	gravity boots	stasis beam	gold visor	comet decal	static shock
Guy Bluford	oxygen bypass	emp pulse	gold visor	comet decal	magnet pull
Buzz Aldrin	scanner visor	ion blaster	gold visor	rocket decal	magnet pull
Samantha Cristoforetti	oxygen bypass	stasis beam	silver visor	rocket decal	magnet pull

CLUE 1
Multiplication facts (1-12)

We found the fuel canister racks in the cargo bay arranged in equal rows. Multiply the rows to find the exact number of used canisters left by the thief.

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

T 121	18	40	49	16	48	36	40	55	16	40	63	14	16	T 121	18	110	144	40
110	14	40	1	132	132	36	54	63	40									

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

$10 \times 11 = \square \rightarrow \boxed{\text{A}}$

$1 \times 1 = \square \rightarrow \boxed{\text{M}}$

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

$12 \times 11 = \square \rightarrow \boxed{\text{P}}$

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

$9 \times 6 = \square \rightarrow \boxed{\text{L}}$

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

$10 \times 4 = \square \rightarrow \boxed{\text{E}}$

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

$2 \times 8 = \square \rightarrow \boxed{\text{O}}$

$9 \times 7 = \square \rightarrow \boxed{\text{S}}$

$3 \times 12 = \square \rightarrow \boxed{\text{U}}$

$9 \times 2 = \square \rightarrow \boxed{\text{H}}$

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

Scratch space:

CLUE 2 Skip counting

The security lights blink at steady, timed intervals. Count the flashes by skips of five to figure out how many seconds the thief had to escape the camera.

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

T																			
24	28	60	36	45	20	15	25	25	60	120	65	60	90	24	60	14	6		
90	15	15	65	20	45	65	36	60	25	65	45	70	28	24					

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, __, 26, 28 → **T**

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, __, 80, 90 → **G**

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, __, 100, 110 → **C**

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, __, 30, 35 → **R**

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, __, 16, 18 → **D**

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, __, 39, 42 → **V**

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, __, 70, 75 → **L**

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, __, 130, 140 → **F**

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, __, 18, 21 → **O**

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, __, 65, 70 → **E**

Skip-count by 2s. Fill the blank: 2, 4, __, 8, 10 → **A**

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, __, 50, 55 → **I**

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, __, 30, 32 → **H**

Skip-count by 5s. Fill the blank: 5, 10, 15, __, 25, 30 → **S**

Scratch space:

CLUE 3
Subtraction

The emergency oxygen reserve was drained during the break-in. Subtract the current pressure from the starting limit to see how much gas was stolen.

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

T						T					T		T		
6613	4407	5482	1520	7935	7238	6613	2535	5482	2797	7706	6613	1520	6613	8339	2797

	T										T
1520	6613	2535	8339	5390	6107	8016	2797	6107	5390	5482	6613

$9471 - 2858 = \square \rightarrow \text{T}$

$9380 - 1445 = \square \rightarrow \text{U}$

$6272 - 4752 = \square \rightarrow \text{S}$

$4794 - 2259 = \square \rightarrow \text{R}$

$6479 - 1089 = \square \rightarrow \text{N}$

$3315 - 518 = \square \rightarrow \text{A}$

$12809 - 4470 = \square \rightarrow \text{O}$

$9157 - 3050 = \square \rightarrow \text{G}$

$9598 - 2360 = \square \rightarrow \text{I}$

$6344 - 1937 = \square \rightarrow \text{H}$

$8359 - 343 = \square \rightarrow \text{M}$

$10117 - 2411 = \square \rightarrow \text{C}$

$5668 - 186 = \square \rightarrow \text{E}$

Scratch space:

CLUE 4 Addition

Our droid collected broken suit pieces from different parts of the dome. Add the scrap counts together to see the total number of parts the rogue left behind.

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

T																	
4024	4585	9587	4585	9587	6037	9340	9587	4024	3010	4585	3148	6855	9587	5087	6737		

3010	4585	5315	7742	9766	8782	3148	3620	8085	9587	4024	5087	9587	3620	6737	6037		

$1333 + 2691 = \boxed{} \rightarrow \boxed{T}$

$2366 + 2949 = \boxed{} \rightarrow \boxed{I}$

$3989 + 5777 = \boxed{} \rightarrow \boxed{Y}$

$2488 + 3549 = \boxed{} \rightarrow \boxed{L}$

$1613 + 3474 = \boxed{} \rightarrow \boxed{D}$

$3123 + 6217 = \boxed{} \rightarrow \boxed{M}$

$2084 + 4771 = \boxed{} \rightarrow \boxed{W}$

$2109 + 1039 = \boxed{} \rightarrow \boxed{O}$

$3203 + 4539 = \boxed{} \rightarrow \boxed{N}$

$3154 + 4931 = \boxed{} \rightarrow \boxed{K}$

$2885 + 6702 = \boxed{} \rightarrow \boxed{E}$

$2521 + 1099 = \boxed{} \rightarrow \boxed{C}$

$2760 + 1825 = \boxed{} \rightarrow \boxed{H}$

$1987 + 1023 = \boxed{} \rightarrow \boxed{S}$

$3082 + 3655 = \boxed{} \rightarrow \boxed{A}$

$4763 + 4019 = \boxed{} \rightarrow \boxed{R}$

Scratch space:

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

A pack of emergency rations was shared equally among the security robots. Divide the total bars by the number of active bots to trace the thief's path.

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:

$24 \div 8 = \boxed{}$

$35 \div 7 = \boxed{}$

$90 \div 9 = \boxed{}$

$27 \div 3 = \boxed{}$

$16 \div 4 = \boxed{}$

$48 \div 4 = \boxed{}$

$6 \div 3 = \boxed{}$

$36 \div 6 = \boxed{}$

$21 \div 3 = \boxed{}$

$3 \div 3 = \boxed{}$

$32 \div 4 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain activated the oxygen bypass, then melted the vault using a laser drill.
2. The villain fired up the jetpack boost, then beamed the loot away with a matter beam.
3. The villain activated the oxygen bypass, then froze the guards with a stasis beam.
4. The villain sliced the lock with a plasma cutter, then froze the guards with a stasis beam.
5. The villain fired up the jetpack boost, then zapped the defense grid with an ion blaster.
6. The villain turned on the scanner visor, then melted the vault using a laser drill.
7. The villain sliced the lock with a plasma cutter, then beamed the loot away with a matter beam.
8. The villain turned on the scanner visor, then zapped the defense grid with an ion blaster.
9. The villain activated the oxygen bypass, then zapped the defense grid with an ion blaster.
10. The villain fired up the jetpack boost, then froze the guards with a stasis beam.
11. The villain turned on the scanner visor, then beamed the loot away with a matter beam.
12. The villain sliced the lock with a plasma cutter, then zapped the defense grid with an ion blaster.

Answer Key

The Nebula Orchid Heist

Culprit: Sunita Williams

scanner visor · matter beam · silver visor · rocket decal · magnet pull

Trail: Start 21 → Clue 1 18 → Clue 2 8 → Clue 3 5 → Clue 4 4 → Clue 5 1

Clue 1 (Multiplication facts (1-12)): "THE ROGUE DOES NOT HAVE AN EMP PULSE"

$11 \times 11 = 121$ (T) · $10 \times 11 = 110$ (A) · $1 \times 1 = 1$ (M) · $12 \times 12 = 144$ (V) · $12 \times 11 = 132$ (P) · $7 \times 7 = 49$ (R) · $9 \times 6 = 54$ (L) · $2 \times 7 = 14$ (N) · $10 \times 4 = 40$ (E) · $4 \times 12 = 48$ (G) · $2 \times 8 = 16$ (O) · $9 \times 7 = 63$ (S) · $3 \times 12 = 36$ (U) · $9 \times 2 = 18$ (H) · $11 \times 5 = 55$ (D)

Clue 2 (Skip counting): "THE VISOR REFLECTED A COOL SILVER LIGHT"

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, __, 26, 28 = 24 (T) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, __, 80, 90 = 70 (G) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, __, 100, 110 = 90 (C) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, __, 30, 35 = 25 (R) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, __, 16, 18 = 14 (D) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, __, 39, 42 = 36 (V) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, __, 70, 75 = 65 (L) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, __, 130, 140 = 120 (F) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, __, 18, 21 = 15 (O) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, __, 65, 70 = 60 (E) · Skip-count by 2s. Fill the blank: 2, 4, __, 8, 10 = 6 (A) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, __, 50, 55 = 45 (I) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, __, 30, 32 = 28 (H) · Skip-count by 5s. Fill the blank: 5, 10, 15, __, 25, 30 = 20 (S)

Clue 3 (Subtraction): "THE SUIT REACTS TO A STRONG MAGNET"

$9471 - 2858 = 6613$ (T) · $9380 - 1445 = 7935$ (U) · $6272 - 4752 = 1520$ (S) · $4794 - 2259 = 2535$ (R) · $6479 - 1089 = 5390$ (N) · $3315 - 518 = 2797$ (A) · $12809 - 4470 = 8339$ (O) · $9157 - 3050 = 6107$ (G) · $9598 - 2360 = 7238$ (I) · $6344 - 1937 = 4407$ (H) · $8359 - 343 = 8016$ (M) · $10117 - 2411 = 7706$ (C) · $5668 - 186 = 5482$ (E)

Clue 4 (Addition): "THE HELMET SHOWED A SHINY ROCKET DECAL"

$1333 + 2691 = 4024$ (T) · $2366 + 2949 = 5315$ (I) · $3989 + 5777 = 9766$ (Y) · $2488 + 3549 = 6037$ (L) · $1613 + 3474 = 5087$ (D) · $3123 + 6217 = 9340$ (M) · $2084 + 4771 = 6855$ (W) · $2109 + 1039 = 3148$ (O) · $3203 + 4539 = 7742$ (N) · $3154 + 4931 = 8085$ (K) · $2885 + 6702 = 9587$ (E) · $2521 + 1099 = 3620$ (C) · $2760 + 1825 = 4585$ (H) · $1987 + 1023 = 3010$ (S) · $3082 + 3655 = 6737$ (A) · $4763 + 4019 = 8782$ (R)

Clue 5 (Division facts (1-12)): surviving statement is box 11 → Sunita Williams

$24 \div 8 = 3$ · $35 \div 7 = 5$ · $90 \div 9 = 10$ · $27 \div 3 = 9$ · $16 \div 4 = 4$ · $48 \div 4 = 12$ · $6 \div 3 = 2$ · $36 \div 6 = 6$ · $21 \div 3 = 7$ · $3 \div 3 = 1$ · $32 \div 4 = 8$